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Does Healthcare Deliver?

Results from the Patient-Reported Indicator Surveys (PaRIS)

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OECD
BETTER POLICIES FOR BETTER LIVES

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Foreword

The Patient-Reported Indicator Surveys (PaRIS) is an initiative of the OECD where countries work together on developing, standardising and implementing a new generation of indicators that measure the outcomes and experiences of healthcare that matter most to people. This report presents the results of the first international survey of primary care patients aged 45 years and older, with an emphasis on the largest and fastest-growing group of healthcare users: people with chronic conditions. By capturing patients' self-reported health outcomes and experiences, this survey offers an invaluable perspective for assessing healthcare systems across the OECD and beyond.

Drawing on data from over 107 000 patients across more than 1 800 primary care practices in 19 countries, PaRIS provides a rich foundation for understanding how healthcare systems can better address the needs and priorities of patients.

The final report is the result of a shared effort of country officials, patient representatives, primary care professional representatives, experts, and the OECD Directorate for Employment, Labour and Social Affairs. The international PaRIS-SUR consortium provided technical support.

The development of this report was guided by Stefano Scarpetta, Mark Pearson and Francesca Colombo. The report was prepared by the PaRIS team of the OECD Health Division, with contributions from several members: Katherine de Bienassis led Chapter 6 on trust. Diana Castelblanco contributed to writing and analysis for Chapter 2 on country comparisons, and contributed to data management and statistical analysis for all chapters. Ángel González contributed to writing and statistical analysis for Chapters 3, 4, 5 and 6 as well as data visualisation. Chris James led Chapter 2. Candan Kendir led Chapter 3 about living with multiple chronic conditions and supported overall project management. Nicolás Larrain led the overall data management and statistical analyses tasks in close collaboration with the PaRIS consortium, carried out quality checks on analyses conducted by other authors, and led the writing of Chapter 7 about the methods. Michael van den Berg was responsible for overall project management, led Chapter 5 on inequalities and co-led Chapter 1 together with Frederico Guanais. Frederico Guanais was responsible for overall supervision, led Chapter 4 about people-centredness and co-led Chapter 1 together with Michael van den Berg. All authors reviewed and provided feedback on each other's chapters, ensuring consistency and coherence throughout the report. Paul Gallagher supported the writing of Chapter 1 and the executive summary.

Administrative support was provided by Sabina Kovačić, Isabelle Vallard, Guillaume Haquin and Georgio Cerniglia. Communication support was provided by Lucy Hulett and Alastair Wood.

The International PaRIS-SUR Consortium supported the development of the survey tools and survey design, implementation, testing and data collection and data analyses and provided input on draft chapters of this report. The Consortium was led by NIVEL, the Netherlands Institute for Health Services Research and supervised by Mieke Rijken, Dolf de Boer and Judith de Jong. Other consortium members were the University of Exeter, Optimedis, the Avis Donabedian Research Institute (FAD) and IPSOS. See Annex A for more details about the PaRIS-SUR Consortium. The Technical Advisory Community advised the PaRIS-SUR consortium on technical issues, including the development of conceptual framework, survey

tools and protocols, sampling methods, survey implementation, methodologies or analysis, data privacy, ethical issues and other scientific or technical issues.

The High-Level Reflection Group on the Future of Health Statistics signalled an essential gap in knowledge in their advice to the OECD Health Ministers in January 2017 and advised to invest in patient-reported measures. This was an important starting point for PaRIS.

The PaRIS project was steered by the OECD Health Committee and the OECD Working Party for the Patient-Reported Indicator Surveys, which was chaired by respectively Patrick Jeurissen, Gillian Bartlett-Esquilant and André Peralta-Santos. The OECD Working Party on Health Care Quality and Outcomes (HCQO) advised in the development stage of the survey. The Committee on Statistics and Statistical Policy (CSSP) advised on data collection, analysis and reporting. The National Project Managers led the survey implementation in their countries, including sampling, recruitment, testing and data collection (see Annex A). The international PaRIS Patient advisory Panel (PaRIS-PP) – chaired by Kaisa Immonen, Cecilia Rodriguez, Cajsa Lindberg, Cristina Parsons Perez, Rebecca Barlow-Noone and Elizabeth Deveny between 2019-2025, was involved in each step, from the survey development till the dissemination of the flagship report results. The World Organisation of Family Doctors (WONCA) – represented by Amanda Howe, Harris Lygidakis, Job Metsemakers, María Pilar Astier Peña, Andree Rochfort and Anna Stavdal – advised on the design, development and implementation of the survey as well as the interpretation of findings and preparation of the flagship report. The International Expert Group provided expert advice on the data analysis and interpretation of results (see Annex A).

The initial outline for the design was created by the International PaRIS Taskforce, chaired by Patrick Jeurissen. José Bijlholt, Ian Forde, Niek Klazinga, Jillian Oderkirk and Luke Slawomirski contributed to the development phase of the survey. Kaisa Immonen advised from patients' perspectives during the design phase. Diederik Aarendonk from European Forum for Primary Care (EFPC) and Piet van den Bussche from The European Association of Quality and Safety in General Practice/Family Medicine (EQuiP) provided feedback on the draft questionnaires. Joude Cachoux, Ella Nudell, Rushay Naik and Inês Francisco Viva contributed to the different stages of the project. Hannah Whybrow and Takumi Akama from the OECD provided administrative support during the design and development phases. Derick Mitchell, Cecilia Rodriguez, Elizabeth Deveny, Julie Spony, Kent Cadogan Loftsgard, Silke Schoch, Cristina Parsons Perez, Cajsa Lindberg and Rebecca Barlow-Noone provided oral and written feedback from the patients' perspectives on the draft flagship report. Mehmet Akman, Sara Ares, Viviana Martínez-Bianchi, Raquel Gómez-Bravo, Amanda Howe, Andree Rochfort, María Pilar Astier Peña from WONCA and Isabel Monteiro from EFPC provided comments from the primary care professionals' perspectives on the draft flagship report. The colleagues from the OECD Health Division have provided invaluable input in all stages of the project. We are grateful to the patients with lived experiences who generously shared their stories that are included throughout this report.

Table of contents

FIGURES

INFOGRAPHICS

TABLES

Abbreviations and acronyms

CS	Confidence to self-manage
EC	Experienced co-ordination
eHEALS	e-Health Literacy Scale
EQ	Experienced quality
GDP	Gross Domestic Product
GH	General Health
LE	Life Expectancy
MCBS	Medicare Current Beneficiary Survey
MH	Mental Health
P3CEQ	Person-Centred Co-ordinated Care Experiences Questionnaire
PaRIS	Patient Reported Indicator Surveys
PaRIS-10	PaRIS ten key indicators
PaRIS-PCPQ	PaRIS Primary Care Practice Questionnaire
PaRIS-PQ	PaRIS Patient Questionnaire
PC	Person-centred care
PH	Physical Health
PNS	Porter Novelli Scale
PREMs	Patient reported experience measures
PROMIS	Patient-Reported Outcomes Measurement Information System
PROMs	Patient reported outcome measures
SF	Social Functioning
TH	Trust in healthcare system
WB	Well-being

PaRIS country ISO codes

Australia	AU
Belgium	BE
Canada	CA
Czechia	CZ
France	FR
Greece	GR
Iceland	IS
Italy	IT
Luxembourg	LU
Netherlands	NL
Norway	NO
Portugal	PT
Romania	RO
Saudi Arabia	SA
Slovenia	SI
Spain	ES
Switzerland	CH
United States	US
Wales (United Kingdom)	GB-WLS

Executive summary

Healthcare systems are under pressure and need more and better steering information

In all OECD countries and beyond, healthcare systems are under unprecedented pressure to strengthen their resilience. This follows the dramatic impact of the COVID-19 pandemic, and the need to address new demands coming from the demographic transition and technological change. To effectively respond to this pressure, policy makers need the best possible array of information and data. Much progress has already been made through harmonised OECD statistics to collect granular information on health spending and financing, on outcomes based on conventional metrics, such as mortality and morbidity rates, on clinical quality and safety of care, and on inputs such as number of doctors, nurses, hospital beds and other resources available.

To deliver better outcomes and experiences of care, essential information is lacking: The voice of patients

Yet, an essential piece of information is still lacking: the views of those directly concerned by health services – the patients – regarding their experiences with the healthcare system and the outcomes they reported. The OECD Patient Reported Indicator Surveys (PaRIS) addresses this knowledge gap by assessing not only whether patients survive but also whether they thrive. Unlike disease-specific assessments, PaRIS adopts a broader approach, evaluating how healthcare affects patients' lives across multiple dimensions. This comprehensive perspective has the potential to revolutionise the way we assess the performance of healthcare systems globally.

PaRIS is the first international survey to provide harmonised indicators on the healthcare experiences and health outcomes of people aged 45 years and older living with chronic conditions, particularly within the context of primary care. The survey echoes the voices of around 107 000 patients in more than 1 800 primary care practices in 19 countries (Australia, Belgium, Canada, Czechia, France, Greece, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, Romania, Saudi Arabia, Slovenia, Spain, Switzerland, Wales (United Kingdom) and the United States), representing nearly 104 million primary care users. The survey focuses on people aged 45 years and older as this group is growing in number but also in the complexity of their care needs.

Addressing these needs effectively requires changing the ways the healthcare system works; moving away from an episodic, curative approach focused on "addressing specific health concerns" towards a healthcare model that puts the "whole person" at the centre and that is organised around the needs of people.

PaRIS shines a spotlight on what matters most to patients in their care

PaRIS gives patients a voice. It captures what matters to them, including their physical functioning, social functioning and psychological well-being, putting together ten key indicators that summarise the primary care experiences and health outcomes of patients in the surveyed countries. The ten indicators include five Patient-Reported Experience Measures (PREMs). PREMs measure patients’ experiences with the healthcare they receive, including their confidence to self-manage health conditions, co-ordination of care, person-centred care, experienced quality of care, and trust in healthcare. The five other key indicators are Patient-Reported Outcome Measures (PROMs). PROMs capture patients’ assessment of their health and symptoms, in this case physical health, mental health, social functioning, well-being, and general health.

Most people are living longer, but not necessarily better, lives

Life expectancy at birth has increased by more than ten years across OECD countries since 1970, which has gone hand in hand with an increase in the number of people living with chronic conditions and higher healthcare costs. PaRIS finds that around 8 out of 10 people aged 45 years and older who had a primary care consultation in the previous six months have at least one chronic condition. More than half have two or more conditions, and more than a quarter even three or more. This takes a large toll on people’s lives. PaRIS results show that the average WHO-5 well-being score (a scale from 0 to 100) was five points lower among people with two chronic conditions and 14 points lower among people with three or more chronic conditions compared to people with one chronic condition.

Assessing the outcomes and experiences of people with chronic conditions helps in understanding how healthcare systems deliver for them

The PaRIS results allow for far deeper understanding of what matters to patients, enabling them to live longer, better and healthier lives. It highlights a clear relationship between patients’ experiences of primary healthcare and their self-reported physical, mental and social health, known as health outcomes. For example, PaRIS results show that in Switzerland and among the United States population aged 65 years and older enrolled in Medicare, most people consistently report positive care experiences and better health results compared to the OECD average. In Australia, Czechia, France and Norway, most people also report positive experiences with their care, along with relatively good health outcomes. There are countries that do well either on outcomes or in experience of care, but not at both, including Greece, Iceland, Italy, Portugal, Romania and Spain. Wales (United Kingdom) and Portugal display relatively poor outcomes and experiences of care. However, even in the countries with the best performance there are large variations in experiences and outcomes across different socio-economic groups.

It is not only, or mainly, a matter of spending more to achieve effective health outcomes…

PaRIS showed positive relations between health spending in a country and measures such as good physical health, well-being, and experienced quality of care. However, these correlations are not strong, except for physical health. This indicates that while higher health spending may be associated with better outcomes for some indicators, it does not guarantee improved patient outcomes or experiences across the board. Notably, it is possible to achieve comparatively strong performance at lower levels of health spending. Czechia and Slovenia, for example, both score well across most of the PaRIS indicators, while having relatively low health spending per capita. While the United States reports favourable scores on experienced quality and well-being, it spends more than double the amount per capita of some other countries with comparable scores.

…but the availability of doctors and nurses matters a lot to patients

Greater availability of health workforce is positively associated with three of the ten PaRIS key indicators. For example, in countries with larger health workforces, such as Iceland, Norway and Switzerland, the average level of well-being is higher. Similar patterns emerge for physical health and mental health scores. While this analysis does not establish causality, it highlights the potential benefits of investing in healthcare staffing to improve patient-reported health outcomes.

There are stark disparities in the experiences and outcomes of patients with different characteristics

Across all countries in the survey, there are significant gender gaps in the experiences and outcomes of patients. On average, women's well-being scores are typically 3% to 5% lower than men's. The gender gap is as high as 9% in some countries, such as Portugal and Italy, two countries with relatively low overall performance, and smaller than 3% in Luxembourg and the United States with relatively good performance. Socio-economic status, age, and living with multiple chronic conditions explain part of the difference, but even when these factors are considered, the report shows that women's well-being is still worse than men's.

Disadvantaged people with low levels of education and income face a double disadvantage: they fall ill and develop more chronic diseases earlier in life, and, once sick, they experience worse health outcomes compared to those with chronic conditions but who are better off in terms of education or income. Of patients between 45 and 54 years of age, 34% of higher-educated people have no chronic conditions, compared to only 23% among those with the lowest education levels. There are also significant differences in mental and physical health scores between the highest and lowest education and income groups, ranging from less than 2 to more than 7 points across education groups, and from about 2 to over 5 points across income groups (PROMIS® Scale v1.2 – Global Health components for physical and mental health: 10 points corresponds with approximately one standard deviation difference). Such disparities persist even after accounting for age and the number of chronic conditions, but country averages mask inequalities within countries. For example, both Canada and the United States have above-average mental health scores compared to other countries. However, while Canada has the smallest gap in mental health scores across education groups (1.6 points difference), the United States has the largest gap (7.8 points difference).

There is an urgent need to adapt healthcare systems to the needs of a growing population that lives with multiple chronic conditions

Managing multiple chronic conditions is far more complex and costly than managing a single condition. This is particularly important as PaRIS shows that, among the people who live with multiple chronic conditions, over 70% take at least three medications, and more than a third take four or more medications.

In addition to the number of conditions, their specific combination has important consequences for healthcare experiences and outcomes. Sixteen percent of the patients with chronic conditions in the survey live with at least one mental health condition. PaRIS shows that people with multiple chronic conditions report worse physical health and social functioning and are less confident that they can manage their own health when one of their conditions is a mental health condition.

What matters to patients: The “three T’s”

1. Patients value **Time**: Shorter waiting times and more time with primary care professionals are highly valued by patients. People who reported that their primary care professional spent enough time with them are almost 90% more likely to trust the healthcare system compared to those who did not perceive this was the case (64% compared to 34%). Patients who experience waiting times that they consider problematic are also less likely to trust the healthcare system, this pattern was consistent in all PaRIS countries. People with multiple chronic conditions who have longer time with primary care professionals are more likely to report better quality of care.

Results also show that continuous relationships matter to patients. Patients with a long-standing relationship with their primary care professional report better care experiences. The highest proportions of patients with such long-term continuity were observed in two of the countries with relatively good overall performance, Czechia and the Netherlands, but also in Romania. In these countries, over half of patients indicated being with the same primary care professional for more than a decade.

2. Patients need personally **Tailored care**: In managing care for people with (multiple) chronic conditions there is usually no “one-size-fits-all” solution. PaRIS results demonstrate that care becomes better tailored to people’s needs when healthcare professionals explain things clearly and provide written instructions to help patients manage their care at home.

Although most people with chronic conditions regularly consult healthcare professionals, they live with their conditions 24/7, requiring continuous self-management within their own environments. This highlights the importance of tailoring care to individual needs and equipping patients with the knowledge and skills necessary to manage their own health and well-being effectively.

People are significantly more confident in managing their health when doctors involve them in decisions and when they receive strong self-management support, with confidence levels highest in France and the Netherlands. Regular medication reviews and care plans enhance care co-ordination. While 85% of patients in some countries report having medication reviews, the use of care plans is much lower, averaging just 25% among patients with chronic conditions. In some countries, like Australia and Romania this exceeds one-third, but it falls below 10% in others, like Netherlands and Wales.

3. Patients need **Trouble-free and safe care**: People who have experienced an event or circumstance that could potentially cause them harm in healthcare – such as, not getting an appointment when needed, receiving a wrong or delayed diagnosis or treatment, or experiencing problems with communications between healthcare professionals – are 1.6 times less likely to trust the healthcare system compared to those who have not experienced such an adverse event (45% compared to 70%). In addition, 23% of patients with chronic conditions report having to repeat health information that should have been in their health records.

Digital tools could play a crucial role in addressing these challenges by improving communication, reducing errors, and enhancing care co-ordination. For instance, integrated digital health records can ensure that vital patient information is accessible across healthcare providers and patients, minimising the need for patients to repeat their medical history.

Digital technology can help improve patient experience and outcomes of care

The future of healthcare will not be doing “more of the same”. It will require a seismic shift from a short-term focus on tackling individual conditions to helping people manage several conditions over the long term.

Doing so includes simplifying websites and digital health tools to make them easier to understand, use and navigate. Older and less educated people have difficulty understanding health information and are less confident than younger people in using digital technology to manage their health. According to the PaRIS survey, in Iceland, Australia, France, Wales, Canada, Czechia and Switzerland, the more educated are at least 10 percentage points more likely to be confident in using health information from the internet. Moreover, on average people with high education are 26 percentage points more likely to say that their primary care practice website is easy to use.

There has been progress in the use of electronic health records to support better outcomes of care. However, continuity of care still suffers from poor information exchange. While electronic health records are used in 95% of the primary care practices participating in PaRIS, only half of all practices can exchange these records electronically with other practices. Practices were more likely to report being able to share electronic records in the Netherlands (97%), Belgium (92%), Norway (90%) and Australia (86%).

The use of digital tools in primary care improves person-centred care experience, but progress in their availability has been uneven. More than half (54%) of patients with chronic conditions have booked primary care appointments online, but only 17% have accessed their electronic medical records. While this is relatively common in the Netherlands (more than 50%) it is rare in countries like Czechia, Switzerland and Australia (all below 5%).

The use of videoconferences in primary care was the highest in Australia, where 36% of patients reported having done so but it is still uncommon in countries like Slovenia, Spain and the Netherlands where this was less than 3%. This highlights the critical need to improve the deployment of digital technology in primary care to enhance overall care experiences.

Common ground on better care

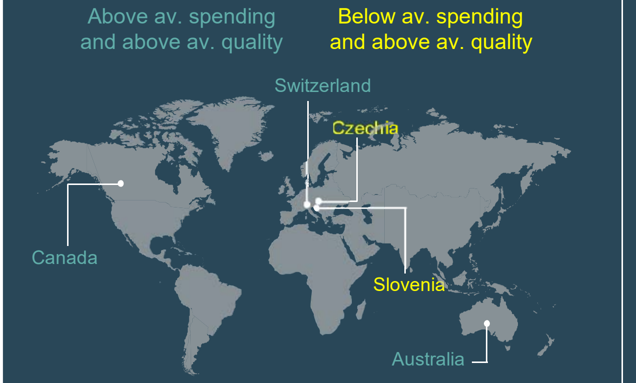
While there are many differences between patients there is also common ground. This report shows what patients care about when it comes to their primary care. Their voices matter. They matter in managing their own health and well-being.

PaRIS highlights the clear relationship between patients' experiences of healthcare and health outcomes. It shows that when patients rate their primary care as good, they feel healthier. It also highlights three cornerstones of what patients care about when it comes to their care: Time, personally Tailored care and Trouble-free care and it highlights the need to reduce gaps in experience and outcomes of care for women and people with low income and education.

Patients are people with unique, individual needs. PaRIS gives those patients a voice. It points the way for people everywhere to live longer and better lives.

Infographic 1. Key facts and figures

Positive care experiences are achievable even with lower health spending



Note: Quality refers to experienced quality, health spending is per capita

Vast majority of primary care users live with a chronic condition

% of people aged 45+ using primary care, cross-country average among PaRIS survey respondents

82% live with at least one chronic condition

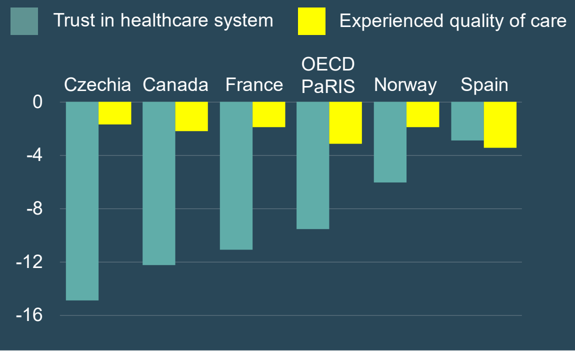
52% live with two or more chronic conditions

27% live with three or more chronic conditions

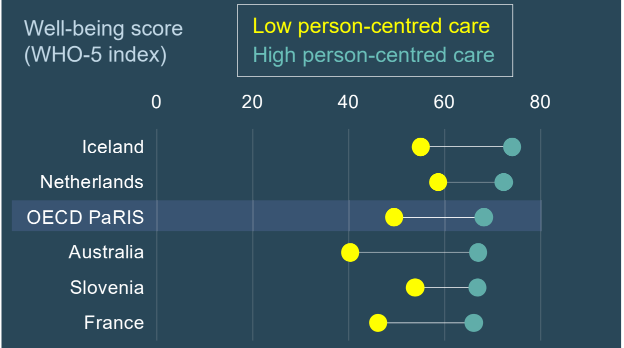
Over 70% of people who live with multiple chronic conditions take at least three medications, and more than a third take four or more medications.

Women report worse health outcomes and care experiences than men

% difference in positive responses for women compared to men (with at least one chronic condition)



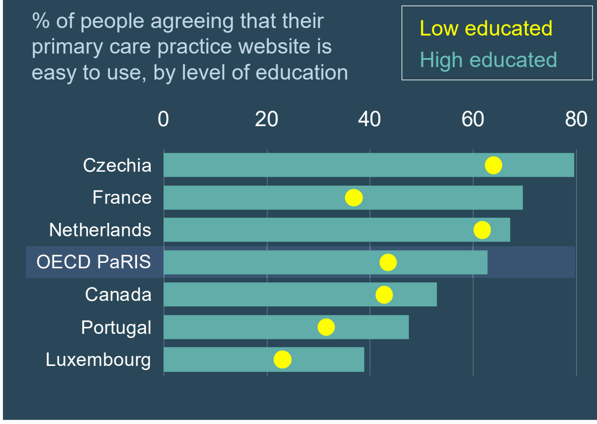
People receiving care focusing more on their needs have better overall well-being



Note: Person-centred care is care that focuses on the needs of individuals. Well-being was measured on a scale from 0 to 100, with scores below 50 considered poor.

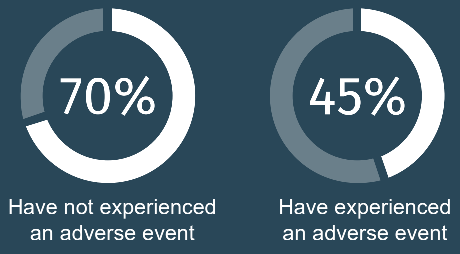
Primary care websites are difficult to use, particularly for lower educated people

% of people agreeing that their primary care practice website is easy to use, by level of education



Adverse events in primary care are linked with reduced trust in healthcare systems

% of people who trust the healthcare system according to whether or not they have experienced an adverse event



Note: An adverse event is an event or circumstance that could potentially cause harm in primary care.

1 Key findings of PaRIS

This chapter presents a selection of key findings from this report. It highlights how PaRIS addresses a significant gap in our current understanding of healthcare systems by capturing patient-reported outcomes and experiences. The chapter provides an overview of the scores on ten key indicators across all participating countries and explores the relationship between patient-reported outcome measures (PROMs) and patient-reported experience measures (PREMs). Additionally, it examines how these measures correlate with other critical indicators such as life expectancy, healthcare spending, and the health workforce.

The chapter also delves into important concepts such as multimorbidity – affecting more than half of the PaRIS population and having a severe impact on an increasing number of people. Other key themes include trust in healthcare systems, inequalities, the importance of a people-centred approach, and the role of care co-ordination in improving healthcare outcomes.

Incorporating patients' voices to accelerate the transformation of healthcare: The case for the Patient Reported Indicator Surveys (PaRIS)

For far too long, essential information to steer healthcare systems was lacking: the voice of the patient. While patient-reported experience and outcome measures (PREMs and PROMs, respectively) have been implemented in various contexts, their application has often been episodic, focused on specific conditions, and are rarely comparable across countries**.** The OECD's Patient Reported Indicator Surveys (PaRIS) fills this knowledge gap by assessing whether patients truly thrive. It shifts the focus of healthcare performance away from traditional metrics such as mortality, morbidity, hospital admissions, consultations and procedures to patient's health outcomes such as quality of life, well-being, and patients' experiences of the healthcare that they receive. PaRIS shows how healthcare impacts people's lives across multiple dimensions, including physical health, mental health and their ability to fulfil social roles. This comprehensive perspective has the potential to revolutionise the assessment and improvement of healthcare system performance globally.

Expanding healthcare's focus from traditional biomedically-oriented outcomes to how well people live is essential for the sustainability of health and social policies in the long term. Metrics like life expectancy and morbidity statistics are widely used indicators of population health and provide meaningful insights. However, they offer only a partial view of healthcare system performance, emphasising longevity and clinical parameters over lived experience.

PaRIS seeks to complement these conventional metrics by shifting attention to how well people live, not just how long. By prioritising measures of quality of life and well-being, the initiative aims to provide a better understanding of healthcare outcomes, enabling policies that support both individual and societal health sustainability.

Predictable global trends are reshaping the future of healthcare, highlighting the need for urgent, forward-looking policies that prioritise keeping people active and autonomous as they age. Key trends include declining fertility rates, increased longevity, population ageing, rising health expenditures (already surpassing 10% of GDP in many OECD countries), growing shortages of healthcare workers such as doctors and nurses, and the steady increase in the number of people living with chronic conditions.

In this context, enabling people to remain active, productive, and independent as they age is essential. This approach not only supports individual well-being but also ensures the financial sustainability of healthcare and social services across OECD countries for the decades ahead.

PaRIS harnesses the power of patients' voices as a transformative force in healthcare. To achieve this goal, it matches data collected from patients with information reported by their primary care practices about the provision of healthcare services. This focus on primary care is particularly important because most healthcare globally takes place outside hospitals and within communities, with primary care typically supporting people close to where they live. By integrating these perspectives, the PaRIS survey underscores the critical role of primary care in meeting the needs of populations.

When taken and analysed together, the indicators reported by patients, their primary care practices, and the characteristics of healthcare systems across OECD countries serve as a roadmap to more people-centred and effective care, tailored to the unique needs of diverse populations.

PaRIS key figures

PaRIS contains the world's largest international data collection on patient-reported outcomes and experiences of primary care patients.

- **107 011** primary care patients completed the patient questionnaire and have valid data, representing **104 million primary care users** who are 45 years and older
- **1 816** primary care practices have filled out the primary care practice questionnaire
- **19** countries participated

PaRIS captures the outcomes that matter most to patients, such as their mental health, physical functioning, and psychological well-being, together with their experiences of care. The survey is the first of its kind to provide harmonised indicators for 19 countries on the experiences and outcomes of people aged 45 years and older living with chronic conditions. It also measured key dimensions of their experiences of healthcare, such as their experience of quality, co-ordination, and person-centredness of care, and their trust in the healthcare system. These indicators have been selected in close collaboration with patients. Experts and stakeholders agreed on a key set of ten indicators (the PaRIS10) that serve as the backbone for the flagship report, including five PROMs and five PREMs. A detailed explanation of how each of these indicators were constructed is presented in Annex 1.A, and Table 1.1 below presents country-level results of these indicators across the 19 participating countries.

PaRIS results show a relationship between better experience of care by patients and better health outcomes. This is clear in Switzerland and the United States, where people consistently report more positive care experiences and better health results compared to the OECD average. Similar patterns are seen in Australia, Czechia, France and Norway where people report mostly positive experiences with their care, along with relatively good health outcomes.

Table 1.1. Country scores on ten key indicators (The "PaRIS10")

Percentage of people reporting positive outcomes or experiences and average scores, for primary care users aged 45+ living with one or more chronic conditions (age-sex standardised results)

	Patient-Reported Outcome Measures (PROMs)					Patient-Reported Experience Measures (PREMs)				
	Physical health	Mental health	Social functioning	Well-being	General health	Confidence to self-manage	Experienced co-ordination	Person-centred care	Experienced quality	Trust in healthcare system
Positive outcomes	≥ 42	≥ 40	Good, very good, excellent	≥ 50	Good, very good, excellent	Confident, very confident	≥ 7.5	≥ 12.0	Good, very good, excellent	Agree, strongly agree
OECD PaRIS	45 (70%)	47 (83%)	83%	60 (71%)	66%	59%	8.2 (59%)	16.3 (85%)	87%	62%
Australia	47 (74%)	48 (81%)	80%	59 (70%)	74%	61%	9.6 (74%)	18.1 (94%)	94%	64%
Belgium	45 (68%)	46 (83%)	85%	60 (71%)	72%	63%	8.8 (67%)	17.9 (93%)	95%	70%
Canada	47 (77%)	49 (87%)	87%	62 (74%)	83%	59%	9.3 (71%)	12.1 (63%)	94%	61%
Czechia	46 (72%)	48 (87%)	88%	60 (72%)	63%	68%	9.2 (70%)	17.1 (90%)	96%	54%
France	45 (68%)	46 (87%)	91%	58 (67%)	76%	92%	8.4 (61%)	17.1 (92%)	91%	61%
Greece	45 (69%)	45 (78%)	87%	58 (66%)	69%	37%	7.1 (47%)	14.6 (79%)	74%	36%
Iceland	44 (65%)	47 (82%)	78%	63 (74%)	62%	35%	6.2 (34%)	14.9 (77%)	74%	54%
Luxembourg	45 (72%)	47 (86%)	86%	60 (71%)	71%	56%	8.5 (63%)	17.0 (91%)	93%	66%
Netherlands	47 (74%)	47 (85%)	82%	65 (79%)	64%	78%	7.3 (49%)	16.8 (90%)	92%	71%
Norway	47 (75%)	47 (83%)	80%	63 (76%)	63%	47%	7.6 (51%)	16.3 (87%)	92%	73%
Portugal	43 (57%)	43 (67%)	73%	56 (61%)	42%	61%	7.3 (49%)	14.9 (77%)	69%	54%
Romania	41 (52%)	44 (75%)	75%	59 (65%)	43%	42%	10.3 (78%)	17.4 (93%)	80%	52%
Saudi Arabia	46 (68%)	52 (93%)	93%	59 (65%)	93%	73%	6.5 (37%)	15.9 (87%)	89%	74%
Slovenia	46 (74%)	47 (85%)	88%	61 (72%)	62%	61%	8.2 (57%)	16.4 (85%)	89%	63%
Spain	43 (60%)	46 (81%)	79%	60 (69%)	55%	67%	8.5 (65%)	16.4 (85%)	85%	89%
Switzerland	47 (82%)	49 (91%)	90%	65 (80%)	79%	67%	10.3 (81%)	19.1 (97%)	97%	71%
Wales	44 (60%)	46 (75%)	73%	53 (59%)	62%	51%	5.0 (22%)	13.7 (66%)	72%	46%
Italy*	44 (66%)	45 (76%)	78%	56 (62%)	39%	24%	9.5 (72%)	16.3 (88%)	78%	62%
United States**	48 (75%)	51 (89%)	90%	64 (76%)	81%	74%	9.3 (72%)	18.4 (95%)	94%	65%

■ Better than the OECD PaRIS average (statistically higher, at 1+ comparative interval above).
▨ Close to the OECD PaRIS average (not statistically different, within one comparative interval).
□ Worse than the OECD PaRIS average (statistically lower, 1+ comparative interval below).

Note: For all indicators, percentage values are shown, measuring the percentage of people reporting a positive outcome or experience (for example, patients reporting being in good, very good or excellent general health). For five indicators, the average respondent scale score is also shown. See Chapter 2, Table 2.1 for more information on the cutoffs for positive responses and the scales used. Cells are colour-coded to show if values are statistically different to the OECD PaRIS average. In all cases, higher numbers indicate better performance. In Spain, the trust measure was asked specifically about trust in the primary care professionals within people's primary care practice. This variation might influence trust levels in Spain and limit comparability with other countries that refer to trust in the healthcare system more broadly. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** United States sample only includes people aged 65 years or older.

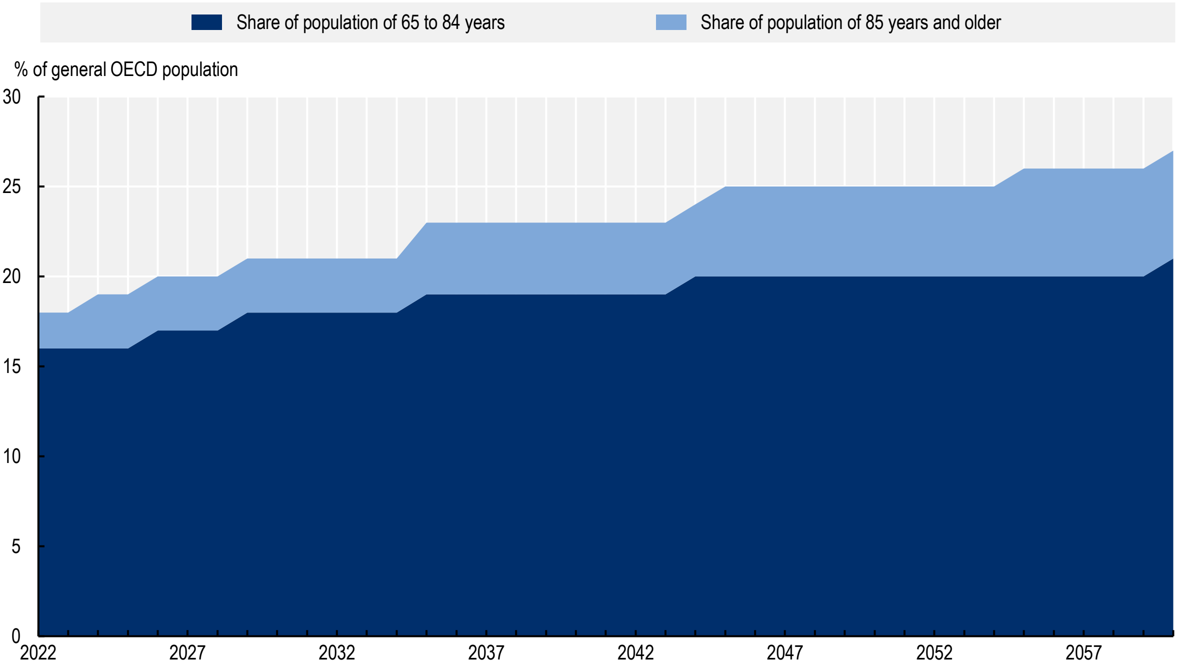
Source: OECD PaRIS 2024 Database.

Healthcare systems are struggling to support health and well-being of a population that is living longer, but not always living better

The demographic transition, evolving health behaviours, and the success of public health and healthcare in extending lives all contribute to the global rise in the number of people with chronic conditions. Addressing the needs of people with chronic conditions is already a key priority for healthcare systems, and the scale of this challenge is set to expand in the coming decades. Chronic conditions are prevalent, costly, and place a considerable burden on patients, caregivers, healthcare professionals, and healthcare systems. This "demographic transition", a combination of increasing life expectancy, combined with declining fertility rates, increases the proportion of older people in the population both in absolute numbers and as a proportion of the total. This development is expected to intensify the chronic disease burden. As shown in Figure 1.1, the share of the population aged over 65 is expected to grow from 18% in 2022 to 26% in 2060. The ageing of populations and the increasing life expectancy go hand in hand with the rising prevalence of chronic conditions, which now account for 74% of all deaths globally. As individuals age and accumulate multiple chronic conditions, they become more vulnerable to additional chronic conditions, leading to more severe health outcomes (The Lancet Regional Health – Europe, 2023[1]).

Figure 1.1. The number of people aged 65 years and older will continue to rise in OECD countries in the coming decades

Share of the OECD population between 65 years and 85 years old and aged 85 years and older; 2022 and expected development till 2060



Source: OECD Data Explorer (2024). Population Projections.

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Most people will spend decades of their lives managing one or more chronic conditions

Over 80% of people aged 45 and older who had a primary care consultation in the previous six months have at least one chronic condition, more than 50% have two or more, and more than 25% have three or more. The interplay between chronic conditions can lead to compounded effects, resulting in a diminished quality of life. People often face not only the physical limitations imposed by their health issues but also psychological and emotional challenges, as these conditions may affect social relationships, employment opportunities, and overall well-being. Furthermore, managing multiple conditions can create complex healthcare needs, leading to difficulties in accessing appropriate care and navigating treatment regimens.

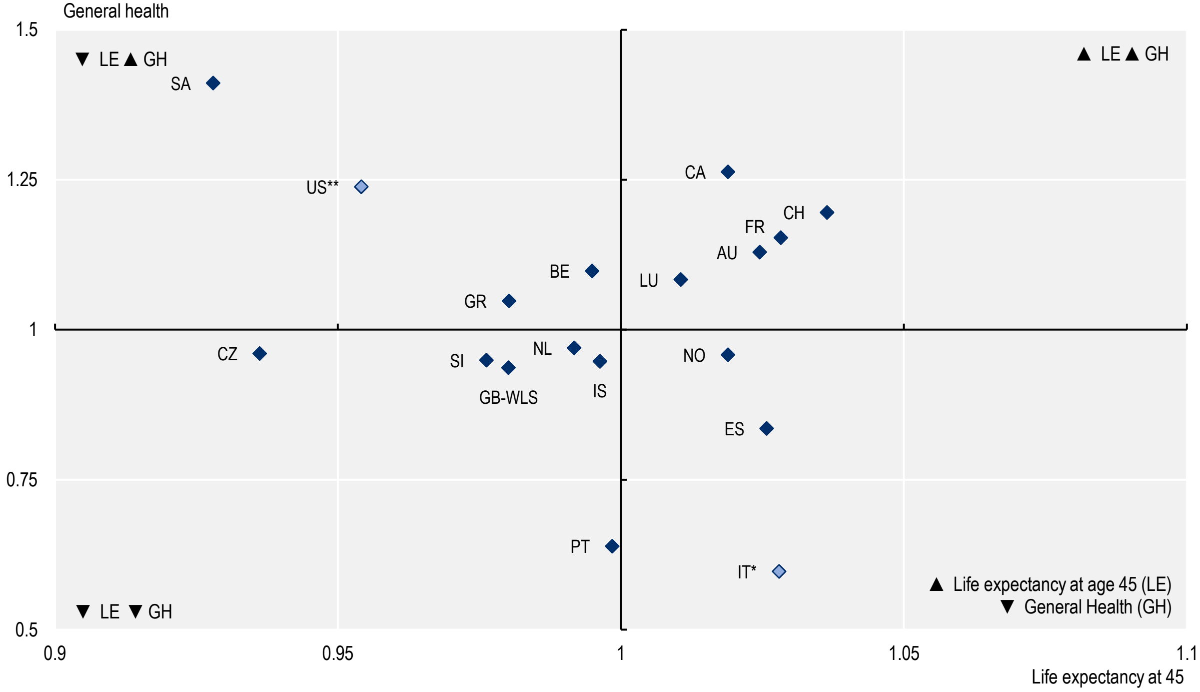
The remarkable increase in life expectancy over the past century is partly due to significant advances in living conditions, public health, and healthcare. However, longer lives also mean that many people spend additional years managing chronic conditions – a phenomenon often referred to as the "failure of success". **As more people navigate the complexities of managing several health conditions simultaneously, the need for effective disease management and well-co-ordinated care becomes paramount, and so is measurement that captures these aspects of care.**

When put together with life expectancy data, PaRIS results highlight that people are living longer but not necessarily better

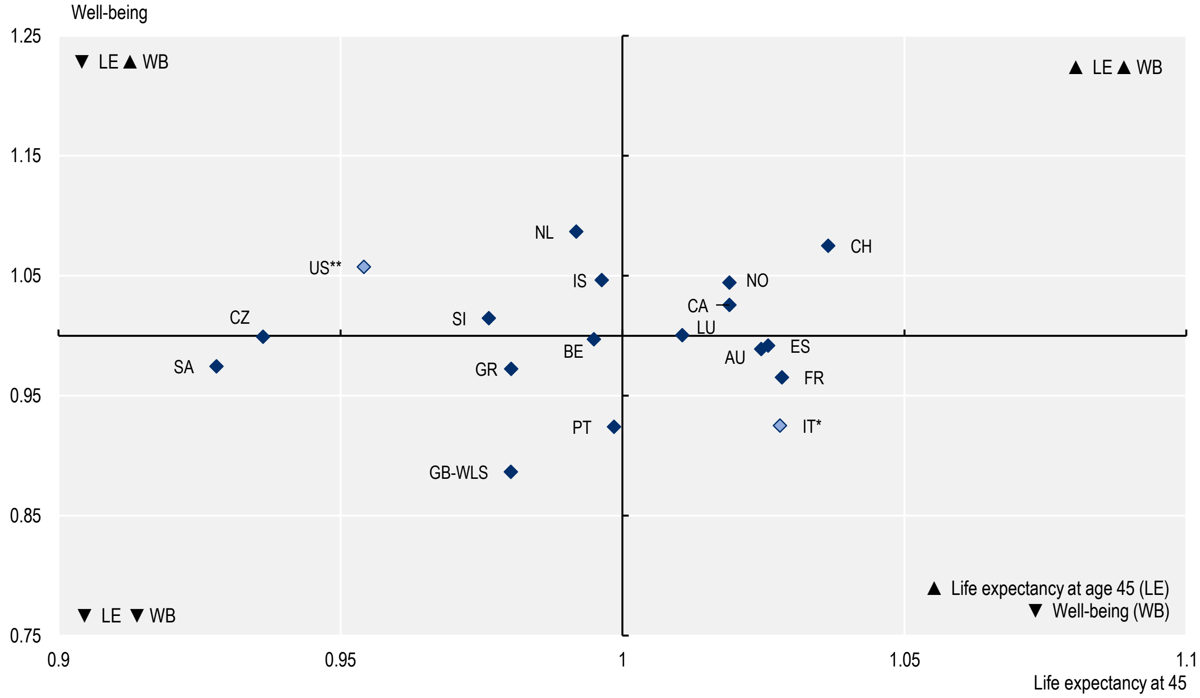
When PaRIS results are compared with life expectancy data, the link between life expectancy and PROMs is weak which suggests that people are living longer but not necessarily better. Figure 1.2 illustrates this, showing life expectancy alongside general health above and well-being below. The countries in the quadrants at the left have a life expectancy at age 45 that is below the average of the participating countries, on the right are the countries with above average life expectancy at age 45. The upper two quadrants include the countries where patients report respectively above OECD PaRIS average scores for being in good general health and well-being, the lower two quadrants the countries with patients in good general health and well-being below the OECD PaRIS average. No clear patterns or correlations emerge from these figures. This confirms that just because people are living longer, they are not necessarily living better.

Figure 1.2. Life expectancy at age 45 says little about health and well-being

A. Life expectancy at age 45 and general health



B. Life expectancy at age 45 and well-being



Note: Values on both axes were divided by the OECD PaRIS average, meaning that 1 equals the OECD PaRIS average and values above and under 1 respectively for above and under the OECD PaRIS average. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. AU: Australia, BE: Belgium, CA: Canada, CZ: Czechia, FR: France, GR: Greece, IS: Iceland, LU: Luxembourg, NL: Netherlands, NO: Norway, PT: Portugal, SA: Saudi Arabia, SI: Slovenia, ES: Spain, CH: Switzerland, GB-WLS: Wales, IT: Italy, US: United States.
Source: UN World Population Prospects 2023; OECD PaRIS 2024 Database.

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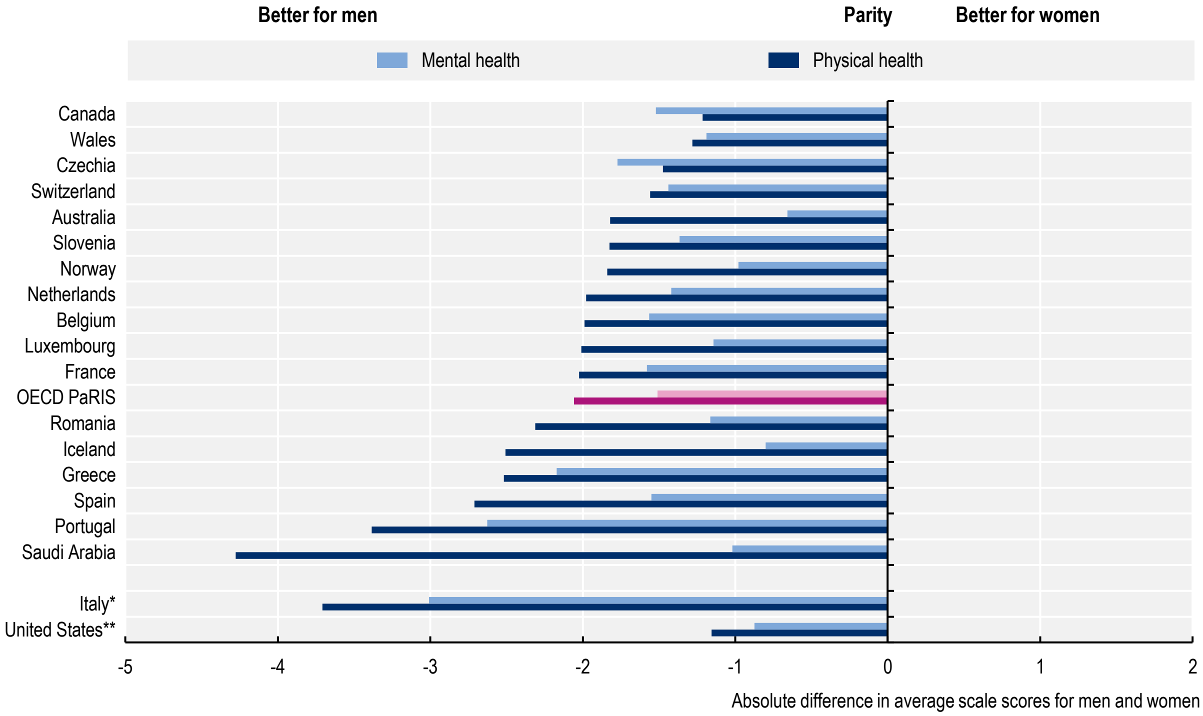
The disconnect between higher longevity and worse quality of life is particularly true for women

Women live longer than men, but they often report poorer physical and mental health. This is illustrated in Figure 1.3. For all people with chronic conditions, 74% of men and 65% of women have good physical health, and 86% of men and 81% of women have good mental health. Also women's well-being scores are typically 3% to 5% lower than men's, and in some countries, the gap reaches as high as 9%. Socio-economic status, age, and living with multiple chronic conditions explain part of the difference, but even when these factors are considered, PaRIS data show that women's well-being is still worse than men's.

Figure 1.3. Men may live shorter lives but report better physical and mental health than women

Absolute differences in average scores per country for men and women with at least one chronic condition on physical and mental health



Note: People with one or more chronic conditions. Physical health: PROMIS® Scale v1.2 – Global Health component for physical health and mental are T-score metrics, higher values represent better physical health. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** United States sample: only includes people of 65 years and older. Physical health: all gaps statistically significant ($p<0.05$) except for Canada and the United States. Mental health: all gaps statistically significant ($p<0.05$) except for Australia, Iceland, Luxembourg, Romania and the United States.
Source: OECD PaRIS 2024 Database.

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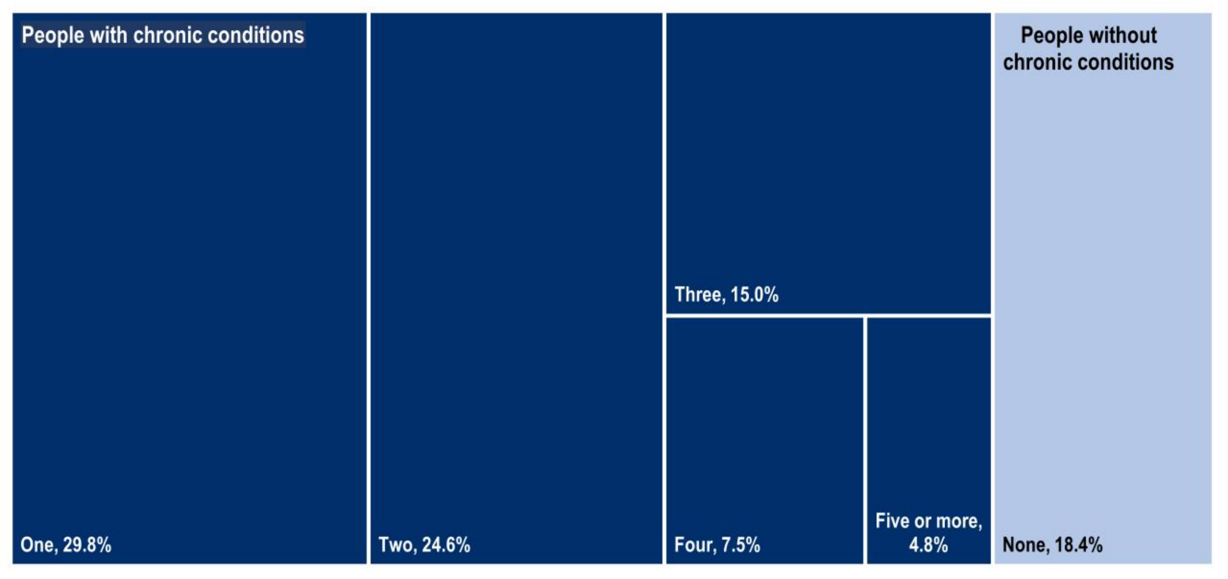
Healthcare systems must do more to address the needs of a population that increasingly lives with multiple chronic conditions

More than half of primary care users who are 45 years or older have two or more chronic conditions

PaRIS data show that 82% of people aged 45 years or older who had a primary care consultation in the six months preceding the survey live with at least one chronic condition and 52% lives with two or more, as shown in Figure 1.4. Managing these conditions is usually far more complex and resource-intensive than dealing with a single condition, and this is putting pressure on healthcare systems and healthcare professionals to deliver high-quality, well-co-ordinated care. It's not about doing "more of the same" – healthcare systems must shift their focus from individual diseases to how people can live better lives and manage their conditions effectively over the long term.

Figure 1.4. Eight out of ten primary care users live with a chronic condition, more than half with multiple chronic conditions



Note: Results not age-sex standardised.
Source: OECD PaRIS 2024 Database.

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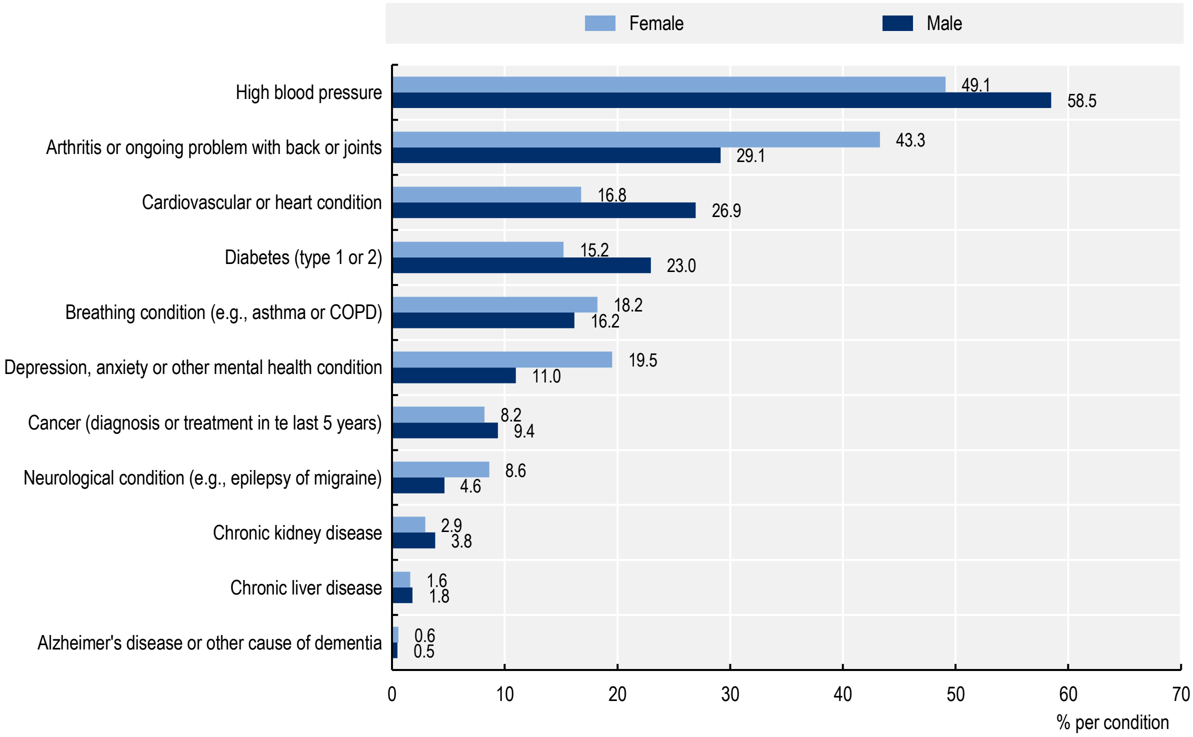
High blood pressure is the most frequently reported condition, affecting nearly 60% of men and 50% of women with at least one chronic condition, as indicated in Figure 1.5. Arthritis or an ongoing problem with back or joints comes next, affecting 43% of women and 29% men. Men are more likely to report cardiovascular conditions and diabetes than women; while women more often than men report depression, anxiety or other mental health conditions, as well as neurological conditions. While gender differences in prevalence may be partly attributed to biological factors, these may also reflect gender-related diagnostic and treatment biases or differences in propensity to seek care for certain conditions.

Figure 1.5. The most often reported condition was high blood pressure, followed by arthritis or ongoing problems with back or joints and cardiovascular or heart conditions



Note: 21.9% of men and 27.5% of women indicated having another chronic condition that was not in the list. Denominator: people who reported at least one chronic condition.
Source: OECD PaRIS 2024 Database.

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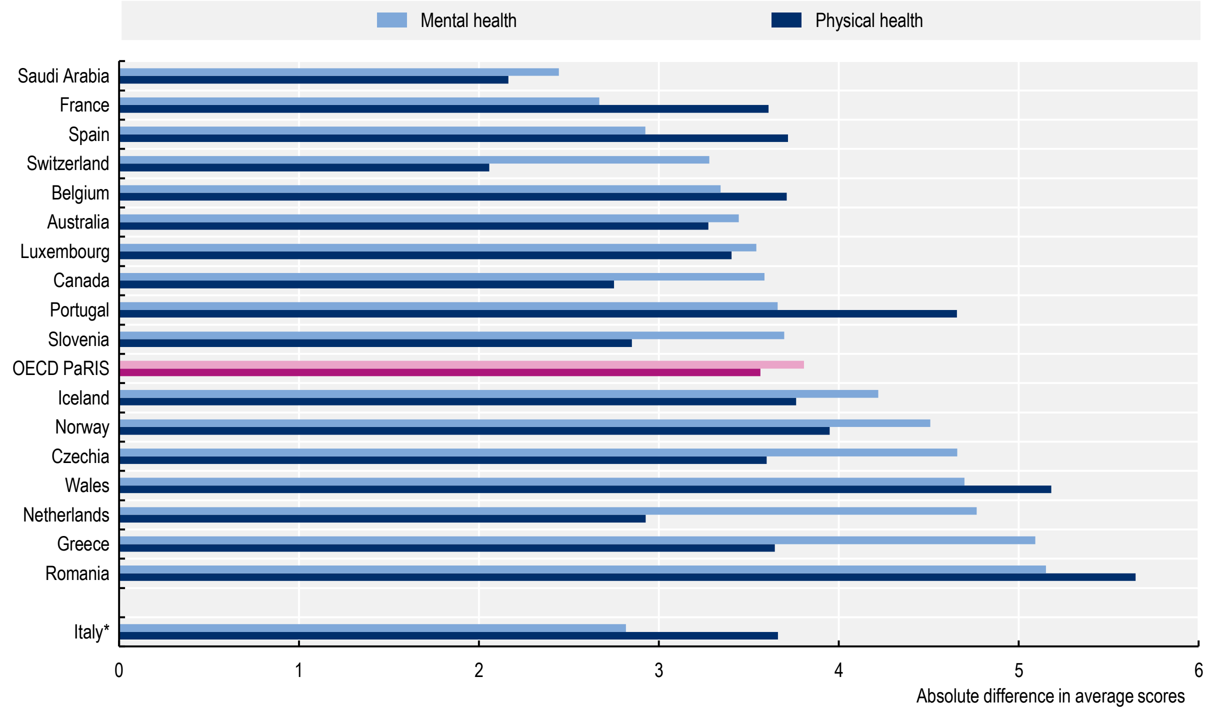
People with lower education and incomes develop chronic conditions earlier and accumulate them faster

People with lower education and incomes face a double disadvantage: not only do they fall ill earlier in life, they experience worse outcomes once sick compared to their higher earning or higher educated counterparts. For example, Figure 1.6 shows that there is a significant 5 to 10 percentage point difference in mental health scores between the highest and lowest income groups, which persists even when age and the number of chronic conditions is accounted for.

Figure 1.6. People with higher incomes report better physical and mental health score than people with lower incomes

Absolute differences in average scale scores for mental and physical health between highest and lowest income groups



Note: People with one or more chronic conditions. Results are additionally controlled for education. PROMIS® Scale v1.2 – Global Health component for physical health and mental are T-score metrics, higher values represent better physical health. Countries are sorted by gap in mental health. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. All differences are statistically significant (p<0.05).
Source: OECD PaRIS 2024 Database.

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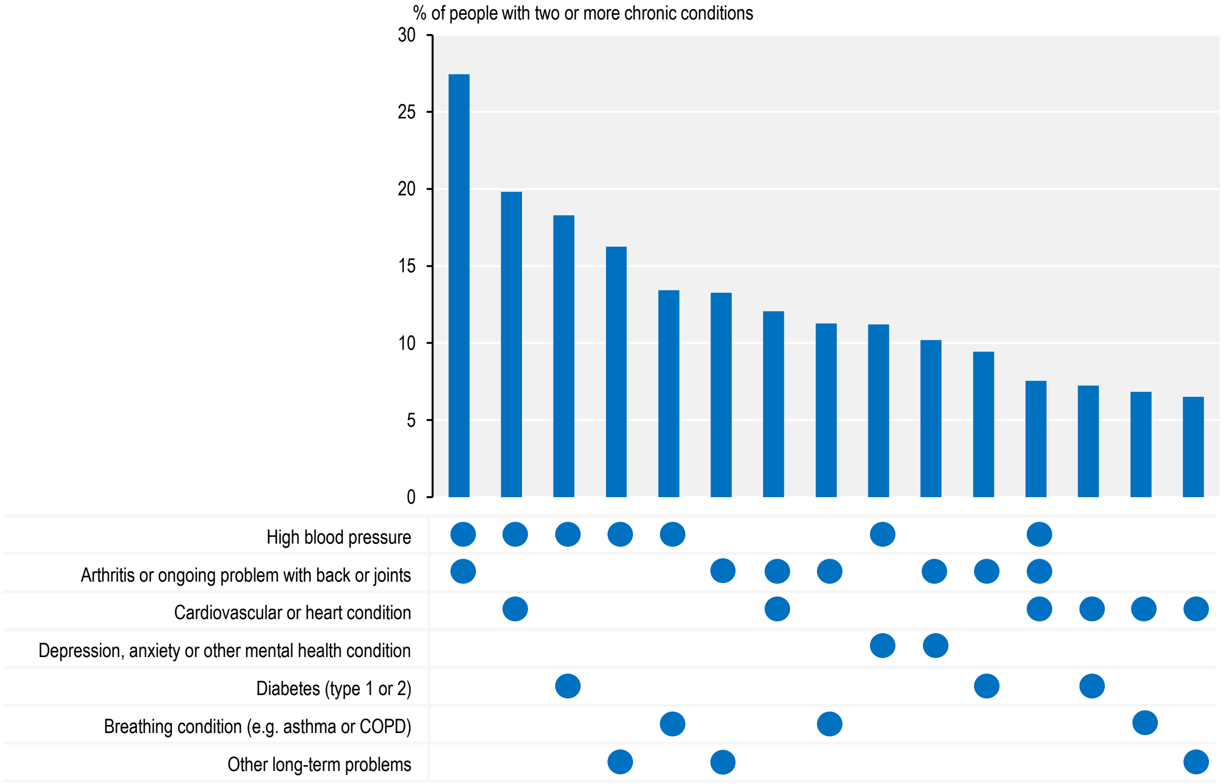
It is not only "how many", but also which combinations of chronic conditions people live with that matter for health outcomes

The PaRIS data reveal the high prevalence of chronic conditions that commonly occur together, particularly high blood pressure (hypertension), arthritis, cardiovascular disease, and mental health conditions. This underscores the need for integrated care models to address these overlapping health concerns. Among people with chronic conditions, the most common combination is arthritis with hypertension, affecting 27% of the population. This pairing is particularly important to address, as arthritis and other musculoskeletal problems might associate with worse physical functioning and well-being than other chronic conditions, thus less participation in social activities (Cheng et al., 2019[2]). This is followed by the combination cardiovascular disease with hypertension at 20% and diabetes mellitus with hypertension, at 18%, as indicated in Figure 1.7.

Figure 1.7. Most people with chronic conditions reported having hypertension, along with arthritis, cardiovascular disease, and breathing or mental health conditions

Percentage of most common combinations of chronic conditions among people with two or more conditions



Source: OECD PaRIS 2024 Database. See https://stat.link/xvp4e3.

Mental health is a critical component in the management of multiple chronic conditions

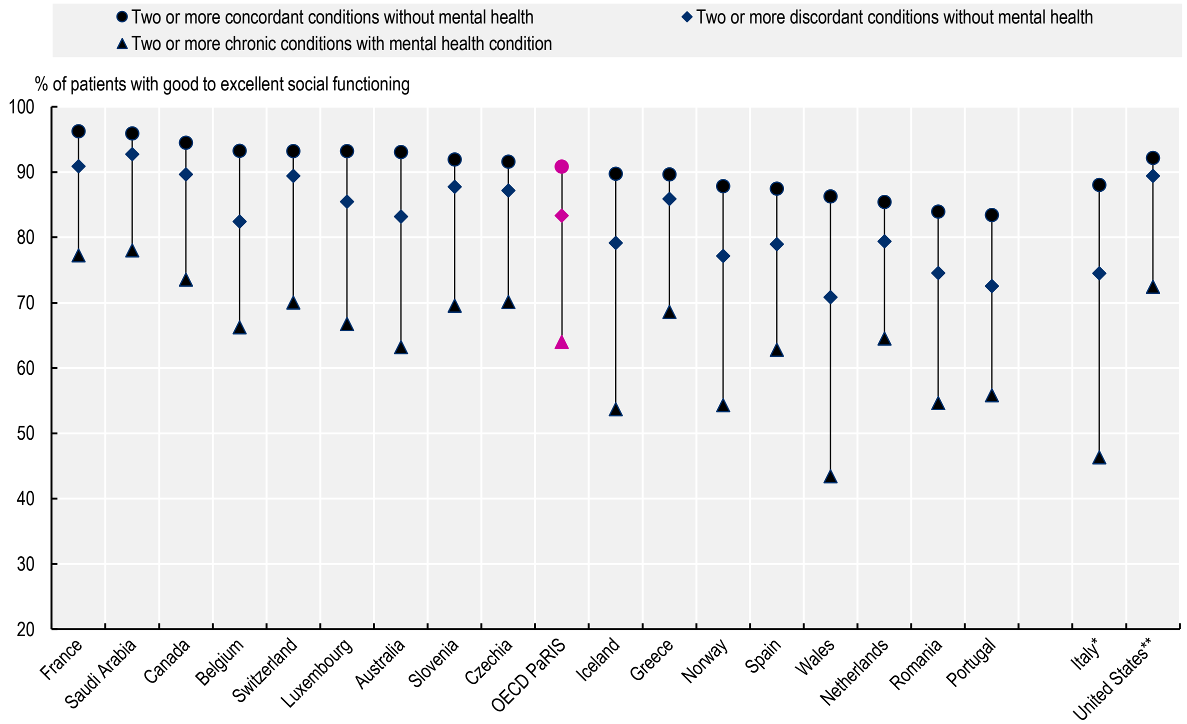
Addressing mental health needs is critical for the successful management of multiple chronic conditions. Sixteen percent of the patients with chronic conditions in the survey live with at least one mental health condition. People with multiple chronic conditions report worse physical health and are less confident that they can manage their own health when one of their conditions is a mental health condition. While fewer people with multiple chronic conditions in general report good social functioning compared to people with one chronic condition, this negative relation is amplified when one of these conditions is a mental health condition.

PaRIS results show that mental ill-health takes a particularly important toll on the social functioning of people living with multiple chronic conditions. As shown in Figure 1.8, among people with two or more chronic conditions, the lowest percentage reporting good social functioning is observed when at least one of their conditions is a mental health condition: only 64% of respondents of people in this group reported good social functioning. In contrast, among people with two or more chronic conditions without a mental health condition, 83% report good social functioning when the conditions are discordant (i.e. conditions that do not share a common causal mechanism) and 91% report good social functioning when the conditions are concordant ones (i.e. conditions that frequently occur together and share common causal mechanisms).

These results highlight two critical messages. First, patients with multiple chronic conditions, of which one involves a mental health condition, have significantly higher needs. Addressing these needs requires healthcare systems to adopt integrated care models that co-ordinate seamlessly with social care services, ensuring simultaneous support for both mental and physical health.

Second, patients with discordant chronic conditions also demand specific policy attention. Unlike concordant conditions, where shared causal mechanisms can enable more effective management and coping strategies, discordant conditions often lack such commonalities. This can lead to fragmented care and greater challenges in maintaining social functioning, underscoring the need for tailored approaches to their care.

Figure 1.8. Among people with multiple chronic conditions, those who have a mental health condition are more likely to report poor social functioning



Note: PROMIS® Scale v1.2 – Global Health. Answer to the question: “In general, please rate how well you carry out your usual social activities and roles [further specified in questionnaire]”, “good, very good or excellent” versus “fair or poor”. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** United States sample only includes people aged 65 years or older. Differences between groups are statistically significant (p<0.05) for all countries except for Czechia, Greece, the Netherlands, Slovenia, Switzerland and the United States between concordant and discordant groups.
Source: OECD PaRIS 2024 Database.

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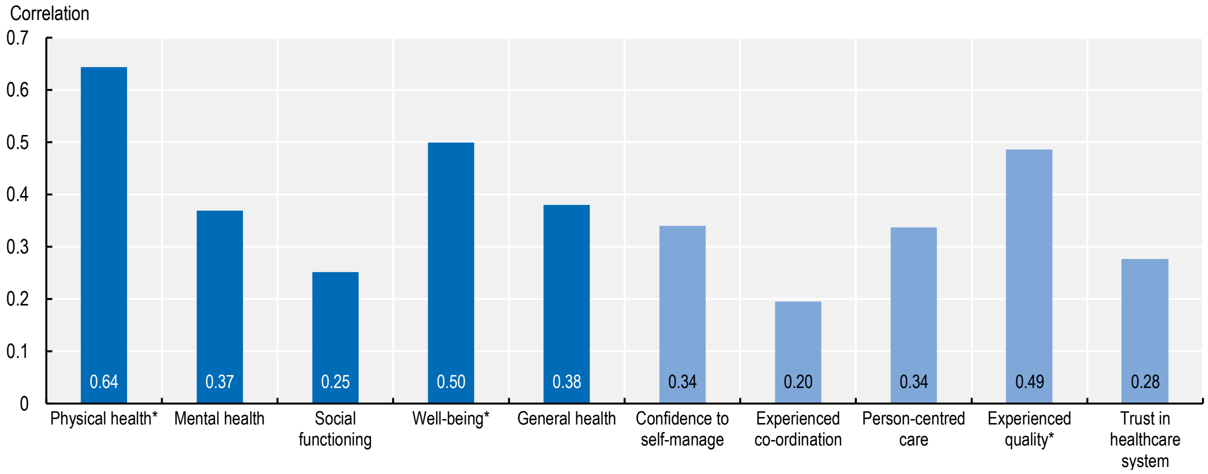
Doing more for people with chronic conditions does not necessarily mean *spending* more, but a larger health workforce is associated with better outcomes

Higher health spending is significantly associated with better results for only three out of the ten PaRIS indicators of health outcomes and experiences of care

There is a positive correlation between health spending and measures such as good physical health, well-being, and experienced quality of care, as confirmed by multivariate regression analyses that account for GDP per capita and core patient characteristics (age, sex, education, and chronic conditions). However, this correlation is moderate, with values below 0.50 for most indicators, except for physical health, which reaches 0.64. Furthermore, no significant correlation is observed for the remaining seven PROMs or PREMs (Figure 1.9).

This indicates that while higher health spending is associated with better outcomes for some PaRIS10 indicators, it does not guarantee improved patient outcomes or experiences across the board. Notably, it is possible to achieve comparatively strong performance at lower levels of health spending.

Figure 1.9. Higher health spending per capita is significantly associated with better physical health, well-being, and experienced quality of care, but not with the other seven PaRIS10 indicators



Note: An asterisk indicates a statistically significant correlation (p<0.05). In multivariate regressions which controlled for GDP per capita and patient characteristics (age, sex, education, chronic conditions), health spending per capita had a statistically significant coefficient for all the PaRIS10 indicators except "Experienced Quality".
Source: OECD Data Explorer, WHO Global Health Observatory, OECD PaRIS 2024 Database.

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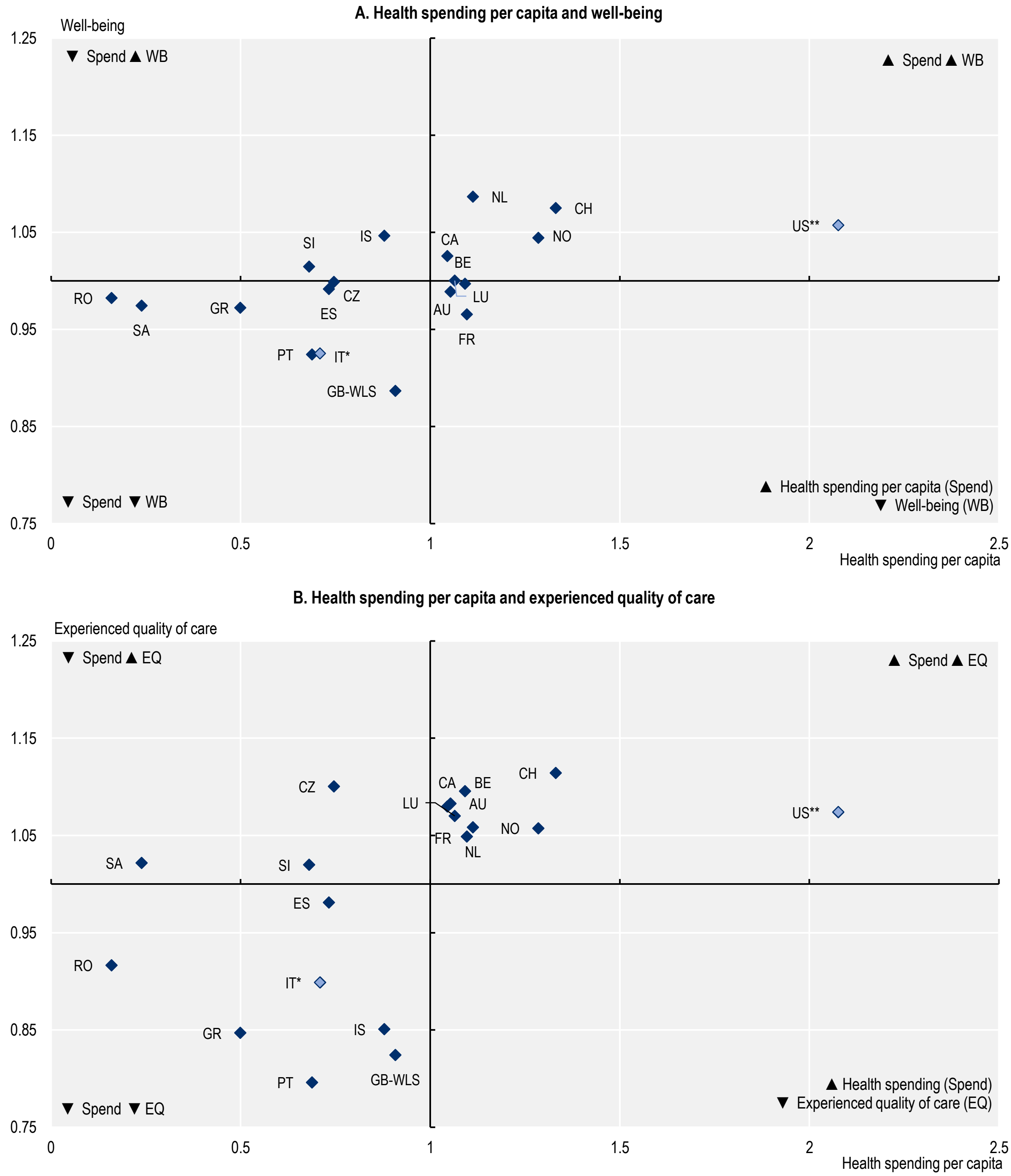
Strong outcomes and experiences of care are achievable even with lower-than-average health spending per capita

While higher health spending per capita is often linked to better patient-reported outcomes and experiences for certain indicators, high performance is not solely reliant on expenditure. For example, as shown in Figure 1.10, Czechia, Belgium and Switzerland achieve the highest scores for "Experienced Quality" while having very different levels of health spending per capita. Similarly, Iceland and Slovenia achieve well-being scores that are higher than the OECD PaRIS average whilst spending comparatively little per capita. Indeed, Czechia and Slovenia both score well across most of the PaRIS10 indicators, while having relatively low health spending per capita. Later chapters explore policies that can help drive strong results without substantial increases in health spending.

Figure 1.10. While patients often report better well-being and better quality of care in countries with higher health spending, some countries with relatively low levels of spending also have positive outcomes and experiences



Note: Values on both axes were divided by the OECD PaRIS average, meaning that 1 equals the OECD PaRIS average and values above and under 1 respectively for above and under the OECD PaRIS average. For GB-WLS, aggregate UK health spending values are used. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** United States sample only includes people of 65 years and older. AU: Australia, BE: Belgium, CA: Canada, CZ: Czechia, FR: France, GR: Greece, IS: Iceland, LU: Luxembourg, NL: Netherlands, NO: Norway, PT: Portugal, RO: Romania, SA: Saudi Arabia, SI: Slovenia, ES: Spain, CH: Switzerland, GB-WLS: Wales, IT: Italy, US: United States.
Source: OECD Data Explorer, WHO Global Health Observatory, OECD PaRIS 2024 Database.

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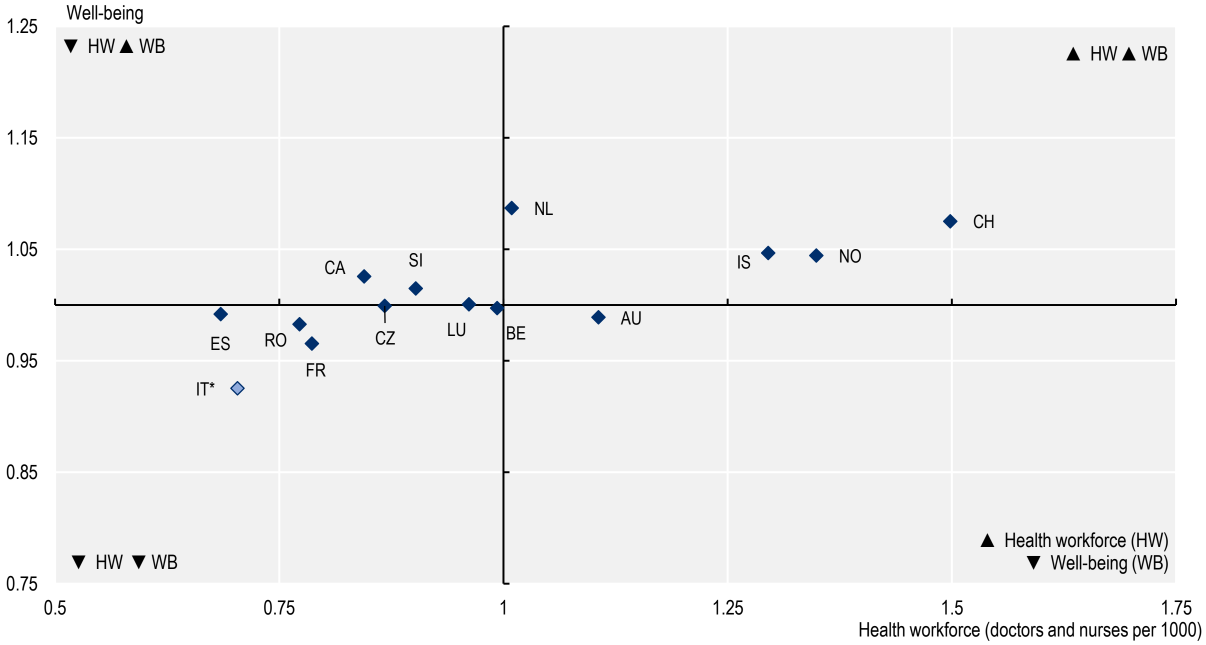
In countries with a higher availability of healthcare workers, people report better physical health, mental health, and well-being on average

Similarly to the analysis of health spending, greater availability of health workforce is significantly associated with three of the ten PaRIS key indicators. Interestingly, these associations are observed for three PROMs within the health workforce, while none are found for PREMs. Figure 1.11 compares the density of the healthcare workforce – measured as the number of doctors and nurses per 1 000 people – with the proportion of the population reporting good well-being, relative to the OECD PaRIS average. Similar patterns emerge for physical health and mental health scores. While this analysis does not establish causality, it highlights the potential benefits of investing in healthcare staffing to improve patient-reported health outcomes, particularly in areas where workforce availability can directly enhance the effectiveness of care.

Figure 1.11. Countries with a larger health workforce also report higher levels of well-being



Note: Values on both axes were divided by the OECD PaRIS average, meaning that 1 stands for the OECD PaRIS average and values above and under 1 respectively for above and under the OECD PaRIS average. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. AU: Australia, BE: Belgium, CA: Canada, CZ: Czechia, FR: France, IS: Iceland, LU: Luxembourg, NL: Netherlands, NO: Norway, RO: Romania, SI: Slovenia, ES: Spain, CH: Switzerland, IT: Italy.
Source: OECD Stat; OECD PaRIS 2024 Database.

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Better experiences of care are associated with better health outcomes and greater trust in the healthcare system

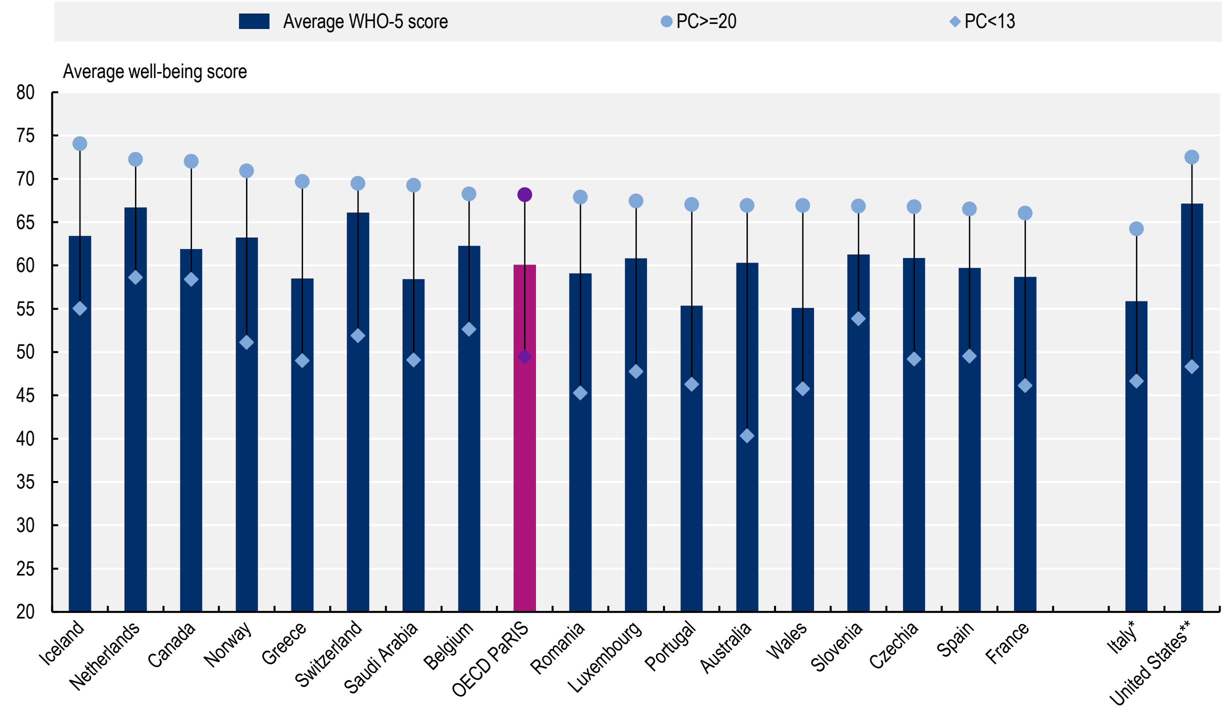
Patients with chronic conditions who report that their care is more person-centred are more likely to report higher levels of well-being

While people-centredness of healthcare systems is an important goal by itself, the PaRIS data show that people who rate their care as more person-centred also have better physical and mental health,

and better well-being (Figure 1.12). In all countries, people with chronic conditions who are in the top quartile of person-centredness of care (which corresponds to a person-centred care score of 20 or more) feel healthier and report better well-being that the people in the bottom quartile of person-centred care (score of 13 or less).

Figure 1.12. People who report that their care is person-centred also report higher levels of well-being

Well-being scores: average and separate for people who report person-centredness scores in the top quartile (PC score greater than or equal to 20) and in the bottom quartile (PC less than 13)



Note: The figure compares health outcomes of people with low-medium person-centred care (score below 13 points out of 24) and the group with high person-centred care (score above or equal to 20 points out of 24). P3CEQ Questionnaire. Response to eight questions measuring if care is person-centred. Scale ranges from 0 to 24, higher scores represent better person-centred care. WHO-5 well-being index. Response to five questions measuring well-being. raw scale 0-25 converted to 0-100 scale, higher scores represent higher well-being. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** United States sample only includes people of 65 years and older.
Differences between groups are statistically significant (p<0.05) for all countries.
Source: OECD PaRIS 2024 Database.

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Patients' trust goes hand-in-hand with high-quality healthcare and is closely linked to personal experience of healthcare

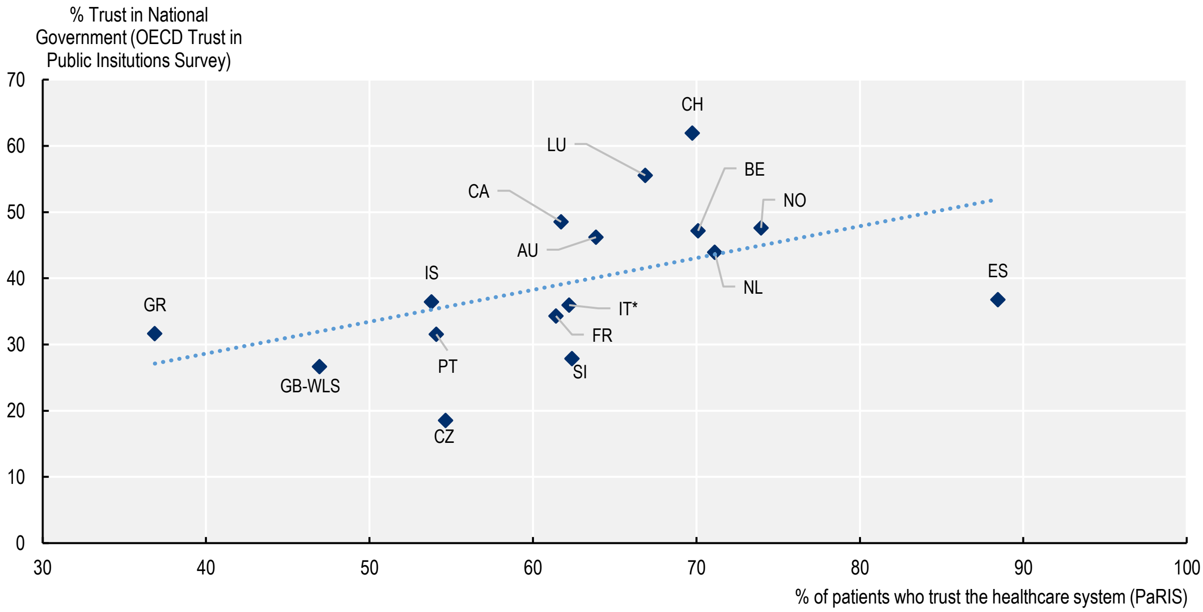
Trust in healthcare systems is a key indicator of their quality and performance. PaRIS data show that **trust in the healthcare system goes hand in hand with better health**; respondents who report high levels of general health are almost 20% more likely to trust the healthcare system than those who report poor health

(66 and 56% in each group trust the healthcare system, respectively). Likewise, the average mental health scores of those who trust the healthcare system are 6% higher than those who do not.

Trust in the healthcare system varies by a factor of two across countries and is – to some extent – linked to national perceptions on trust in institutions, such as national government, as shown in Figure 1.13. Within countries, trust in the healthcare system also varies across demographic groups, with men, people with higher incomes, older people, and those with higher education levels generally expressing greater trust.

Figure 1.13. In countries with higher trust in the national government, people have also more trust in the healthcare system

Percentage of people who says they trust the national government and percentage who trust the healthcare system



Note: Data from the OECD Trust in Public institutions relates within-country distributions of responses to the question “On a scale of 0 to 10, where 0 is not at all and 10 is completely, how much do you trust the national government?”. A 6-10 to “ high or moderately high trust“. “OECD” presents the unweighted average across countries. OECD Trust Survey Data is for the United Kingdom. Data from the OECD PaRIS: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions.
Source: OECD Trust Survey 2023 and OECD PaRIS 2024 Database.

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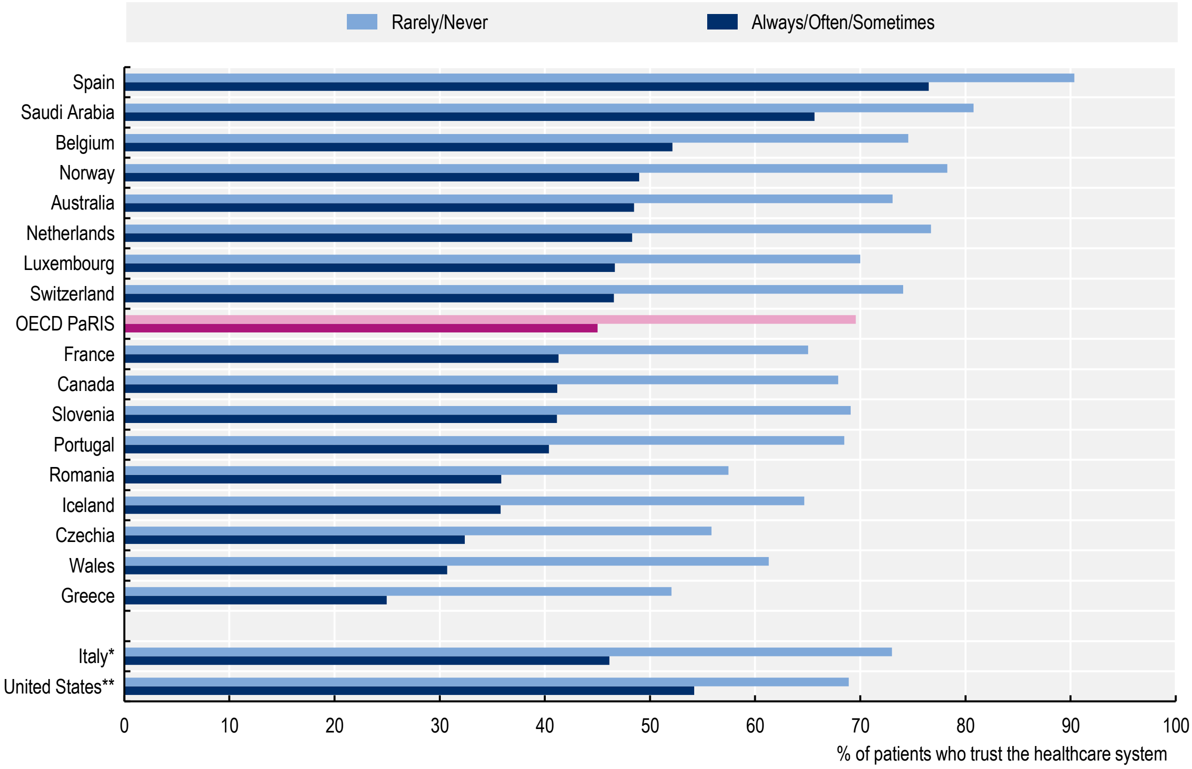
However, trust in healthcare is impacted by more than a general trust in government and related institutions; individual experiences with healthcare have a major impact on trust. As seen in Figure 1.14, **people who experience adverse events, don’t receive enough health information from their healthcare professional, have to repeat information that should be in their health record, or experience problematic waiting times are less likely to trust the healthcare system.** This is illustrated in Figure 1.14, which shows that people who have experienced an event or circumstance that could potentially cause them harm in primary care – such as, not getting an appointment when needed, receiving a wrong or delayed diagnosis or treatment, or experiencing problems with communications between healthcare professionals – are 1.6 times less likely to trust the healthcare system than those who have not experienced such an adverse event (45% compared to 70%).

Figure 1.14. People who have experienced an adverse event in primary care are much less likely to trust the healthcare system

Percentage of people that trust in the healthcare system according to having experienced an adverse event



Note: Examples of adverse events include not getting an appointment when needed, receiving a wrong or delayed diagnosis or treatment, or experiencing problems with communications between healthcare professionals. Trust in healthcare system: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** United States sample only includes people of 65 years and older. All differences for Trust in the healthcare system are statistically significant (p<0.05).
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/uc34f6

The connection between the individual experience of high-quality care and trust is evident. Across countries, patient perceptions of high-quality care and having a central point of contact for health problems positively impact trust. People who felt that their primary care professional spent enough time with them are almost 90% more likely to trust the healthcare system compared to those who did not feel this was the case (64% compared to 34%). Likewise, people who feel as though their healthcare professional encourages them to raise concerns are 1.3 times more likely to trust their healthcare professional, compared to those who did not (90% compared to 71%). Policies to promote patient safety, better care co-ordination and continuity, and higher-quality care interactions can result in outcomes that influence higher levels of trust for people living with chronic conditions.

PaRIS data highlights policies and approaches to more person-centred, co-ordinated, and safer care for people with chronic conditions

People feel more confident about managing their health when they receive support from their primary care professionals and are involved in decisions about their care

People are more confident in managing their health when doctors involve them in decision making and support them in taking a more active role in managing their health conditions. Although most people with chronic conditions regularly see healthcare professionals, they live with their conditions 24/7, requiring ongoing self-management within their own environments. Supporting these patients in managing their health and well-being is therefore essential. This support may include guidance on making healthy lifestyle choices and effective medication management. Such self-management support, understood as empowering patients with the knowledge and skills to manage their conditions effectively, is more effective when patients are actively involved in decisions about their own care. For example, people are on average 10 percentage points more confident in self-management when doctors involve them in decisions about their care, and 14 percentage points more confident when they receive strong self-management support from their primary care professionals.

Structured approaches to self-management support, such as referrals to self-management classes (used by primary care practices serving 39% of patients with chronic conditions) or explicit goal setting and action planning (used by practices serving 34% of patients), remain less common compared to simpler strategies like providing verbal information during consultations. Notably, 89% of patients are with primary care practices that report offering verbal guidance, highlighting a gap between the widespread use of basic informational support and the less frequent adoption of more comprehensive, structured interventions.

Patients who have long-standing relationships with their primary care practice more often experience a high quality of care

Time with primary care professionals is invaluable for people with multiple chronic conditions. People who live with multiple chronic conditions and spent more time with primary care professionals are more likely to report better quality of care. Results indicate that having a long-standing relationship with a primary care professional (longer than five years) increases the odds of experiencing quality care by 30%. Patients benefit from the trust, rapport, and deep understanding that develop over time. On average, 58% of people with multiple chronic conditions have been with the same primary care professional for five years or more, ensuring long-term continuity of care. About 40% have been with their primary care professional for over 10 years. The highest proportions of patients with such long-term continuity were observed in Romania, Czechia and the Netherlands, where over half of patients indicated being with their primary care professional over a decade.

People have better experiences of care when the scheduled time for consultations is longer. More time scheduled for regular or follow up consultations (more than 15 minutes) significantly improve the odds of experiencing quality-of-care by 21% among people with multiple chronic conditions, underlining the importance of giving patients adequate time to address their concerns and ensure thorough care.

Yet, on average, only 38% of primary care practices participating in PaRIS reported that the time scheduled for regular and follow up consultations was 15 minutes or more, ranging from 80% or more in Norway, Portugal and Iceland to less than 10% in the Netherlands, Spain and Wales.

People with multiple chronic conditions often have more complex needs, which might not be covered in healthcare systems designed for single diseases with limited time. The time spent on consultations, meeting the same primary care professionals, follow-up and relationship are perceived as more important among people with multiple chronic conditions than patients with no chronic conditions (Norman, Jelin and Bjertnaes, 2024[3]).

Medication reviews and care plans can contribute to better co-ordination of care

Over 70% of people who live with multiple chronic conditions take at least three medications, and more than a third take four or more medications. An example of an intervention that could contribute to better medication management is the use of systematic *medication reviews*, where a healthcare professional discusses with the patient all the medication that the patient is taking. This helps ensure that all the medications are necessary and safe when taken together, giving the patient an opportunity to signal any issues and enhance self-management. A medication review can prevent harmful interactions, reduce side effects, and improve overall treatment outcomes. It also helps identify any outdated or unnecessary prescriptions, reducing costs to both patients and healthcare systems, and ensures that patients understand their medication regimen. This good practice varies from more than 85% of people with multiple chronic conditions in Switzerland, the United States and Czechia to less than 45% in Iceland and Slovenia.

Care plans help improve co-ordination of care, but they are rarely used. A care plan is a written agreement between the patient and the healthcare professionals detailing the type of care the patient receives over an extended period and how this care will be given, including what the patient will do. While a care plan can be a useful tool to structure and co-ordinate care, only 25% of the people in the survey with chronic conditions reported having a care plan available to them and 26% of their primary care practices report that they use care plans for all their patients with chronic conditions at least once a year. However, there seems to be a breakdown in communication between what is reported by patients and their primary care practices. For example, in Australia, Saudi Arabia and Spain, physicians report around 50% usage of care plans for all patients with chronic conditions while only between 25% and 35% of their patients reports having such a plan.

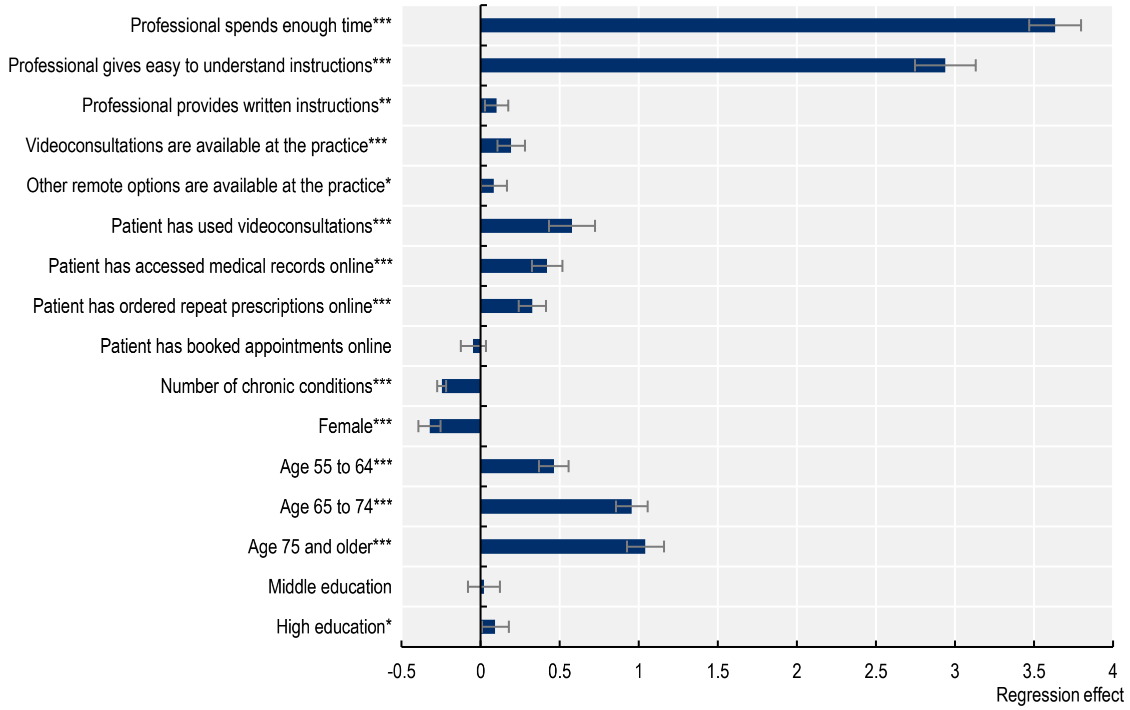
Sufficient consultation time, effective and accessible doctor-patient communication, and use of digital tools can contribute to more person-centred care

When healthcare is “person-centred”, it is tailored to the individual needs of the patient. In the often-complex care for people with (multiple) chronic conditions, there is usually no “one-size fits all” solution. PaRIS shows that care can be made more person-centred when professionals spend enough time with patients, explain things in a way that is easy to understand, provide written instructions about how to manage care at home, and when they offer patients remote options to contact and consult healthcare professionals, such as video consultations, e-mail, text message or messaging through remote platforms.

Figure 1.15 shows the size of the regression effects of several factors. Spending enough time and the provision of easy-to-understand instructions were particularly important for more person-centred care, but several aspects of health digitalisation matter too, including availability of digital consultations, patient’s access to their electronic medical records, and the possibility of ordering repeated prescriptions online. Women are significantly less likely to receive person-centred care, and having more chronic conditions is associated with a lower person-centred care score.

Figure 1.15. Sufficient consultation time, effective and accessible communication, and use of digital tools are all associated with more person-centred care

Estimated effects and 95% confidence intervals of practices' and patients' characteristics on person-centred care



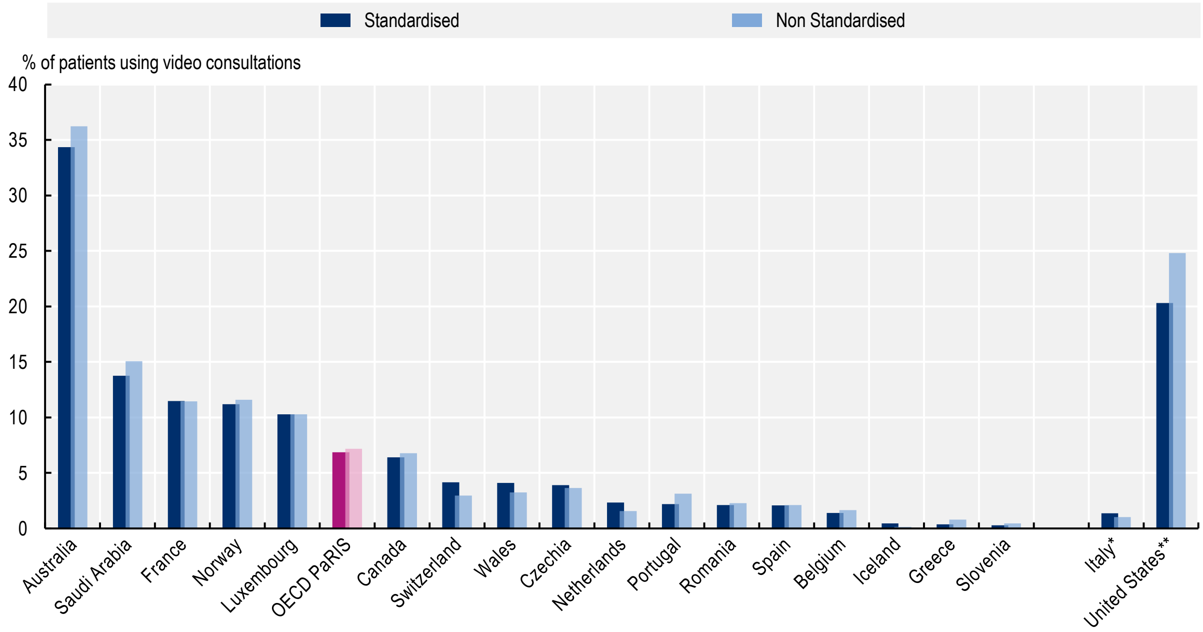
Note: Analysis includes 52 729 patients in 18 countries, only those with at least one chronic condition were included. The United States was excluded for not having information at the practice level. Statistical significance: *** p<0.001;** p<0.01;* p< 0.05. Video consultations and remote options compared to having telephone only. Female compared to Male; Age groups compared to people from 45 to 54 years old; Education high and middle compared to people with low education. Random intercept models with patient, practice and country level.
Source: Author's estimations with data form the OECD PaRIS 2024 Database. See https://stat.link/hk67ng.

Patients with chronic conditions face limited access to digital services in primary care

PaRIS data further show that there is need for improvement in the digitalisation of the primary care experience. For example, the availability of videoconference services in primary care practices is not only low, but there also seems to be a breakdown in communication between practices and their patients about availability of such services. Considering the information reported by practices, 28.3% of patients with chronic conditions are with practices that offer videoconference services, while only 10.8% of patients with chronic conditions report that their primary care practice offers videoconference services.

Given the low availability of video consultations in primary care, it is unsurprising that their usage reported by patients is even lower. Approximately 7% of patients with chronic conditions report having used video consultation in primary care, as shown in Figure 1.16.

Figure 1.16. Fewer than one in ten patients with chronic conditions reports having used video consultation services with their primary care practices



Note: * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** United States sample only includes people aged 65 years or older. Standardised results are adjusted for age and sex across countries.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/bg5f4v

Other findings confirm opportunities for improving digitalisation of primary care. On average across countries, only 54% of patients with chronic conditions have booked primary care appointments online and 43% have ordered repeated prescriptions with their primary care practice online. The number for accessed to primary care medical records online are even lower: only 17% of patients with chronic conditions report having done so.

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Annex 1.A. The PaRIS 10 key indicators

The ten key indicators in the PaRIS flagship report, the “PaRIS 10” include five PROMs and five PREMs. All indicators are based on validated and tested instruments and were selected after discussions with the Working Party of PaRIS, the Health Committee and other experts and stakeholders. The table below describes how these ten indicators were measured.

Patient-Reported Outcome Measures (PROMs)	
Physical health	Response to four questions measuring physical function, pain and fatigue, response options scale of 1-5. Average score of patients. Raw scale 4-20 converted to T-score metric in which 50 is the mean and 10 the standard deviation of the PROMIS reference population. T-score range of 16.2-67.7. Percentage of patients reporting positive outcome (T-score of 42 or more, equivalent to being in “good” physical health or better, as compared to “fair” or “poor” health, based on PROMIS reference population), shown in Table 1.1. Data instrument: PROMIS® Scale v1.2 – Global Health scale.
Mental health	Response to four questions on quality of life, emotional distress and social health, response options scale of 1-5. Average score of patients. Raw scale 4-20 converted to T-score metric in which 50 is the mean and 10 the standard deviation of the PROMIS reference population. T-score range of 21.2-67.6. Percentage of patients reporting positive outcome (T-score of 40 or more, equivalent to being in ”good” mental health or better, as compared to ”fair” or “poor” health, based on PROMIS reference population) , shown in Table 1.1. Data instrument: PROMIS® Scale v1.2 – Global Health scale.
Social functioning	Response to question: “In general, please rate how well you carry out your usual social activities and roles [further specified in questionnaire]”, response options range from poor (1) to excellent (5). Percentage of patients that responded good, very good or excellent (compared to fair or poor). Data instrument: PROMIS® Scale v1.2 – Global Health scale.
Well-being	Response to five questions measuring well-being (have felt cheerful and in good spirits, calm and relaxed, active and vigorous, fulfilled in daily life, fresh and rested), response options scale of 0-5. Average score of patients (raw scale 0-25 converted to 0-100 scale) Percentage of patients reporting positive outcome (score >=50, indicating not at risk of clinical depression), shown in Table 1.1. Data instrument: WHO-5 Well-being Index.
General health	Response to question: “In general, would you say your health is …” where response options range from poor (1) to excellent (5). Percentage of patients that responded good, very good or excellent (as compared to fair or poor) Data instrument: PROMIS® Scale v1.2 – Global Health scale.
Patient-Reported Experience Measures (PREMs)	
Confidence to self-manage	Response to question: “How confident are you that you can manage your own health and well-being?”, response options range from not confident at all (0) to very confident (3). Percentage of patients that are confident or very confident (compared to somewhat confident or not confident at all). Data instrument: P3CEQ Questionnaire.
Experienced co-ordination	Response to five questions measuring care co-ordination (care joined up, single named contact, overall care plan, support to self-manage, information to self-manage). Response options scale of 0-3. Average score of patients (on a scale of 0-15). Percentage of patients reporting positive experience (scored 50% or more across 5 questions, i.e. scale score >=7.5), shown in Table 1.1. Data instrument: P3CEQ Questionnaire, data available only for people with chronic condition/s.
Person-centred care	Response to eight questions measuring if care is person-centred (discussed what is important, involved in decisions, considered “whole person”, no need to repeat information, care joined up, support to self-manage, information to self-manage, confidence to self-manage). Response options scale of 0-3. Average score of patients (on a scale of 0-24). Percentage of patients reporting positive experience (scored 50% or more across 8 questions, i.e. scale score >=12), shown in Table 1.1. Data instrument: P3CEQ Questionnaire, data available only for people with chronic condition/s.
Experienced quality	Response to question: “When taking all things into consideration in relation to the care you have received, overall, how do you rate the medical care that you have received in the past 12 months from your primary care centre?”, response options range from poor (1) to excellent (5). Percentage of patients that responded good, very good or excellent (compared to fair, poor, and not sure). Data instrument: Adapted from Commonwealth Fund International Health Policy Survey.
Trust in healthcare system	Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, response options range from strongly disagree (1) to strongly agree (5). Percentage of patients that agree or strongly agree (compared to neither agree nor disagree, disagree, strongly disagree). Data instrument: Based on OECD Guidelines on Measuring Trust and similar to questions in selected national surveys.

2

PaRIS key indicators: How do countries compare?

This chapter analyses key results from the OECD Patient-Reported Indicator Survey (PaRIS) on health outcomes and healthcare experiences. It compares results for the 19 participating countries across ten key indicators, highlighting where each country is doing well, and where reform may be needed. Results are summarised in the PaRIS Dashboard, with further details provided in indicator-by-indicator analysis. The chapter also examines some of the essential factors that may explain why patients are more likely to have better (or worse) outcomes and experiences, including linkages across indicators. It finds a positive association between experiences of care and health outcomes. It also shows that countries that spend more on health often have better patient outcomes and experiences, but good results can still be achieved at lower levels of spending.

In Brief

What the PaRIS data tell us

- Health system performance has been typically measured by inputs, processes, and outputs. **PaRIS data highlight a crucial change in the way to assess health systems: it focuses on patients' own perspectives, their health outcomes and their healthcare experiences.** These outcomes and experiences vary according to how health systems operate, revealing substantial differences in performance and what drives it.
- **PaRIS results show a relationship between better experience of care by patients and better health outcomes.** This is clear in Australia, Switzerland and the United States, where people consistently report positive care experiences and better health results compared to the OECD PaRIS average. Similar patterns are seen in Czechia, France and Norway where people report mostly positive experiences with their care, along with relatively good health outcomes. However, this link is not always consistent.
- **About a tenth of the differences in how people experience healthcare can be attributed to country-level factors.** For some indicators, such as experienced quality of care and confidence to self-manage, more than a tenth can be attributed to country differences. This could for example reflect variations in national health policies, and the availability, accessibility and quality of healthcare services, as well as other country-level factors beyond the health system.
- **Countries that spend more on health are more likely to have better patient outcomes and experiences, but good results can still be achieved at lower levels of spending.** Health spending per capita is associated with better outcomes and experiences across the key indicators analysed in this chapter (the "PaRIS10"). At the same time, results show it is possible to have good scores at lower levels of health spending. For example, Belgium, Czechia and Switzerland achieve the highest scores for "Experienced Quality" but at very different levels of health spending per person. More broadly, Czechia and Slovenia are two examples of countries that score well across most of the PaRIS10 indicators, while having relatively low health spending per capita.
- **PaRIS results highlight an opportunity to improve healthcare performance by tailoring care to a person's gender, age, and socio-economic status.** For example, people with lower education levels tend to have worse health and report less positive experiences with their care. They are more likely to face poorer health outcomes and are less positive about their treatment compared to those with higher education. Eighty-seven percent of people with lower education reported having chronic conditions, compared to 78% in the higher education group. Women also are more likely to report worse outcomes and experiences, despite tending to live longer than men.

2.1. Introduction

This chapter analyses key results from the OECD Patient-Reported Indicator Survey (PaRIS) on health outcomes and healthcare experiences. It compares results for the 19 participating countries for ten key indicators (the “PaRIS10”). The chapter also examines some of the essential factors that may explain why patients are more likely to have better (or worse) outcomes and experiences, including linkages across indicators.

The **rationale** underpinning the PaRIS survey is a mandate from OECD Health Ministers to make health systems more people-centred (OECD, 2017[1]). Health system performance has been typically measured by inputs, processes, and outputs, such as health expenditure, number of hospital beds, number of doctor consultations, or morbidity and mortality rates. PaRIS data highlight a crucial change in the way to assess health system performance: it focuses on patients’ own perspectives, their health outcomes and their healthcare experiences. These outcomes and experiences vary according to how primary care operates, also including its interlinkages with other levels of care, revealing substantial differences in performance.

The fundamental question the PaRIS survey explores is this – *to what extent are healthcare systems successful in meeting people’s needs?* To answer this question, both patient-reported outcome measures (PROMs) and patient-reported experience measures (PREMs) are used. PROMs and PREMs are standardised validated measures which together show how patients perceive their health and functioning, and the healthcare they receive. PaRIS is a collaborative initiative in which the OECD has partnered with patients, healthcare professionals, policy makers, and academics worldwide.

In terms of **scope of analysis**, the PaRIS survey concentrates exclusively on primary care users. This allows a nuanced understanding of the experiences and outcomes of people who have firsthand experience with primary care services, an area that has often been poorly understood in many countries to date. A special focus is given to people living with chronic conditions, as these people often have worse health outcomes and make up a large proportion of primary care users. Further salient characteristics of the PaRIS survey are summarised in Box 2.1, with Chapter 7 providing an in-depth discussion of the data and methodology used.

Overall results for the PaRIS10 are then presented in Section 2.2. This is followed by analysis of factors that can explain why patients experience better care or health outcomes in Section 2.3. More specific findings for each of the ten indicators are presented in Section 2.4.

Note that this chapter is intended to provide a high-level overview of the survey results, rather than an in-depth discussion of the policy implications of these results. Such discussion is left to the subsequent chapters (Chapters 3 to 6) which, for specific areas of policy concern, combine more detailed analyses with findings from the literature to explore the policy implications of survey results.

Box 2.1. Core characteristics of the PaRIS survey

See Chapter 7 for an in-depth discussion of the data and methodology used.

Participating countries

- 19 countries, of which 17 were OECD members: Australia, Belgium, Canada, Czechia, France, Greece, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Slovenia, Spain, Switzerland, the United States and Wales (United Kingdom). Romania and Saudia Arabia also participated.

Sampling frame

- All primary care users aged 45 years and older, across primary care practices in each participating country. Patients are linked to primary care practices, using a nested sampling approach, so that patient outcomes and experiences can be linked to characteristics of primary care practices.
- This age range was chosen because of a particular interest on people living with chronic conditions. These people often have worse health outcomes and make up a large proportion of primary care users.
- All people aged 45 who have had at least one contact with their primary care practice in the six months prior to the time of sampling were included.

Common principles for data analysis

- Age-sex standardisation. All results in this report are, unless explicitly stated, age-sex standardised to adjust for countries different demographic profiles. This helps maximise cross-country comparability of results.
- Approach to case-mix adjustment. Results are stratified between patients with and without chronic conditions. Sensitivity analysis was conducted to compare basic age-sex adjusted country estimates to more detailed case-mix adjustment on PROMs and PREMs (see Annex Table 2.A.1). This analysis showed that there were no significant differences in most results, highlighting the robustness of basic age-sex case-mix adjustment in the report. This approach is chosen to strike a balance between recognising the importance of case-mix, whilst avoiding overadjustment that risks masking cross-country performance differences that are amenable to policy.
- Comparative intervals. Non-overlapping comparative intervals can be interpreted as statistically significant differences at the 5% significance level. For example, they allow statistical comparisons of a country's aggregate result with the OECD PaRIS average (which is an unweighted average of the 17 participating OECD members).
- Variance components. Reflecting the multi-level design of the PaRIS survey, the extent to which variation in results can be attributed to three levels: country, primary care practice and patient levels.

Some summary descriptive statistics

- Results span 107 011 primary care users (aged 45 years and older) and 1 816 primary care practices in 19 countries.
- 81% of respondents reported having at least one chronic condition, with 52% having multiple chronic conditions (two or more conditions).

- 18% of respondents were aged 75 or older. Just over half the sample (56%) were women.
- 33% of respondents had a low education level (lower secondary education or less), while 43% had a high education level (bachelor's university degree or higher).

Tailored implementation of survey to reflect national circumstances

- PaRIS implements standardised patient-reported measures across different healthcare systems, balancing strict uniformity with flexibility. Each country brings unique healthcare structures and contexts and different capacities to conduct a large-scale, complex patient survey. Therefore, the Secretariat and an international consortium of organisations supporting the methodological aspects of the survey development and implementation (the PaRIS-SUR consortium) worked collaboratively with national experts responsible for the implementation in their respective countries (i.e. National Project Managers) on a case-by-case basis to determine how best to implement the guidelines, ensuring optimal data collection tailored to the specific circumstances of each country (De Boer et al., 2022[2]).
- To enhance comparability, the analysis employs a standardisation mechanism to validate patient samples and ensure that the eligible patient population is adequately represented by age and sex. The robustness of the data was also thoroughly tested, such as through sensitivity analyses with additional case mix correctors. Some differences remain in the samples across countries due to variations in health systems, these are highlighted where relevant and further explained in Chapter 7 (Methods). Over time, the OECD remains committed to refining and harmonising methodologies to further strengthen comparability.

Comparability

- The PaRIS sample has been validated to be representative of the eligible patient population as far as possible. This is further detailed in Chapter 7.
- In Belgium, the relatively low response rate (<5%) could possibly affect the representativeness of the patient sample. Switzerland included patients in the sample through a "consecutive sampling" approach, enrolling them as they contacted the practice until the required sample size was reached. This method meant that patients who visited their primary care practice more frequently had a higher likelihood of being included in the sample. To assess whether this resulted in a much "sicker" population, a sensitivity analysis with chronic conditions as case-mix variables was conducted, which did not reveal significant differences.
- Canada does not have a national registry of practising primary care practices and therefore, a convenience sample of practices was drawn.
- In Italy and the United States, eligibility criteria for patient participation differed from the guidelines. In Italy, the sample only covered three regions. Sampling was limited to patients referred to medical specialists in an ambulatory care setting in Veneto, Tuscany in three regions. In the United States, the sample is nationally representative for people of 65 years and older but data on people between 45 and 65 years are missing. Due to these deviations in eligibility criteria, results for Italy and the United States have been separated from the rest of the sample and should be interpreted with caution.
- See Annex 2.A for supplementary dashboards on full sample, people without chronic conditions, and people aged 65 an older with chronic conditions.

2.2. The PaRIS10 Dashboard – how do countries compare across key indicators?

The PaRIS10 dashboard presented in this section summarises how countries compare across the PaRIS10, for patients with chronic conditions. Selection of the PaRIS10 indicators involved close consultation with patient representatives, primary care professionals and academics.

Five outcome indicators focus on essential health metrics. The first three cover the physical, mental, and social domains of health; the next two are more cross-cutting measures of overall well-being and health:

- **Physical health** – ability to carry out everyday physical activities, degree of pain and fatigue.
- **Mental health** – perception of quality of life, mood and ability to think, satisfaction with social activities and relationships, emotional distress.
- **Social functioning** – extent to which a person can carry out their usual social activities and roles.
- **Well-being** – degree to which a person feels positive in terms of their mood, vitality and fulfilment.
- **General health** – overall measure of general health.

Five experience indicators capture core aspects of patients' interactions with healthcare services. The first three cover different aspects of how people-centred healthcare is; the next two are broader perceptions on medical care quality and degree of trust in the health system.

- **Confidence to self-manage** – degree of confidence to manage one's own health and well-being.
- **Experienced care co-ordination** – extent to which a person experiences a seamless and continuous journey through different healthcare practices and settings.
- **Person-centred care** – extent to which a person's health needs are managed holistically, ensuring their preferences and needs are central to the care received.
- **Experienced quality** – overall measure of how a person rates the care they have received over the past 12 months.
- **Trust in healthcare systems** – degree to which a person trusts the healthcare system overall.

All ten indicators are based on internationally recognised instruments or guidelines, notably PROMIS, the Patient-Reported Outcomes Measurement Information System (PROMIS, 2017[3]), the WHO-5 Well-being Index (Heun et al., 2001[4]), the Commonwealth Fund International Health Policy Survey (The Commonwealth Fund, 2017[5]), OECD guidelines on measuring trust (OECD, 2017[6]), and P3CEQ, the Person-Centred Co-ordinated Care Experience questionnaire (Lloyd et al., 2019[7]). All indicators are designed to be applicable for the general population and for those with specific health conditions.

Table 2.1 provides specifications for each of the ten indicators, including interpretation of values and how they are used in this flagship report. Table 2.2 then presents country-level results of these indicators across the 19 participating countries. Later chapters explore specific indicators in more detail, including sub-components for some of these indicators. In Italy, eligibility criteria for patient participation differed from the guidelines, and the sample only covered three regions. Also, in the United States the implemented eligibility criteria for patients (patients aged 65 and over) differed significantly from the guidelines. Because of these deviations in eligibility criteria, results for these countries are shown separately.

Table 2.1. The PaRIS10 indicators

Patient-Reported Outcome Measures (PROMs)	
Physical health	Response to four questions measuring physical function, pain and fatigue, response options scale of 1-5. Average score of patients. Raw scale 4-20 converted to T-score metric. T-score range of 16.2-67.7. Percentage of patients reporting positive outcome (T-score of 42 or more, equivalent to being in “good” physical health or better, as compared to “fair” or “poor” health, based on PROMIS reference population), shown in Table 2.2. Data instrument: PROMIS® Scale v1.2 – Global Health component for physical health.
Mental health	Response to four questions on quality of life, emotional distress and social health, response options scale of 1-5. Average score of patients. Raw scale 4-20 converted to T-score metric. T-score range of 21.2-67.6. Percentage of patients reporting positive outcome (T-score of 40 or more, equivalent to being in “good” mental health or better, as compared to “fair” or “poor” health, based on PROMIS reference population), shown in Table 2.2. Data instrument: PROMIS® Scale v1.2 – Global Health component for mental health.
Social functioning	Response to question: “In general, please rate how well you carry out your usual social activities and roles [further specified in questionnaire]”, response options range from poor (1) to excellent (5). Percentage of patients that responded good, very good or excellent (compared to fair or poor). Data instrument: PROMIS® Scale v1.2 – Global Health item on social functioning.
Well-being	Response to five questions measuring well-being (have felt cheerful and in good spirits, calm and relaxed, active and vigorous, fulfilled in daily life, fresh and rested), response options scale of 0-5. Average score of patients (raw scale 0-25 converted to 0-100 scale). Percentage of patients reporting positive outcome (score >=50, indicating above threshold of poor mental well-being), shown in Table 2.2. Data instrument: WHO-5 Well-being Index.
General health	Response to question: “In general, would you say your health is …” where response options range from poor (1) to excellent (5). Percentage of patients that responded good, very good or excellent (as compared to fair or poor). Data instrument: PROMIS® Scale v1.2 – Global Health item on general health.
Patient-Reported Experience Measures (PREMs)	
Confidence to self-manage	Response to question: “How confident are you that you can manage your own health and well-being?”, response options range from not confident at all (0) to very confident (3). Percentage of patients that are confident or very confident (compared to somewhat confident or not confident at all). Data instrument: P3CEQ item.
Experienced co-ordination	Response to five questions measuring care co-ordination (care joined up, single named contact, overall care plan, support to self-manage, information to self-manage). Response options scale of 0-3. Average score of patients (on a scale of 0-15). Percentage of patients reporting positive experience (scored 50% or more across 5 questions, i.e. scale score >=7.5), shown in Table 2.2. Data instrument: P3CEQ care co-ordination component, data available only for people with chronic condition/s.
Person-centred care	Response to eight questions measuring if care is person-centred (discussed what is important, involved in decisions, considered “whole person”, no need to repeat information, care joined up, support to self-manage, information to self-manage, confidence to self-manage). Response options scale of 0-3. Average score of patients (on a scale of 0-24). Percentage of patients reporting positive experience (scored 50% or more across 8 questions, i.e. scale score >=12), shown in Table 2.2. Data instrument: P3CEQ person-centredness component, data available only for people with chronic condition/s.
Experienced quality	Response to question: “When taking all things into consideration in relation to the care you have received, overall, how do you rate the medical care that you have received in the past 12 months from your primary care centre?”, response options range from poor (1) to excellent (5). Percentage of patients that responded good, very good or excellent (compared to fair, poor, and not sure). Data instrument: Adapted from Commonwealth Fund International Health Policy Survey.
Trust in healthcare system	Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, response options range from strongly disagree (1) to strongly agree (5). Percentage of patients that agree or strongly agree (compared to neither agree nor disagree, disagree, strongly disagree). Data instrument: Based on OECD Guidelines on Measuring Trust and similar to questions in selected national surveys.

Note: For all ten indicators, the proportion (%) of patients who gave a positive response (outcome or experience) is analysed in this chapter. The thresholds for what constitute a positive response were chosen based on ease of interpretation or other evidence from the literature (e.g. the poor mental well-being cutoff used with the WHO-5 Well-being Index). For the five indicators based on a composite measure, the average patient score is also analysed. In all cases, a higher score is indicative of better results.
Source: OECD PaRIS patient questionnaire.

Table 2.2. The PaRIS10 Dashboard, 2024

Percentage of people reporting positive outcomes or experiences and average scores, for primary care users aged 45+ living with one or more chronic conditions (age-sex standardised results)

	Patient-Reported Outcome Measures (PROMs)					Patient-Reported Experience Measures (PREMs)				
	Physical health	Mental health	Social functioning	Well-being	General health	Confidence to self-manage	Experienced co-ordination	Person-centred care	Experienced quality	Trust in healthcare system
Positive outcomes	≥ 42	≥ 40	Good, very good, excellent	≥ 50	Good, very good, excellent	Confident, very confident	≥ 7.5	≥ 12.0	Good, very good, excellent	Agree, strongly agree
OECD PaRIS	45 (70%)	47 (83%)	83%	60 (71%)	66%	59%	8.2 (59%)	16.3 (85%)	87%	62%
Australia	47 (74%)	48 (81%)	80%	59 (70%)	74%	61%	9.6 (74%)	18.1 (94%)	94%	64%
Belgium	45 (68%)	46 (83%)	85%	60 (71%)	72%	63%	8.8 (67%)	17.9 (93%)	95%	70%
Canada	47 (77%)	49 (87%)	87%	62 (74%)	83%	59%	9.3 (71%)	12.1 (63%)	94%	61%
Czechia	46 (72%)	48 (87%)	88%	60 (72%)	63%	68%	9.2 (70%)	17.1 (90%)	96%	54%
France	45 (68%)	46 (87%)	91%	58 (67%)	76%	92%	8.4 (61%)	17.1 (92%)	91%	61%
Greece	45 (69%)	45 (78%)	87%	58 (66%)	69%	37%	7.1 (47%)	14.6 (79%)	74%	36%
Iceland	44 (65%)	47 (82%)	78%	63 (74%)	62%	35%	6.2 (34%)	14.9 (77%)	74%	54%
Luxembourg	45 (72%)	47 (86%)	86%	60 (71%)	71%	56%	8.5 (63%)	17.0 (91%)	93%	66%
Netherlands	47 (74%)	47 (85%)	82%	65 (79%)	64%	78%	7.3 (49%)	16.8 (90%)	92%	71%
Norway	47 (75%)	47 (83%)	80%	63 (76%)	63%	47%	7.6 (51%)	16.3 (87%)	92%	73%
Portugal	43 (57%)	43 (67%)	73%	56 (61%)	42%	61%	7.3 (49%)	14.9 (77%)	69%	54%
Romania	41 (52%)	44 (75%)	75%	59 (65%)	43%	42%	10.3 (78%)	17.4 (93%)	80%	52%
Saudi Arabia	46 (68%)	52 (93%)	93%	59 (65%)	93%	73%	6.5 (37%)	15.9 (87%)	89%	74%
Slovenia	46 (74%)	47 (85%)	88%	61 (72%)	62%	61%	8.2 (57%)	16.4 (85%)	89%	63%
Spain	43 (60%)	46 (81%)	79%	60 (69%)	55%	67%	8.5 (65%)	16.4 (85%)	85%	89%
Switzerland	47 (82%)	49 (91%)	90%	65 (80%)	79%	67%	10.3 (81%)	19.1 (97%)	97%	71%
Wales	44 (60%)	46 (75%)	73%	53 (59%)	62%	51%	5.0 (22%)	13.7 (66%)	72%	46%
Italy*	44 (66%)	45 (76%)	78%	56 (62%)	39%	24%	9.5 (72%)	16.3 (88%)	78%	62%
United States**	48 (75%)	51 (89%)	90%	64 (76%)	81%	74%	9.3 (72%)	18.4 (95%)	94%	65%

■ Better than the OECD PaRIS average (statistically higher, at 1+ comparative interval above).
▨ Close to the OECD PaRIS average (not statistically different, within one comparative interval).
□ Worse than the OECD PaRIS average (statistically lower, 1+ comparative interval below).

Note: For all indicators, percentage values are shown, measuring the percentage of people reporting a positive outcome or experience (for example, patients reporting being in good, very good or excellent general health). For five indicators, the average respondent scale score is also shown. See Chapter 2, Table 2.1 for more information on the cutoffs for positive responses and the scales used. Cells are colour-coded to show if values are statistically different to the OECD PaRIS average. In all cases, higher numbers indicate better performance. In Spain, the trust measure was asked specifically about trust in the primary care professionals within people's primary care practice. This variation might influence trust levels in Spain and limit comparability with other countries that refer to trust in the healthcare system more broadly. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** the United States sample only includes people aged 65 years or older.
Source: OECD PaRIS 2024 Database.

The following key insights can be drawn from the PaRIS10 dashboard:

- In terms of **patient outcomes**, Switzerland, the United States and Canada scored above the OECD PaRIS average for all five PROMs, while Italy, Portugal Romania, Spain and Wales scored close to or below the OECD PaRIS average for each of these outcome measures.
- While most primary care users aged 45 and older are positive about their health, sizable numbers of users are less optimistic. On average, around 3 in 10 people see their physical health and general health as only being fair or poor, and a similar share have poor mental well-being (based on the Well-being indicator). People are more likely to be positive about their mental health and social functioning (respectively 83% and 84% were positive, on average).
- For **patient experiences**, Australia, Belgium, Switzerland and the United States scored consistently above the OECD PaRIS average, while Greece, Iceland and Wales scored close to or below this average for the five PREMs.
- Most primary care users – around 9 in 10 people on average – have a positive overall experience of care (experienced quality indicator) and see their healthcare as being person-centred. However, around 4 in 10 people do not feel confident in managing their own health and well-being, did not experience good care co-ordination, and did not trust the healthcare system overall.
- Improving patient experiences is a critical goal in itself. But PaRIS results also show that **positive patient experiences are significantly associated at the patient-level with better patient-reported health outcomes**, although correlations are not always very high. In general, countries with better patient experiences appear more likely to have higher scores for patient outcomes. In other words, people's assessment of care quality and trust in the healthcare system is closely linked to how healthy they feel. This association is clear in Switzerland and the United States, where people more often report positive care experiences and better health results compared to the OECD PaRIS average. Similar patterns are seen in Australia, Czechia, France and Norway where people report mostly positive experiences with their care, along with relatively good health outcomes.
- However, the link across indicators is not always consistent. In Spain, for example, while people report mostly positive care experiences, there is still room for improvement in patient-reported health outcomes as compared to the OECD PaRIS average. In Romania, average scores for person-centred care and experienced care co-ordination were high, but patient-reported outcome measures were comparatively low. Such findings can point policy makers to the area of performance most needing improvement in their country.

Sensitivity analysis using case-mix adjustment of the PaRIS10 produced consistent and similar findings (see Annex 2.A for further details).

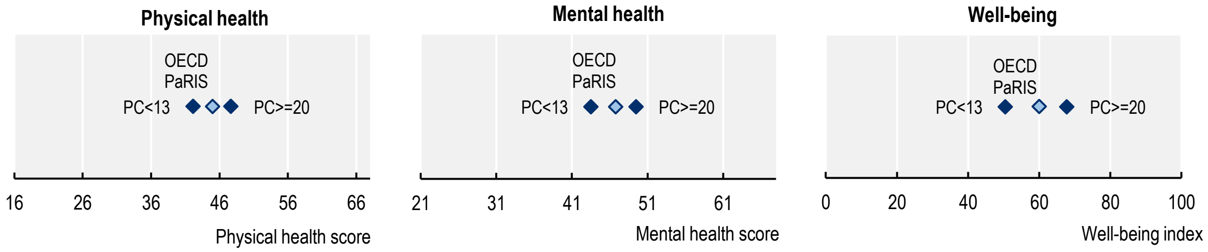
Building on these overall insights, the next section further describes survey results to explore factors that may explain why some countries have better patient-reported outcomes and experiences, while also examining the importance of practice and patient level factors.

2.3. Factors associated with better patient-reported health outcomes and care experiences

2.3.1. Patients who experience better care are also more likely to report better health outcomes

The PaRIS10 dashboard showed a general positive association across patient experiences and outcomes at the country level. Closer inspection of the data confirms that patients experiencing better healthcare are more likely to report better health outcomes, notably in terms of physical health, mental health, and well-being. For example, Figure 2.1 shows that people who found care to be highly person-centred (top quartile, with a score above or equal to 20 out of 24) had better health outcomes than people who found care to be less person-centred (bottom quartile, with a score below 13 out of 24). A closer investigation of these indicators finds that involving patients in care decisions is crucial to enhance confidence in their ability to manage their own health (see Chapter 4). When this happens, patients also report better health outcomes.

Figure 2.1. People receiving more person-centred care have better physical health, mental health and overall well-being



Note: Scale score values shown for people receiving highly patient-centred care (PC>=20), low patient-centred care (PC<13) and the OECD PaRIS average – for physical health, mental health and well-being. See Table 2.1 for definitions of scales used for each indicator.
Source: OECD PaRIS 2024 Database.

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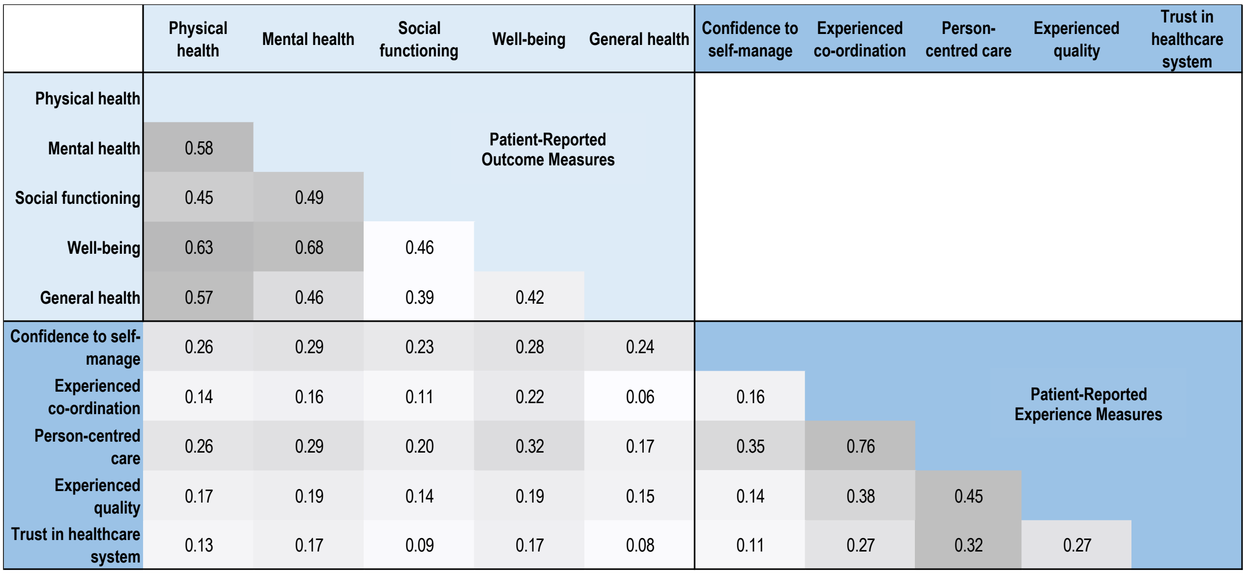
More broadly, patients who report favourably on one indicator are more likely to report favourably across other PROMs and PREMs (Figure 2.2). This indicates a positive, statistically significant pairwise correlation between all 10 indicators, although the correlations between outcomes and care experiences were rarely high.

The association between experienced co-ordination and person-centredness is the highest, reflecting the natural overlap between these indicators. Associations between well-being and both mental and physical health are also high. Whilst all correlations are statistically significant, not all associations are strong. Such results suggest that while the PaRIS10 indicators are related to one another, they each measure distinct aspects of health outcomes and care experiences.

Figure 2.2. Statistical associations among the PaRIS10 indicators



	Physical health	Mental health	Social functioning	Well-being	General health	Confidence to self-manage	Experienced co-ordination	Person-centred care	Experienced quality	Trust in healthcare system
Physical health										
Mental health	0.58			Patient-Reported Outcome Measures						
Social functioning	0.45	0.49								
Well-being	0.63	0.68	0.46							
General health	0.57	0.46	0.39	0.42						
Confidence to self-manage	0.26	0.29	0.23	0.28	0.24					
Experienced co-ordination	0.14	0.16	0.11	0.22	0.06	0.16			Patient-Reported Experience Measures	
Person-centred care	0.26	0.29	0.20	0.32	0.17	0.35	0.76			
Experienced quality	0.17	0.19	0.14	0.19	0.15	0.14	0.38	0.45		
Trust in healthcare system	0.13	0.17	0.09	0.17	0.08	0.11	0.27	0.32	0.27	

Note: Pairwise correlations generated using Spearman method, all are statistically significant ($p<0.05$).
Source: OECD PaRIS 2024 Database.

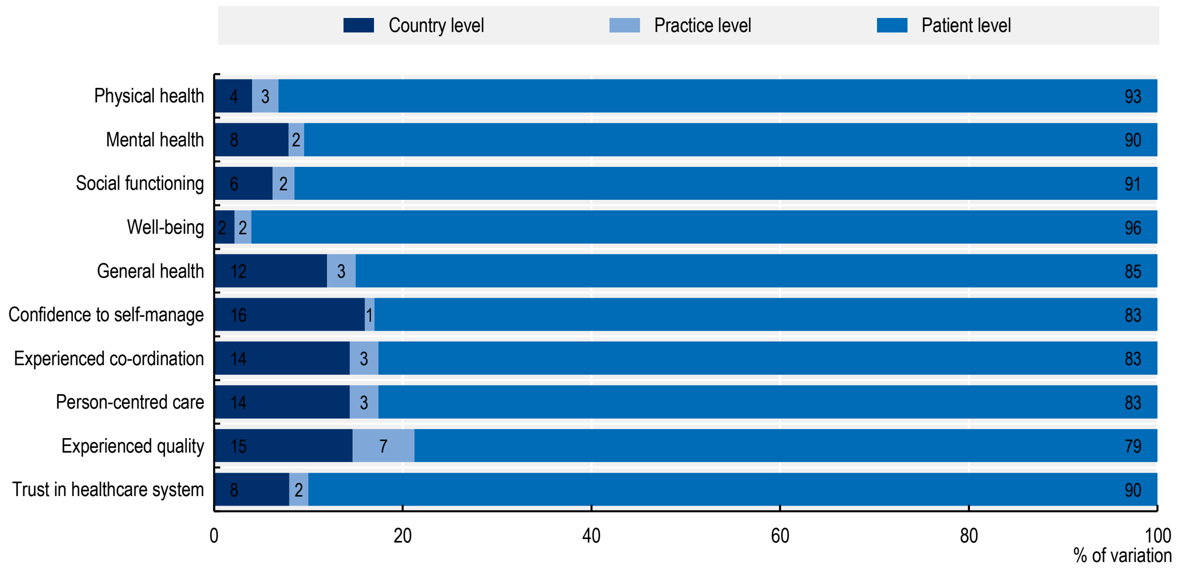
2.3.2. More than a tenth of the differences in how people experience healthcare can be attributed to country-level factors

The PaRIS10 dashboard showed that both PROMs and PREMs differ largely between countries. Figure 2.3 shows how much of the variation in the results of the 10 indicators can be attributed to differences between countries, between primary care practices and between patients (based on the intraclass correlation: see Chapter 7 for an explanation of this measure in the context of PaRIS).

While patient-level characteristics (such as age, sex and socio-economic status) account for most of the variation in results, country-level characteristics still account for a large share of result variation for all five PREMs and some of the PROMs. These results reflect the importance of cross-country differences in the availability, accessibility and quality of healthcare services, but also factors beyond the health system. For example, the impact of the country on how people rate the overall quality of care is over twice as large as the impact of primary care practices (15% compared to 7% of the variation in the experienced quality indicator). Country-level factors also account for a large share (16%) of the variation in results for the indicator confidence to self-manage, and on average more than a tenth of the differences across the five PREMs. Country-level factors were also marked for the PROMs on general health (12%), mental health (8%), and social functioning (6%).

For all ten indicators, country-level factors were more important than practice-level factors. This implies that the country a patient lives in has a greater impact on how they rate care quality than which healthcare practice they see within that country. Still, results do show relatively large practice-level differences for the indicator experienced quality (7%). Nevertheless, results suggest that policy change at the national level is more likely to lead to meaningful improvements in patient experiences and outcomes than efforts targeted at individual primary care practices. The following pages explore the impact of some specific country-level, practice-level and patient-level factors in more detail.

Figure 2.3. Variation in patient outcomes and experiences attributed to country, healthcare practice and patient levels (intraclass correlations)



Source: OECD PaRIS 2024 Database.

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2.3.3. Countries that spend more on health are more likely to have better patient outcomes and experiences, but good results can still be achieved at lower levels of spending

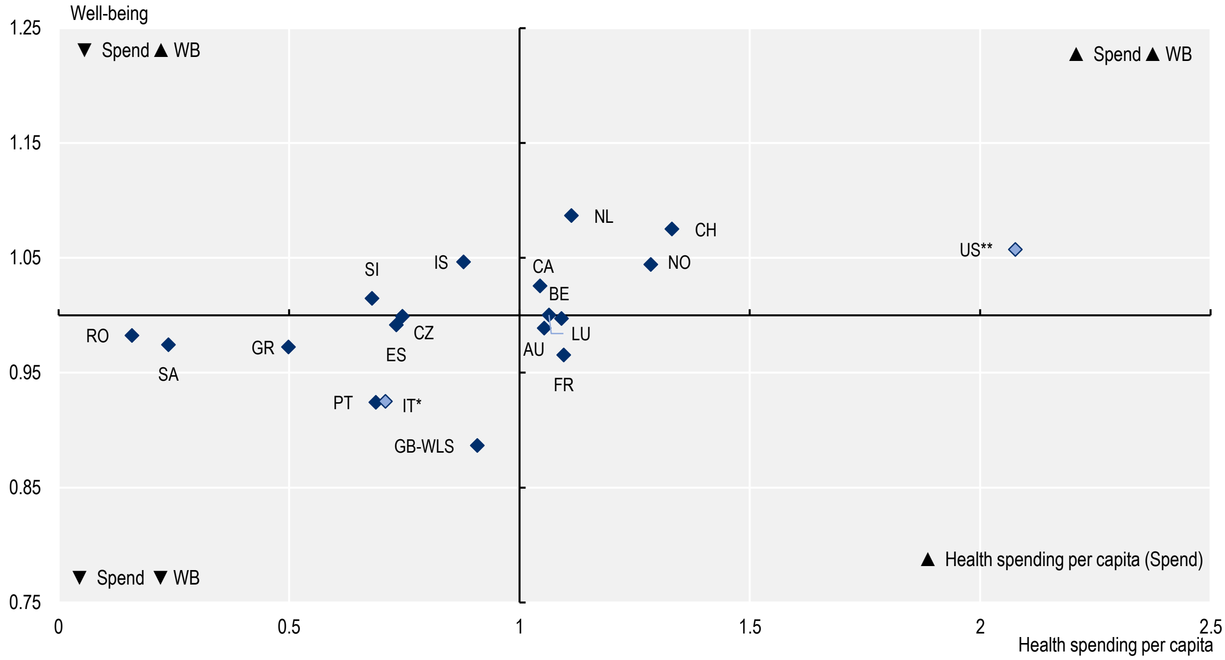
Comparing data for the PaRIS10 indicators with health spending yields additional insights. These results show that countries spending more on health per capita are likely to have better patient-reported outcomes and experiences on average. For example, Figure 2.4, Panel A shows a positive correlation between health spending per capita (adjusted for purchasing powers) and higher scores on the Well-being indicator. Figure 2.4, Panel B shows a similar pattern for the Experienced Quality indicator, with most countries that spent more (less) than the OECD PaRIS average having higher (lower) scores for this PREM. Correlations between the PaRIS10 indicators and healthcare system resources, such as the number of nurses or doctors, show broadly consistent results.

At the same time, the results show that good outcomes are achievable even with lower levels of health spending. For instance, Czechia, Belgium and Switzerland achieve the highest scores for Experienced Quality of care, despite significantly differing levels of health spending per person. Similarly, Iceland and Slovenia report Well-being scores above the OECD PaRIS average while spending relatively little per capita.

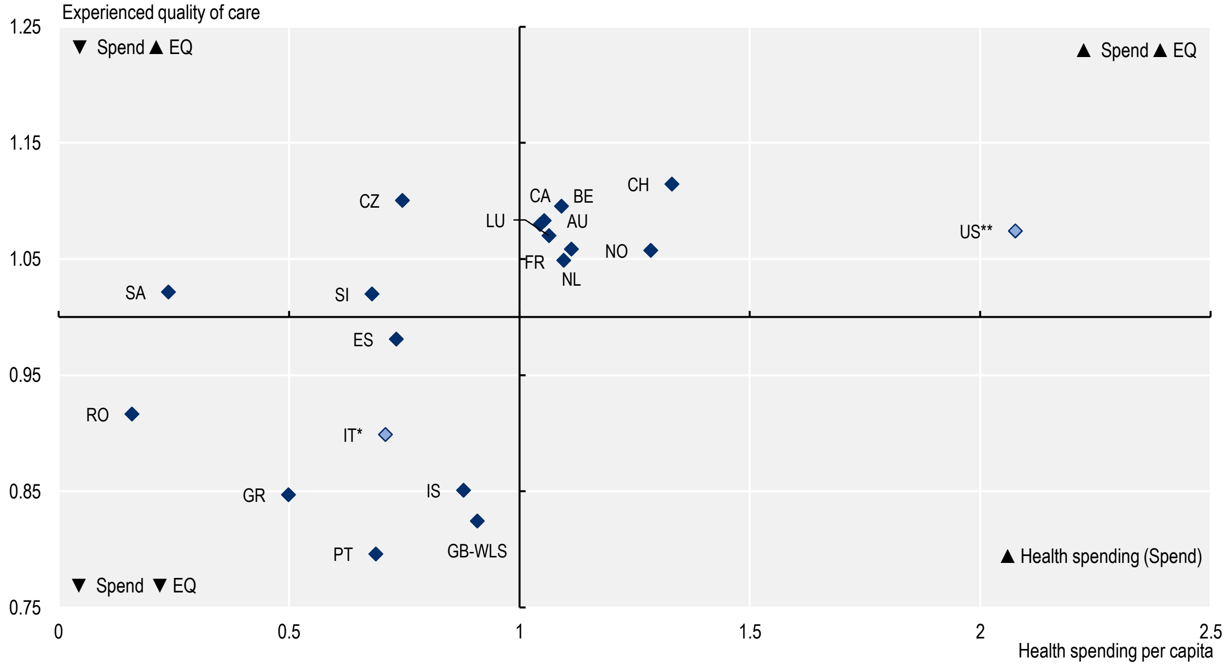
Notably, Czechia and Slovenia perform well across most PaRIS10 indicators despite their relatively low health spending. Later chapters delve into the policies and strategies that contribute to these strong results, demonstrating that substantial increases in health spending are not always necessary to achieve high performance.

Figure 2.4. Health expenditure per capita, 2024 (or latest data) and well-being and experienced quality

A. Health spending per capita and well-being



B. Health spending per capita and experienced quality of care



Note: Values on both axes were divided by the OECD PaRIS average, meaning that 1 equals the OECD PaRIS average and values above and under 1 respectively for above and under the OECD PaRIS average. For GB-WLS, aggregate UK health spending values are used. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. AU: Australia, BE: Belgium, CA: Canada, CZ: Czechia, FR: France, GR: Greece, IS: Iceland, LU: Luxembourg, NL: Netherlands, NO: Norway, PT: Portugal, RO: Romania, SA: Saudi Arabia, SI: Slovenia, ES: Spain, CH: Switzerland, GB-WLS: Wales, IT: Italy, US: United States.
Source: OECD Data Explorer, WHO Global Health Observatory, OECD PaRIS 2024 Database.

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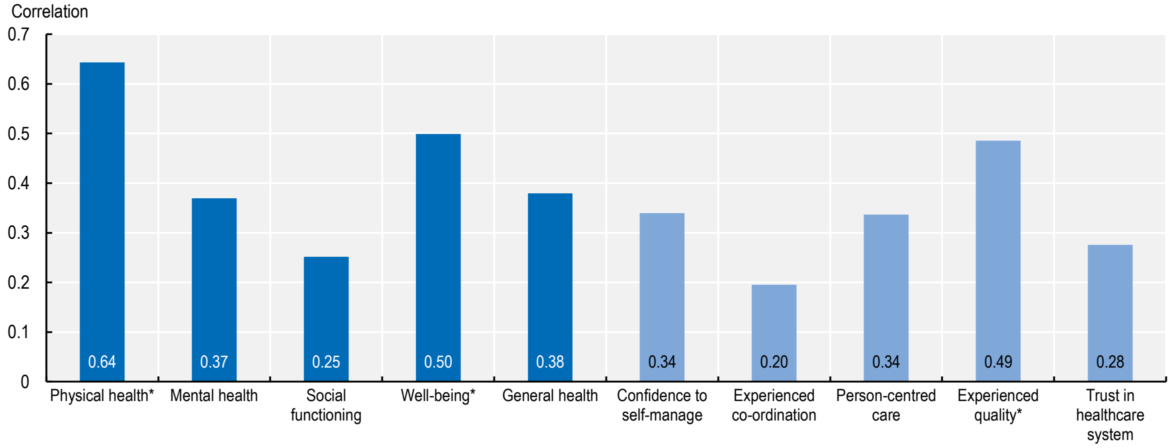
Multivariate regression analyses that include GDP per capita and control for core patient characteristics confirm the positive correlation with health spending. However, the correlation between countries' health spending per capita and the PaRIS10 indicators is often moderate (less than 0.5 except for Physical health), particularly for the PREMs (Figure 2.5). That is, whilst health spending is associated with better PaRIS10 indicator scores, it is not a guarantee of better patient outcomes or experiences and, it is possible to perform comparatively well at lower levels of health spending.

Figure 2.5. Health spending per capita and the PaRIS10 indicators, 2024 (or latest data)



Note: An asterisk indicates a statistically significant correlation ($p<0.05$). In multivariate regressions which controlled for GDP per capita and patient characteristics (age, sex, education, chronic conditions), health spending per capita had a statistically significant coefficient for all the PaRIS10 indicators except "experienced quality".
Source: OECD Data Explorer, WHO Global Health Observatory, OECD PaRIS 2024 Database.

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2.3.4. Countries with higher life expectancy do not have consistently better patient-reported outcomes

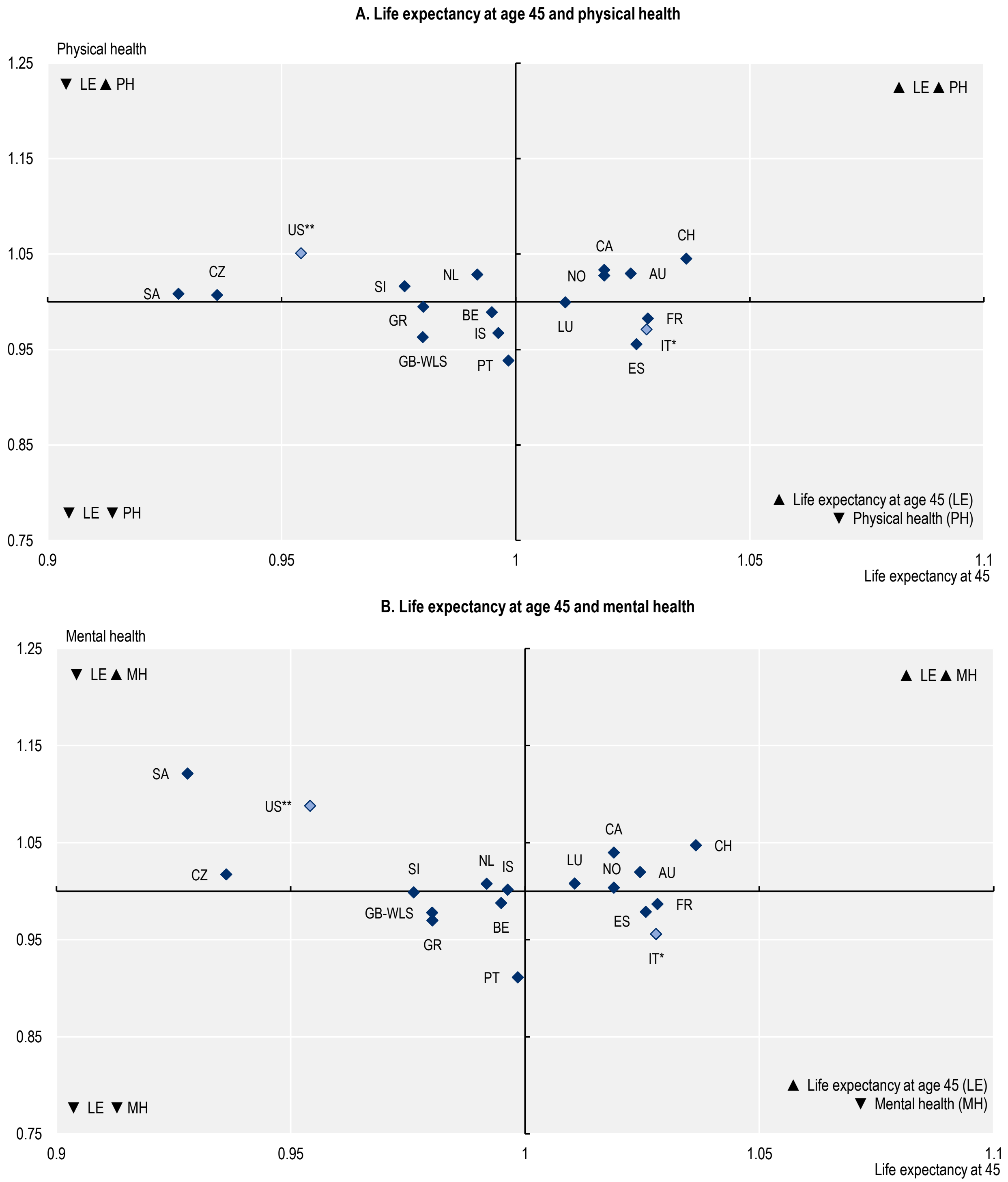
In contrast to health spending, there is not a clear relationship between life expectancy and the PaRIS10 indicators. This reflects that while people are living longer, this is not always in good health. Figure 2.6 shows, for example, that several countries known for their high life expectancies, also report relatively low levels of physical and mental health, as reported by patients. More generally, these figures do not show a clear correlation between life expectancy at age 45 and physical health or mental health. Indeed, further analysis found that all correlations between life expectancy (at different ages) and patient-reported outcomes were weak, and none of these correlations were statistically significant.

These results show that mere survival is a blunt metric to evaluate health outcomes. This aligns with research that has found survival or mortality rates lack the granularity to inform policy makers of how well healthcare is working for individuals (Slawomirski, van den Berg and Karmakar-Hore, 2018[8]; Abahussin et al., 2019[9]), and indeed why official statistics also make use of morbidity as well as mortality data.

Figure 2.6. Life expectancy at age 45, and physical and mental health, 2024

A. Life expectancy at age 45 and physical health

B. Life expectancy at age 45 and mental health



Note: Values on both axes were divided by the OECD PaRIS average, meaning that 1 equals the OECD PaRIS average and values above and under 1 respectively for above and under the OECD PaRIS average. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. AU: Australia, BE: Belgium, CA: Canada, CZ: Czechia, FR: France, GR: Greece, IS: Iceland, LU: Luxembourg, NL: Netherlands, NO: Norway, PT: Portugal, RO: Romania, SA: Saudi Arabia, SI: Slovenia, ES: Spain, CH: Switzerland, GB-WLS: Wales, IT: Italy, US: United States.
Source: UN World Population Prospects, OECD PaRIS 2024 Database.

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2.3.5. Practice-level characteristics can have an impact on patient experiences

One of the key features of the design of PaRIS is the potential to link patient experiences with primary care practice-level characteristics. Exploratory regression analyses showed how some practice characteristics are associated with one or more of the five patient-reported experience measures in this chapter (Table 2.3). Among these practice characteristics, the following were statistically significant:

- Patients whose primary care practices scheduled consultations of more than 15 minutes. This is particularly important for patients with two or more chronic conditions, for whom having enough scheduled time with the healthcare professional is essential to address multiple health and care issues (see Chapter 3, for further analysis).
- Availability of remote consultation (includes phone, video, and other options). This is further analysed in Chapter 4, showing that video consultations or other remote options are significantly associated with higher person-centred care more than having only telephone consultations.
- Perception of how well-prepared the practice is to co-ordinate care with other health and social care practices for patients with one or multiple chronic conditions, as reported by primary care practices.

These significant characteristics are based on analysis of the full sample. Such results are not always seen in within country-level analysis because of limited variation of certain practice characteristics within some countries.

Table 2.3. Practice-level characteristics with a significant impact in regression analysis

	Time scheduled for consultation (more than 15 minutes)	Availability of remote consultation	Practice well-prepared to co-ordinate care
Patient-Reported Experience Measures (PREMs)			
Confidence to self-manage (% with favourable experience)			
Experienced co-ordination (scale score 0-15)	+	+	+
Person-centred care (scale score 0-24)	+		
Experienced quality (% people with favourable experience)		+	
Trust in healthcare systems (% people with favourable experience)			+

Note: + denotes positive and significant coefficients in multi-level regression analysis, controlled for age, gender, education, number of chronic conditions, health expenditure per capita, and GDP per capita.
Source: OECD Data Explorer and OECD PaRIS 2024 Database.

2.3.6. Tailoring care to a person's gender, age and socio-economic status

Despite the impact country-level factors can have on patient outcomes and experiences, it is patient-level characteristics that explain most of the variation in results. Such results highlight how important it is to adapt healthcare to a person's gender, age, and socio-economic status (Table 2.4). Perhaps the most striking result is the gender-health paradox: women tend to live longer than men, yet they report consistently worse health outcomes. Women also report worse healthcare experiences than men, other than the indicator confidence to self-manage where values are almost identical. Chapter 5 describes gender and other disparities in more detail, and how these could be reduced.

There are even larger inequalities between socio-economic groups. Part of this may be explained by the fact that people with lower education are more likely to have chronic conditions: 87% of primary care users aged 45 or older, compared to 78% of those in the higher education group. Still, PaRIS data show that even after adjusting for the number of chronic conditions, socially disadvantaged groups have worse outcomes (discussed further in Chapter 5). People who completed less education also typically report worse healthcare experiences, other than for the indicator Experienced co-ordination.

Age differences are less clear-cut. In terms of patient outcomes, while people aged 75 or older are less likely than those aged 45-54 to report favourably in terms of social functioning and their general health, they are more likely to be positive about their well-being and report being in good mental health. Older people are also more likely to report positive healthcare experiences, other than for the indicator confidence to self-manage.

Table 2.4. The PaRIS10 indicators – differences by gender, age and education

	Gender		Age		Education	
	Female	Male	Age 45-54	Age 75+	Low	High
Patient-Reported Outcome Measures (PROMs)						
Physical health (scale score 16-68)	45.6	**47.4**	44.1	44.3	44.1	**48.3**
Mental health (scale score 21-68)	46.8	**48.2**	44.2	**46.9**	45.5	**49.0**
Social functioning (% people with favourable outcome)	84%	**86%**	**84%**	79%	79%	**89%**
Well-being (scale score 0-100)	59.9	**64.2**	55.0	**61.7**	58.5	**64.6**
General health (% people with favourable outcome)	69%	**72%**	**74%**	60%	60%	**78%**
Patient-Reported Experience Measures (PREMs)						
Confidence to self-manage (% with favourable experience)	61%	61%	**61%**	57%	56%	**65%**
Experienced co-ordination (scale score 0-15)	8.0	**8.5**	7.1	**8.6**	8.3	8.1
Person-centred care (scale score 0-24)	16.1	**16.5**	14.7	**16.6**	16.0	**16.5**
Experienced quality (% people with favourable experience)	86%	**88%**	82%	**89%**	86%	**88%**
Trust in healthcare systems (% people with favourable experience)	58%	**68%**	59%	**66%**	59%	**67%**
Share of respondents with one or more chronic condition	81%	83%	71%	92%	87%	78%

Note: Values for full sample, including people without chronic conditions (except for indicators experienced co-ordination and person-centred care, where no data available for people without chronic conditions). Blue cells denote higher values with statistical significance ($p<0.05$). See Table 2.1 for definitions of scales and cutoffs used for each indicator.
Source: OECD PaRIS 2024 Database.

2.3.7. People living with chronic conditions are more likely to have worse outcomes but have similar healthcare experiences

Results also show the impact of living with chronic conditions on patient outcomes. Of All primary care users who participated in PaRIS, 81% are living with chronic conditions. Furthermore, 52% of patients having *multiple* chronic conditions (two or more). Managing these conditions is far more complex and resource-intensive than dealing with a single illness, putting pressure on health systems and healthcare professionals to deliver high-quality, co-ordinated care.

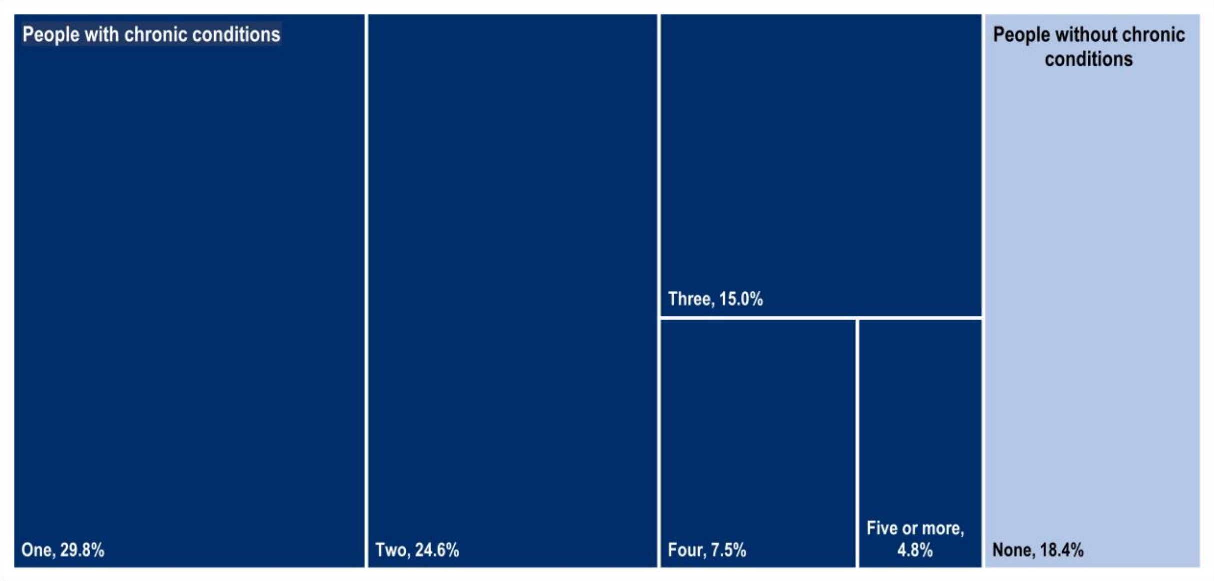
People living with chronic conditions generally report worse outcomes than those without chronic conditions, as seen across all five PROMs in all participating countries. Similarly, for the three PREMs measuring primary care experiences, people with chronic conditions are, on average, less likely to report positive experiences compared to those without chronic conditions.

However, the differences between these groups are often minimal, particularly in areas like experienced quality and trust in the healthcare system. In some cases, people with chronic conditions report slightly more positive experiences; for example, in five participating countries, they are more likely to trust their healthcare system.

Chapters 3 and 4 delve deeper into these findings, highlighting how well-designed primary care can improve both outcomes and experiences. For instance, further analysis of PaRIS data show that people with multiple chronic conditions report better care co-ordination when they have had a medication review – where they discuss all their medications with a healthcare professional.

Figure 2.7 and Figure 2.8 highlight some key findings, with more detailed indicator-by-indicator results comparing people with and without chronic conditions in Section 2.3. Supplementary dashboards in the Annex provide a full breakdown of results by country for people without chronic conditions, as well as for all primary care users.

Figure 2.7. Most primary care users aged 45 years or older are living with one or more chronic conditions



Note: Results not age-sex standardised.
Source: OECD PaRIS 2024 Database.

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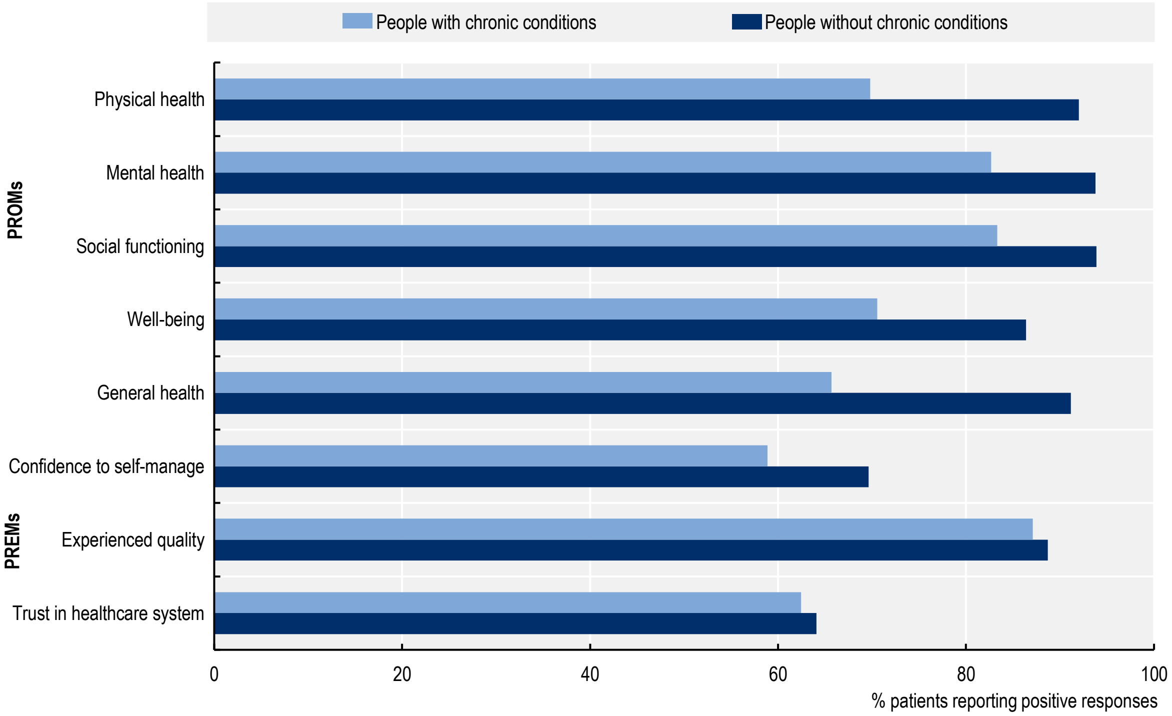
Figure 2.8. People with chronic conditions report worse health outcomes but similar healthcare experiences



Note: No data available for people without chronic conditions for “experienced co-ordination” and “person-centredness” PREMs.
Source: OECD PaRIS 2024 Database.

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2.4. Indicator-by-indicator descriptive analysis

2.4.1. Physical health

The indicator measures physical health based on a person's response to four questions on physical function, pain and fatigue, using the PROMIS Global Scale. The charts here show the scale score for an "average" person with specified characteristics. These results are further broken down by specific characteristics, such as whether respondents have chronic conditions, and by their primary care practice. This score is a T-score metric in which 42 is the cutoff for being in "good" physical health or better (as compared to "fair" health or worse).

In almost all countries, an average person living with chronic conditions perceived their physical health to be above the good-fair cutoff score of 42 (Figure 2.9). These average scale scores were highest in the United States, Switzerland, Canada, Australia, the Netherlands and Norway where values were all significantly higher than the OECD PaRIS average. Still, the average scale score in all countries was below the very good-good cutoff of 50– likely reflecting that the PaRIS survey samples only those using primary care and an older population group, as compared to the general population.

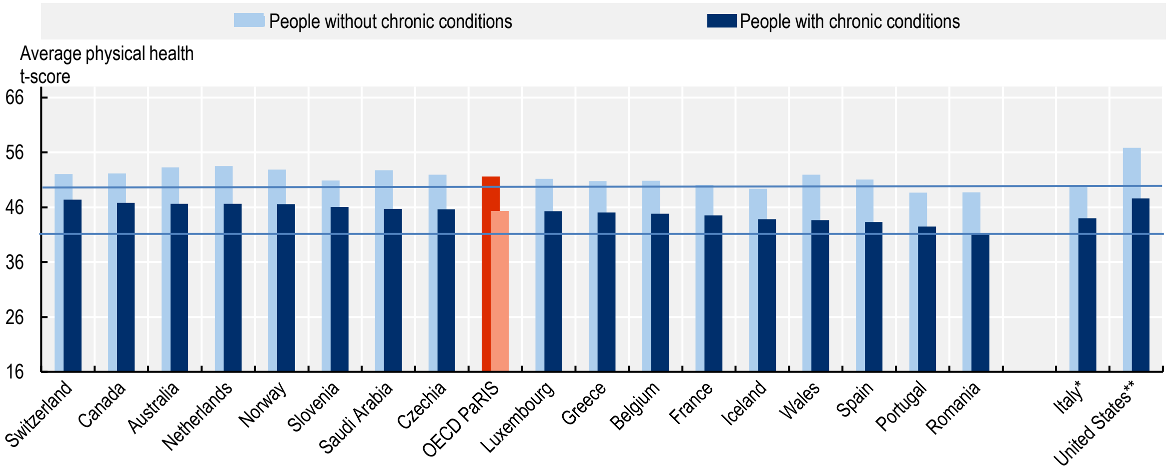
Despite the average person with chronic conditions typically being in good physical health, 3 out of 10 people living with chronic conditions still rated their physical health unfavourably (below the good-fair cutoff of 42), on average across OECD countries. This rises to 4 in 10 people in Portugal, Spain and Wales, and almost 5 in 10 people in Romania – see the PaRIS10 dashboard (Table 2.2) for further details.

In contrast, for the average person without chronic conditions, their physical health score was above the very good-good cutoff in 13 of 19 countries. In all countries, the average scale score for people living with chronic conditions was significantly lower than for those living without chronic conditions ($p<0.05$).

People with a low education level reported much worse physical health, reflecting in part the higher prevalence of chronic conditions in this group. Women were also in worse physical health compared to men. Differences by age group were negligible, with the average scale score for those aged 75+ the same as for those aged 45-54 (see Section 2.3 and Chapter 5 for further analysis).

Within countries there is generally little variation in patients' physical health across primary care practices, as compared with other PaRIS10 indicators (Figure 2.3). Still, differences in physical health outcomes across primary care practices amounted to about 10 points (equivalent to one standard deviation) in Australia, Belgium, Czechia, Norway, Saudi Arabia and Wales (Figure 2.10).

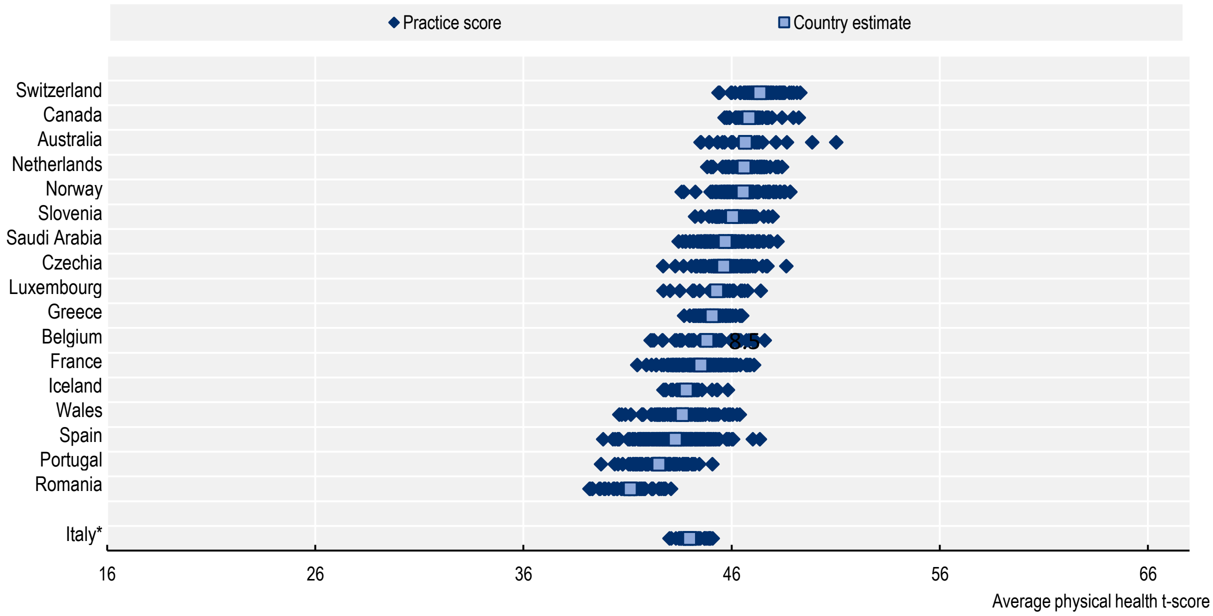
Figure 2.9. Physical health – people with and without chronic conditions



Note: PROMIS® Scale v1.2 – Global Health component for physical health. is a T-score metric with a range of 16-68. Two cutoffs are shown: a good-fair cutoff of 42, and a very good-good' cutoff of 50. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. All within country differences between people with and without chronic conditions are statistically significant (p<0.05).
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/gwly54

Figure 2.10. Physical health – variation in outcomes across primary care practices (people with chronic conditions)



Note: Excludes practices with less than ten respondents. Every dark dot represents a primary care practice. PROMIS® Scale v1.2 – Global Health component for physical health is a T-score metric with a range of 16-68, and a good-fair cutoff of 42. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **Practice-level data for the United States are not available.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/uy0o2g

2.4.2. Mental health

The indicator measures mental health based on a person’s response to four questions on quality of life, emotional distress and social health, using the PROMIS Global Scale. The charts here show the scale score for an “average” person with specified characteristics. These results are further broken down by specific characteristics, such as whether respondents have chronic conditions, and by their primary care practice. This score is a T-score metric in which 40 is the cutoff for being in “good” mental health or better (as compared to “fair” health or worse).

In all countries, an average person living with chronic conditions perceived their mental health to be above the good-fair cutoff score of 40 (Figure 2.11). These average scale scores were highest in Saudia Arabia, the United States, Switzerland and Canada, where values were all significantly higher than the OECD PaRIS average – and above the very good-good cutoff of 48.

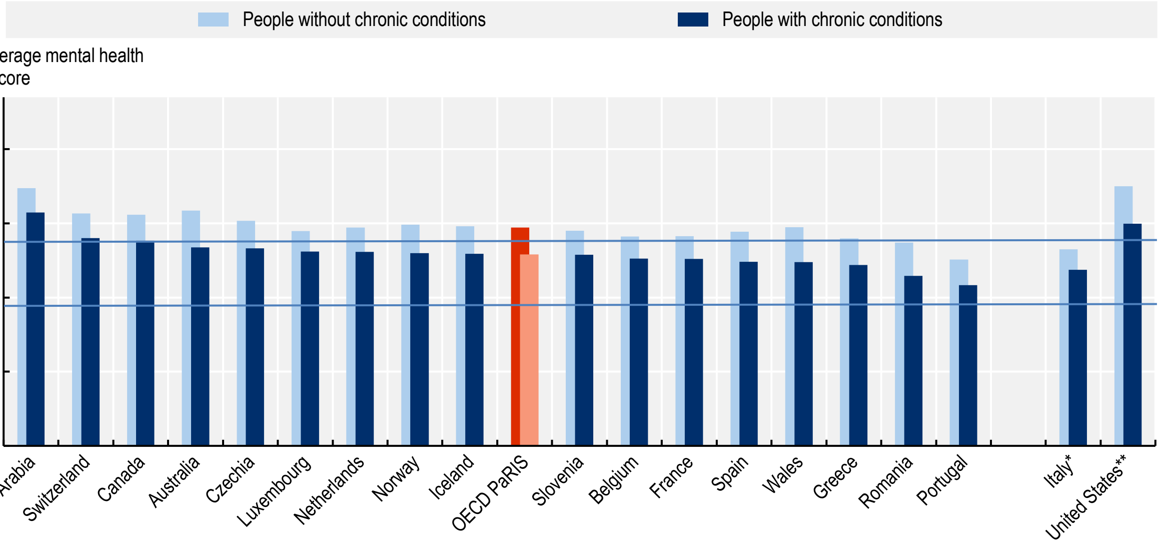
Despite most people with chronic conditions typically being in good mental health, about 2 out of 10 people living with chronic conditions still rated their mental health unfavourably (below the good-fair cutoff of 40), on average across OECD countries – see the PaRIS10 dashboard (Table 2.2) for further details.

For people without chronic conditions, the average mental health score was above the very good-good cutoff in most countries (16 of 19). In all countries, the average scale score for people living with chronic conditions was significantly lower than for those living without chronic conditions ($p<0.05$).

People with a low education level reported much worse mental health, reflecting in part their higher prevalence of chronic conditions. Women were also in worse mental health than men, on average. People aged 75+ reported being in better mental health than those aged 45-54, on average (see Section 2.3 and Chapter 5 for further analysis).

Within countries there is generally little variation in patients’ mental health across healthcare practices, as compared with other PaRIS10 indicators (Figure 2.3). The largest differences in mental health outcomes across practices were about 7 points, in Australia, Norway and Wales (Figure 2.12).

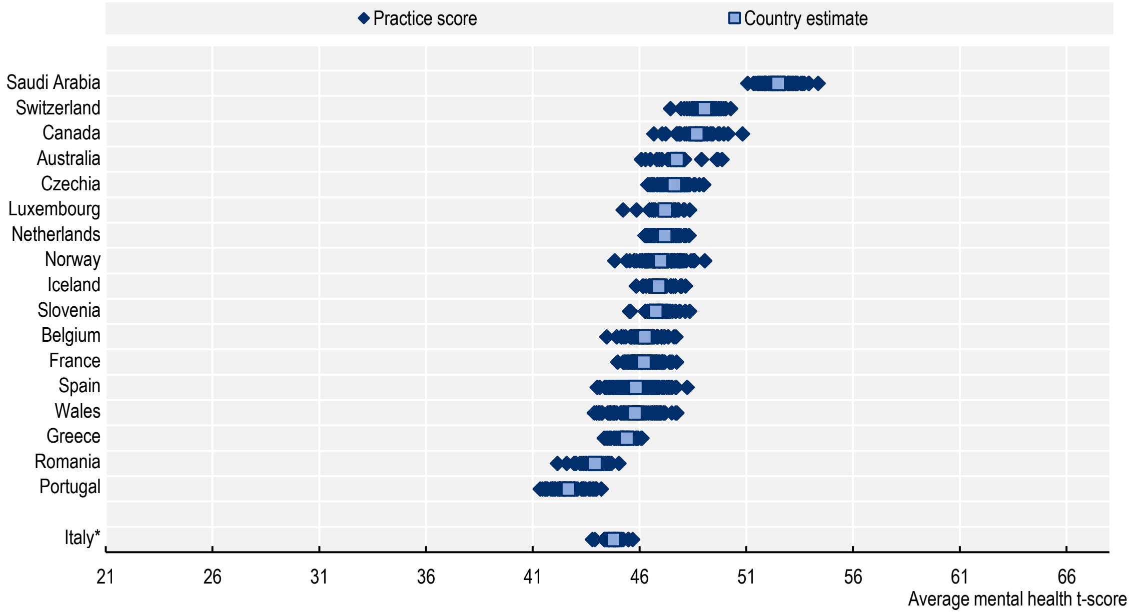
Figure 2.11. Mental health – people with and without chronic conditions



Note: PROMIS® Scale v1.2 – Global Health component for mental health score is a T-score metric with a range of 21-68. Two cutoffs are shown: a good-fair cutoff of 40, and a very good-good' cutoff of 48. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. All within country differences between people with and without chronic conditions are statistically significant (p<0.05).
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/flwhjz

Figure 2.12. Mental health – variation in outcomes across healthcare practices (for people with chronic conditions)



Note: Excludes practices with less than ten respondents. Every dark dot represents a primary care practice. PROMIS® Scale v1.2 – Global Health component for mental health is a T-score metric with a range of 21-68, and a good-fair cutoff of 40, higher values represent better mental health. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **Practice-level data for the United States are not available.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/d213kr

2.4.3. Social functioning

The indicator social functioning measures how well people can carry out their usual social activities and roles, using a single item from the PROMIS Global Scale. The charts below show the share of respondents reporting positive outcomes (good, very good or excellent, as compared to fair or poor). These results are further broken down by specific characteristics, such as whether respondents have chronic conditions, and by their primary care practice.

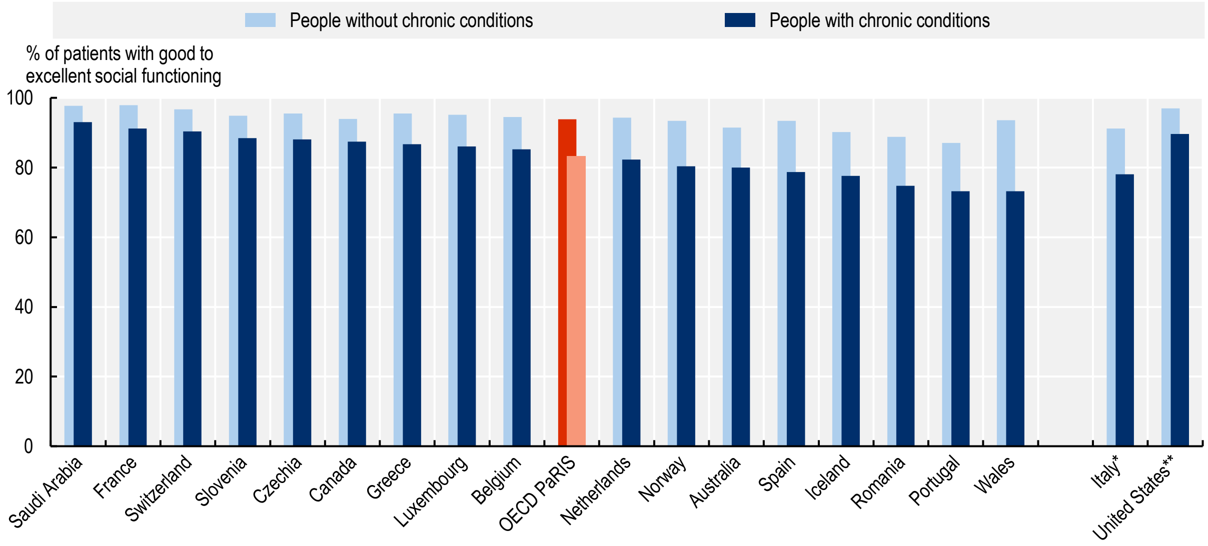
On average across OECD countries, 83% of people with chronic conditions reported positive outcomes for their social functioning, with a cross-country range of 73-93% (Figure 2.13). Saudi Arabia (93%), France (91%), Switzerland and the United States (90%) had the highest share of people with chronic conditions reporting positive outcomes.

For people without chronic conditions, 94% reported positive outcomes, with at least 9 in 10 rating their social functioning favourably in almost all countries (17 out of 19). In all countries, this share of people reporting favourable outcomes was significantly higher than those living with chronic conditions. Differences between people with and without chronic conditions were in general most marked in Wales, Portugal, Romania, Italy and Spain, countries where relatively few people with chronic conditions reported favourable outcomes.

People with a low education level are less likely to report positive outcomes (79%, compared to 89% for those with a high education level). Age also matters, with people aged 75 years or older less likely to report positive outcomes. In both cases, differences reflect to a large part the higher prevalence of chronic conditions amongst older people and those with a lower education level. Differences by gender were much less profound. These results point to the need for policies that address major risk factors for health and encourage healthy ageing, as well as the importance of the social determinants of health. See Section 2.3 and Chapter 5 for further analysis.

Within countries, there can be large variation in patients' social functioning across primary care practices, more commonly in countries with comparatively low overall values (Figure 2.14). This is particularly notable in Wales and Portugal. Some primary care practices in these countries had outcomes much higher than the OECD PaRIS average, despite the country averages being the lowest among participating countries. Such variation may reflect health inequalities driven by socio-economic factures but may also be due to differences in access and quality to associated social care services in the vicinity of primary care practices, with further analysis needed to understand the causes.

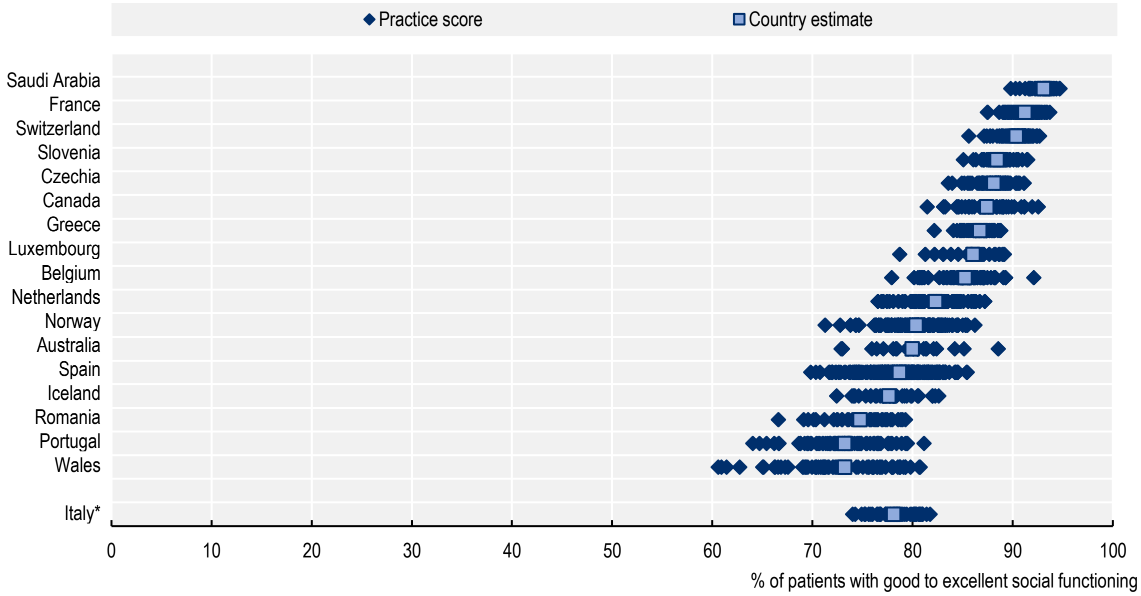
Figure 2.13. Social functioning – people with and without chronic conditions reporting positive outcomes



Note: PROMIS® Scale v1.2 – Global Health. Answer to the question: "In general, please rate how well you carry out your usual social activities and roles [further specified in questionnaire]", "good, very good or excellent" versus "fair or poor". * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. All within country differences between people with and without chronic conditions are statistically significant (p<0.05).
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/967hsf

Figure 2.14. Social functioning – variation in outcomes across primary care practices (people with chronic conditions)



Note: Excludes practices with less than ten respondents. Every dark dot represents a primary care practice. PROMIS® Scale v1.2 – Global Health. Answer to the question: "In general, please rate how well you carry out your usual social activities and roles [further specified in questionnaire]", "good, very good or excellent" versus "fair or poor". * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** Practice-level data for the United States are not available.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/1zk6f5

2.4.4. Well-being

The indicator well-being measures the degree to which a person feels positive in terms of their mood, vitality and fulfilment, based on a person's response to five questions that comprise the WHO-5 Well-being index. The charts here show the scale score for an "average" person with specified characteristics. These results are further broken down by specific characteristics, such as whether respondents have chronic conditions, and by their primary care practice.

This score is based on a raw scale 0-25 that has been converted to a 0-100 scale, where 50 is a commonly used cutoff for a person having poor mental well-being.

In all countries, the average score for people living with chronic conditions was above the cutoff for having poor mental well-being, based on their perception of their own well-being (Figure 2.15). These average scale scores were highest in the Netherlands, Switzerland, the United States, Iceland and Norway, whose values were all significantly higher than the OECD PaRIS average.

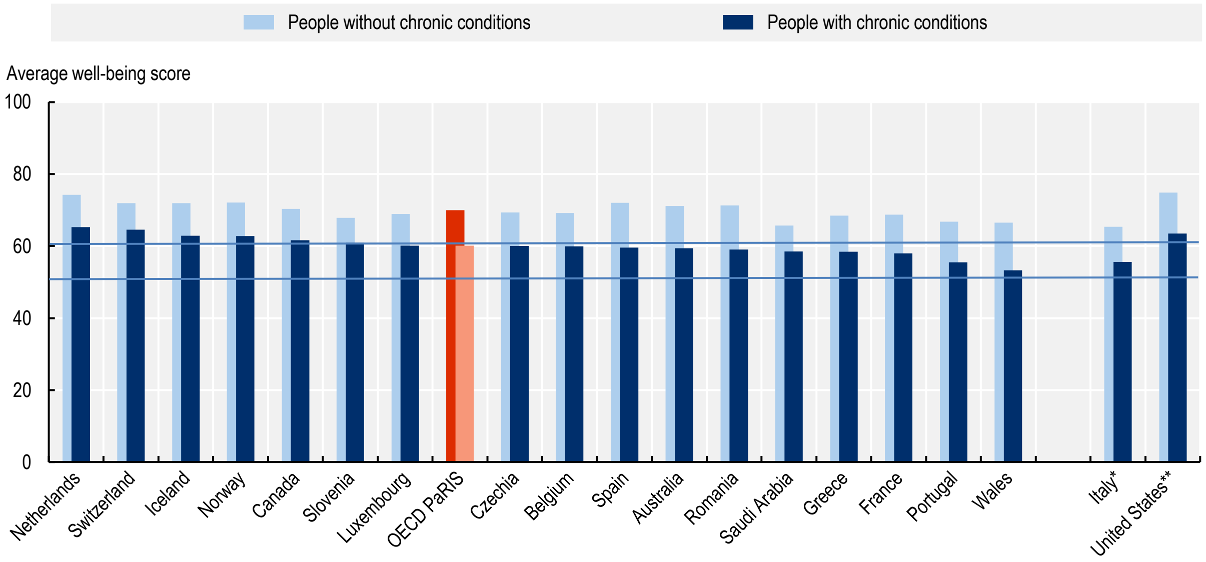
Still, in only these and four other countries (Canada, Slovenia, Luxembourg and Czechia) did the average person living with chronic conditions feel positive about their well-being more than half of the time (a score of 60 or above). Further, about 3 of 10 people living with chronic conditions reported poor mental well-being (below the cutoff score of 50), rising to around 4 in 10 people in Wales, Portugal and Italy – see the PaRIS10 dashboard (Table 2.2) for further details.

In contrast, most people without chronic conditions felt positive about their well-being more than half of the time (a score of 60 or more), and their average scale score was significantly above those living without chronic conditions ($p<0.05$), in all countries.

People with a low education level reported worse well-being scores, reflecting in part their higher prevalence of chronic conditions. Women also reported a lower well-being on average than men. People aged 75+ reported higher well-being than those aged 45-54. These findings by patient characteristics are consistent with those for the mental health indicator (see Section 2.3 and Chapter 5 for further analysis).

Within countries, there is limited variation in patients' well-being scores across primary care practices as compared with other indicators (Figure 2.3). Still, differences in outcomes across practices amounted to about 20 points in Spain and Wales, and more than 15 points in Australia, Belgium, France, Norway, Portugal and Saudi Arabia (Figure 2.16).

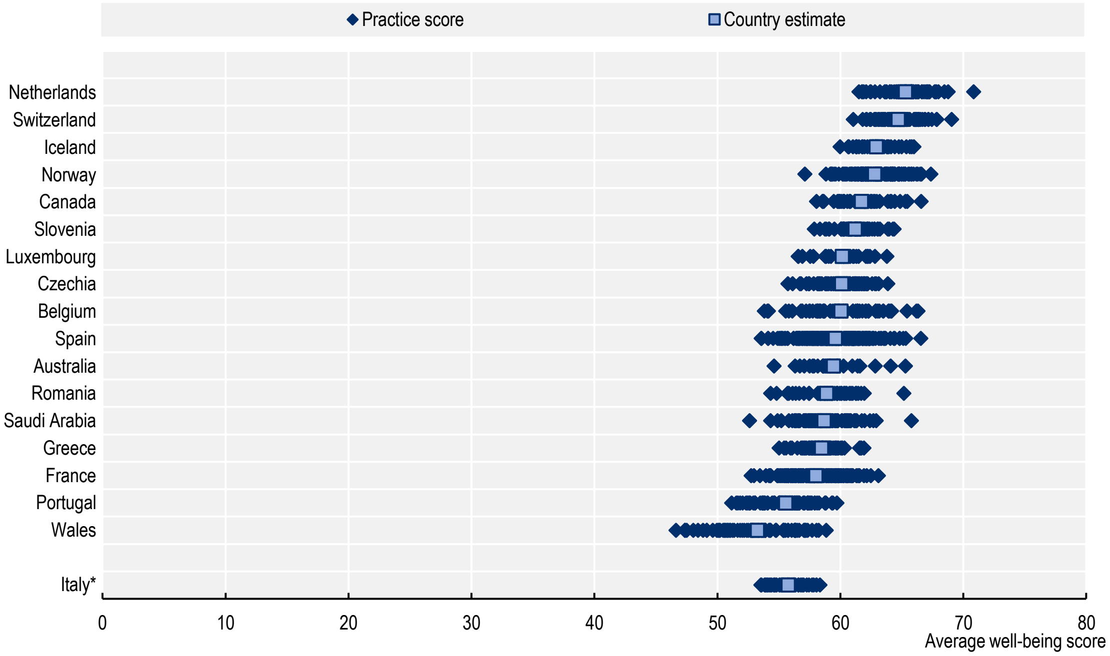
Figure 2.15. Well-being – people with and without chronic conditions



Note: WHO-5 well-being index with a range of 0-100. Two cutoffs are shown: a cutoff of 50, below which suggests poor mental well-being, and 60, representing when a respondent feels positive about their well-being more than half of the time. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. All within country differences between people with and without chronic conditions are statistically significant (p<0.05).
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/hnxq9u

Figure 2.16. Well-being – variation in outcomes across primary care practices (people with chronic conditions)



Note: Excludes practices with less than ten respondents. Every dark dot represents a primary care practice. WHO-5 well-being index with a range of 0-100. Two cutoffs are shown: a cutoff of 50, below which suggests poor mental well-being. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** Practice-level data for the United States are not available.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/dfmzbc

2.4.5. General health

This indicator general health provides an overall measure of a person’s health, using a single item from the PROMIS Global Scale. The charts below show the share of respondents reporting positive outcomes (good, very good or excellent, as compared to fair or poor). These results are further broken down by specific characteristics, such as whether respondents have chronic conditions, and by their primary care practice.

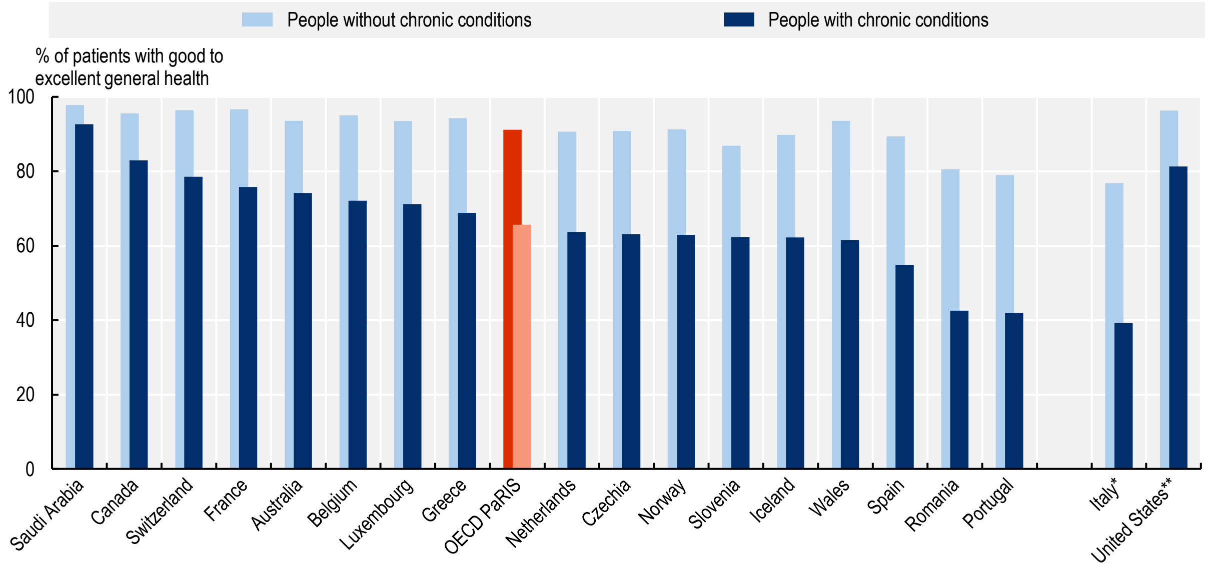
On average across OECD countries, 66% of people living with chronic conditions rated their general health positively, but with a wide cross-country range of 39-93% (Figure 2.17). Saudia Arabia had the highest share of people with chronic conditions reporting positive outcomes (93%), with Canada and the United States also having over 80% of these respondents reporting positive outcomes.

Among people without chronic conditions, 91% reported positive outcomes. In most countries (14 of 19), 9 out of 10 people without chronic conditions rated their general health favourably. In all countries, this share of people reporting favourable outcomes was significantly higher than those living with chronic conditions. Differences between people with and without chronic conditions were in general most marked in countries where relatively few people with chronic conditions reported favourable outcomes.

People with a low education level are less likely to report positive outcomes (60%, compared to 78% for those with a high education level). Age also matters, with people aged 75 years or older less likely to report positive outcomes (60% of respondents, compared to 74% for those aged 45-54). In both cases, differences reflect to a large part the higher prevalence of chronic conditions amongst older people and those with a lower education level. Differences by gender were much less marked. These results point to the need for policies that address major risk factors for health and encourage healthy ageing, as well as the importance of the social determinants of health. See Section 2.3 and Chapter 5 for further analysis.

Within countries there can be large variation in patients’ general health across primary care practices (Figure 2.18). For example, whilst the country averages for general health in Spain and Wales were markedly lower than the OECD PaRIS average, some primary care practices in these countries had outcomes higher than the OECD PaRIS average. Within-country differences were more than 50 percentage points in Portugal and Spain and were 30 percentage points or more in all surveyed countries, except for Australia, Canada, Italy, Romania and Saudi Arabia.

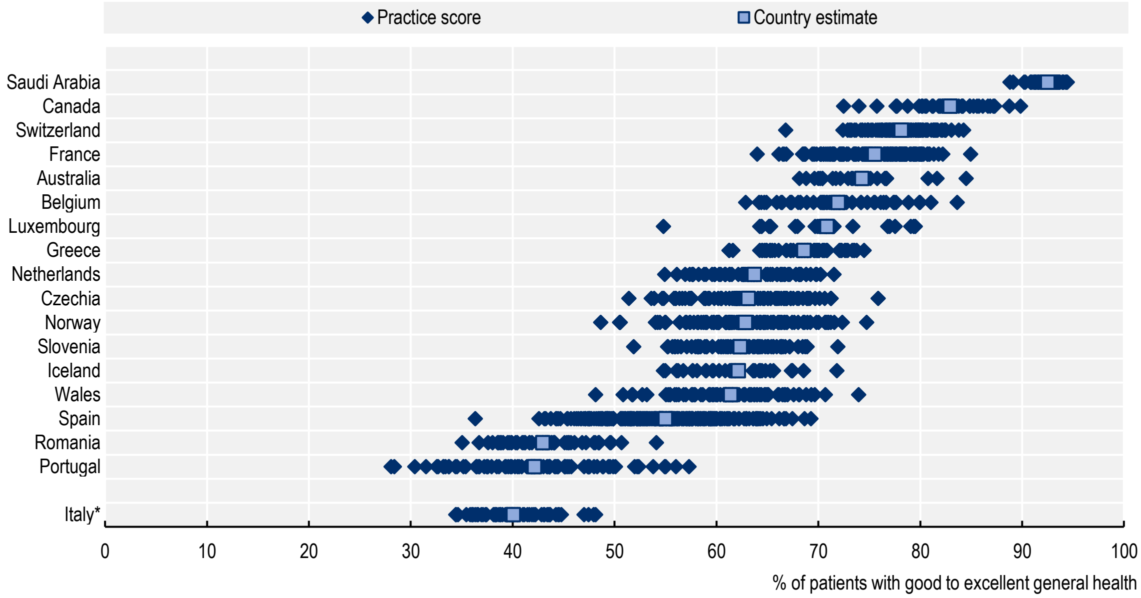
Figure 2.17. General health – people with and without chronic conditions reporting positive outcomes



Note: PROMIS® Scale v1.2 – Global Health. Answer to the question: "In general, would you say your health is …", "good, very good or excellent" versus "fair or poor". * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. All within country differences between people with and without chronic conditions are statistically significant (p<0.05).
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/82fd0h

Figure 2.18. General health – variations in outcomes across primary care practices (people with chronic conditions)



Note: Excludes practices with less than ten respondents. Every dark dot represents a primary care practice. PROMIS® Scale v1.2 – Global Health. Answer to the question: "In general, would you say your health is …", "good, very good or excellent" versus "fair or poor". * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** Practice-level data for the United States are not available.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/othu1l

2.4.6. Confidence to self-manage

The indicator confidence to self-manage measures how confident respondents are in managing their own health and well-being, based on one question from the P3CEQ data instrument. The charts below show the share of respondents reporting positive experiences (confident or very confident, as opposed to somewhat confident or not confident at all). These results are further broken down by specific characteristics, such as whether respondents have chronic conditions, and by their primary care practice.

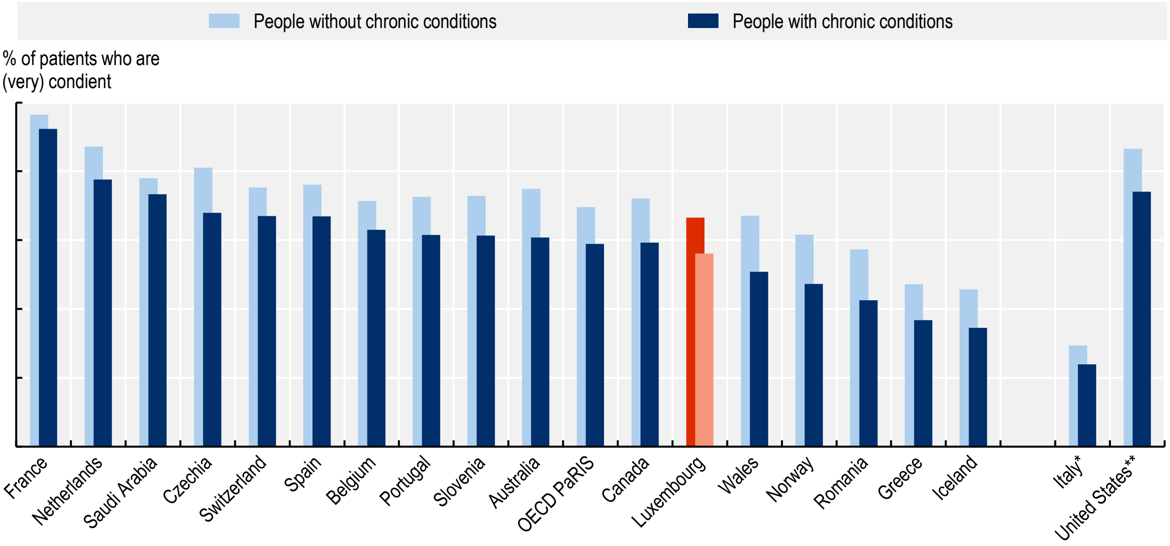
On average across OECD countries, only 59% of people living with chronic conditions reported being confident to self-manage (Figure 2.19), but with a very wide cross-country range of 24-92%. France (92%) had the highest share of people being confident to self-manage for people with chronic conditions, followed by the Netherlands (78%), the United States (74%) and Saudi Arabia (73%).

For people without chronic conditions, 70% reported being confident to self-manage. Within-country differences, though, were only statistically significant in 8 of the 19 countries (France, the Netherlands, Czechia, Australia, Canada, Wales, Norway and Romania).

People with a low education level are less likely to be confident to self-manage (56%, compared to 65% for those with a high education level). Age differences were slightly less marked, with people aged 75 years or older less likely to report confidence to self-manage (57% of respondents, compared to 61% for those aged 45-54). In both cases, differences could reflect in part the higher prevalence of chronic conditions amongst older people and those with a lower education level. There were no discernible differences by gender. See Section 2.3 and Chapter 5 for further analysis.

Within countries, confidence to self-manage varies markedly across primary care practices for some countries (Figure 2.20), notably in Australia, Canada, Norway and Wales, with differences of more than 25 percentage points. Such variation could reflect differences in the share of people with chronic conditions a primary care practice is covering, as well as differences in the quality of and access to primary care across primary care practices. A more in-depth analysis of this indicator finds that involving patients in care decisions is crucial to enhance confidence in their ability to manage their own health. See Chapter 4 for a more in-depth exploration of this issue.

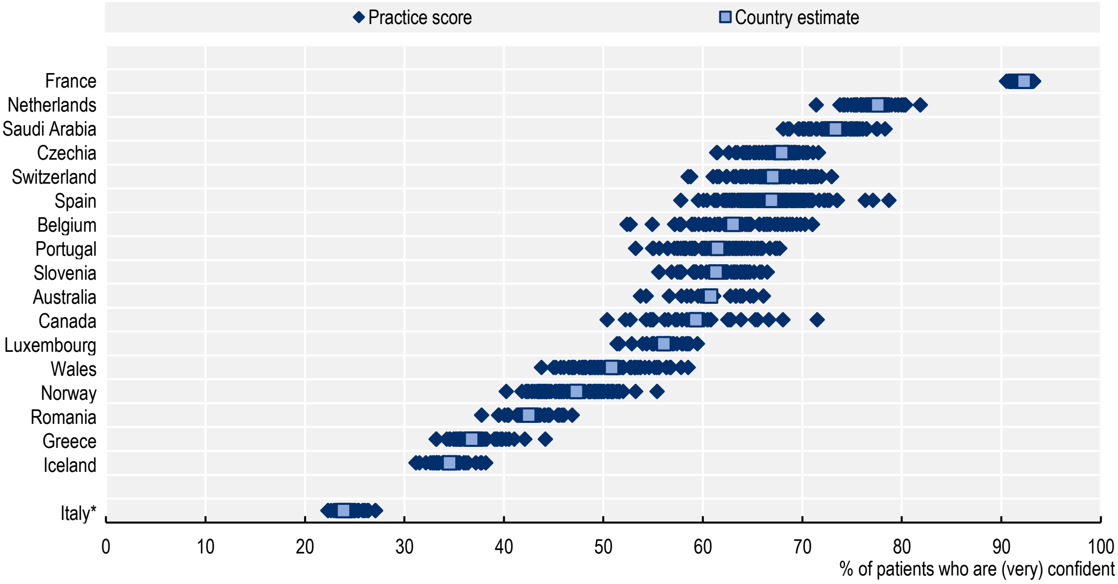
Figure 2.19. Confidence to self-manage – people with and without chronic conditions reporting positive experiences



Note: P3CEQ Questionnaire. Response to question: “How confident are you that you can manage your own health and well-being?”, “confident or very confident” versus “somewhat confident or not confident at all”. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. All within country differences between people with and without chronic conditions are statistically significant (p<0.05), except for Saudi Arabia, Switzerland, Spain, Belgium, Portugal, Slovenia, Luxembourg, Greece, Iceland, Italy and the United States.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/o1veha

Figure 2.20. Confidence to self-manage – variation in experiences across primary care practices (people with chronic conditions)



Note: Excludes practices with less than ten respondents. Every dark dot represents a primary care practice. P3CEQ Questionnaire. Response to question: “How confident are you that you can manage your own health and well-being?”, “confident or very confident” versus “somewhat confident or not confident at all”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** Practice-level data for the United States are not available.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/ma3o4i

2.4.7. Experienced co-ordination

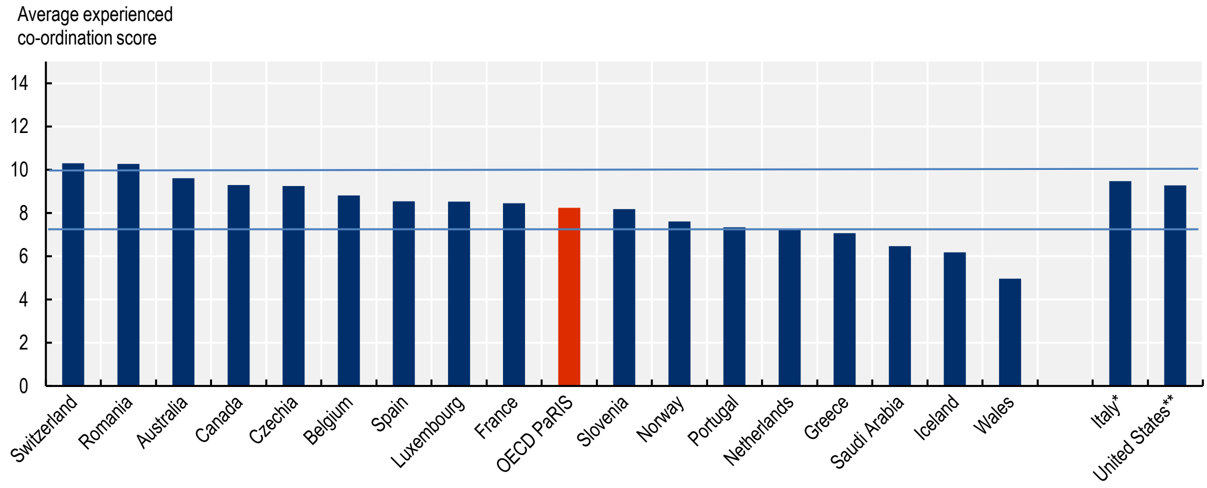
The indicator experienced co-ordination is based on the P3CEQ data instrument. The scale includes five questions to measure the extent to which a person experiences a seamless and continuous journey through different healthcare practices and settings. The charts below show the average scale score for people living with chronic conditions in each country, and within country by their primary care practice. This score is based on a scale ranging from 0 to 15. Two cutoffs are shown: a value of 7.5, equivalent to a respondent scoring on average 50% or more across the five questions; and a higher cutoff of 10, equivalent to scoring on average 66.6%. Data are not available for people without chronic conditions.

In 6 of the 19 countries, the average score for people living with chronic conditions was below the cutoff value of 7.5, equivalent to them scoring below 50% across the five questions (Figure 2.21). Furthermore, only in Switzerland and Romania this average score was above 10 (equivalent to scoring on average 66.6%). Indeed, sizeable shares of respondents were not so confident that they had experienced good co-ordination: on average across OECD countries, around 4 of 10 people living with chronic conditions scored below the cutoff value of 7.5 (less than 50%) – see the PaRIS10 dashboard (Table 2.2) for further details.

People with a low education level reported on average slightly better experiences with co-ordination, as compared to those with a high education level. This contrasts with all other PaRIS10 indicators, where those with a higher education level were more likely to report a positive result. This could reflect healthcare systems successfully managing co-ordination for people with low education, though it could also be due to higher expectations from those with higher education levels. Age and gender differences were more marked, with older people and men having higher average scores. See Section 2.3 and Chapter 5 for further analysis.

In several countries there is a wide variation in patients experiencing co-ordination across practices, notably in Portugal, Saudi Arabia, Switzerland and Wales (Figure 2.22). Such variation points to potential differences in the quality of and access to healthcare of primary care practices, as well as related care in other healthcare settings. A more in-depth analysis of this indicator finds that higher use of care planning and having regular medication reviews offer an important opportunity to improve care co-ordination. See Chapter 3 and 4 for a more in-depth exploration of this issue.

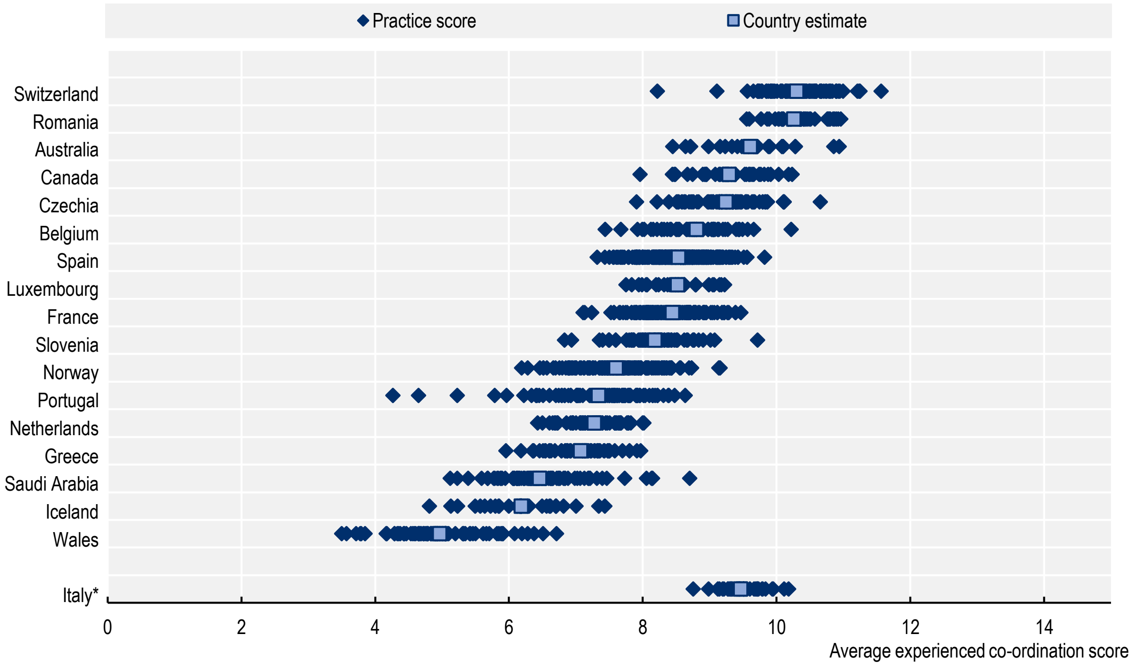
Figure 2.21. Experienced co-ordination – people with chronic conditions



Note: P3CEQ Questionnaire. Response to five questions measuring care co-ordination. Scale ranges from 0 to 15. Two cutoffs are shown: a cutoff of 7.5, representing the midpoint of the range of the scale, and a cutoff of 10, equivalent to a positive response on average across questions asked. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/9lc530

Figure 2.22. Experienced co-ordination – variation in experiences across primary care practices (people with chronic conditions)



Note: P3CEQ Questionnaire. Response to five questions measuring care co-ordination. Scale ranges from 0 to 15, higher scores represent better care co-ordination. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **Practice-level data for the United States are not available.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/y5basc

2.4.8. Person-centred care

The indicator person-centred care is based on the P3CEQ data instrument. The scale includes eight questions to measure the extent to which a person's health needs are managed holistically, ensuring their preferences and needs are central to the care received. The charts below show the average scale score for people living with chronic conditions in each country, and within country by their primary care practice. This score is based on a scale ranging from 0 to 24. Two cutoffs are shown: a value of 12, equivalent to a respondent scoring on average 50% or more across the eight questions; and a higher cutoff of 16, equivalent to scoring on average 66.6%. Data are not available for people without chronic conditions.

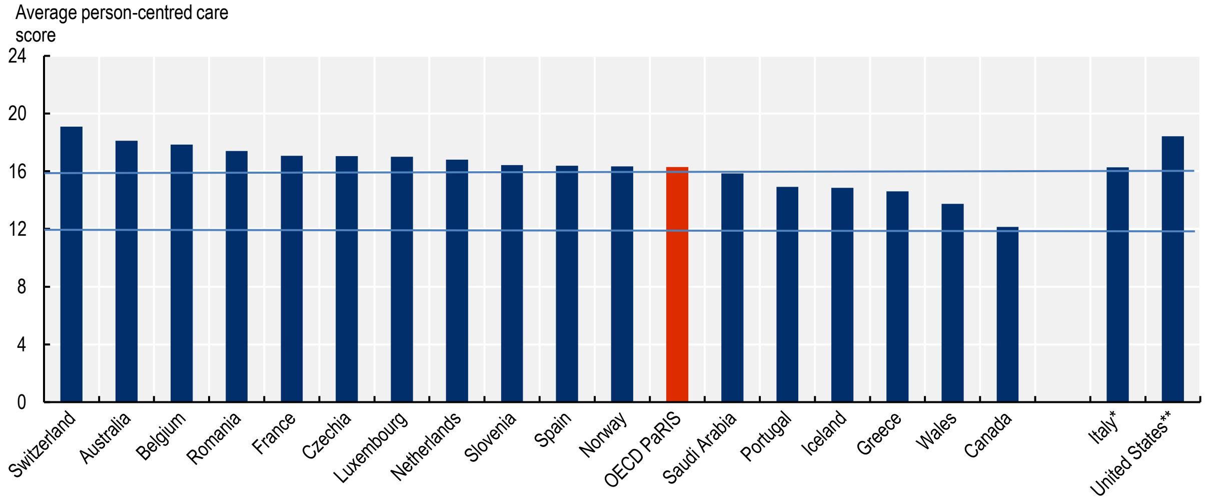
In all countries, people living with chronic conditions scored on average above the cutoff value of 12, equivalent to them scoring at least 50% across the five questions (Figure 2.23). In most countries (13 of 19), this average scale score was also above the higher cutoff of 16 (equivalent to a positive response on average across the eight questions). Scores were highest in Switzerland and the United States and Australia.

In most countries, around 1 out of 10 people living with chronic conditions did not consider they had received person-centred care (below the cutoff value of 12, or 50%). But this share rises to almost 4 in 10 people in Canada and Wales – see the PaRIS10 dashboard (Table 2.2) for further details.

People with a low education level have on average a lower experience score, as compared to those with a high education level. A similar difference was observed by gender, with males having a higher experience score on average. Age differences were slightly more marked, with people aged 75 years or older on average reporting a higher experience score. See Section 2.3 and Chapter 5 for further analysis.

Within countries there can be wide variation in patients' experiences with person-centred care across practices, with highest differences across primary care practices seen in Portugal and Wales (Figure 2.24). Such variation points to potential differences in the quality of healthcare of primary care practices, and potentially also related care in other healthcare settings. A more in-depth analysis of this indicator points to the key role of continuity of information, and particularly the need to repeat information. See Chapter 4 and 6 for more in-depth explorations of this issue.

Figure 2.23. Person-centred care – people with chronic conditions

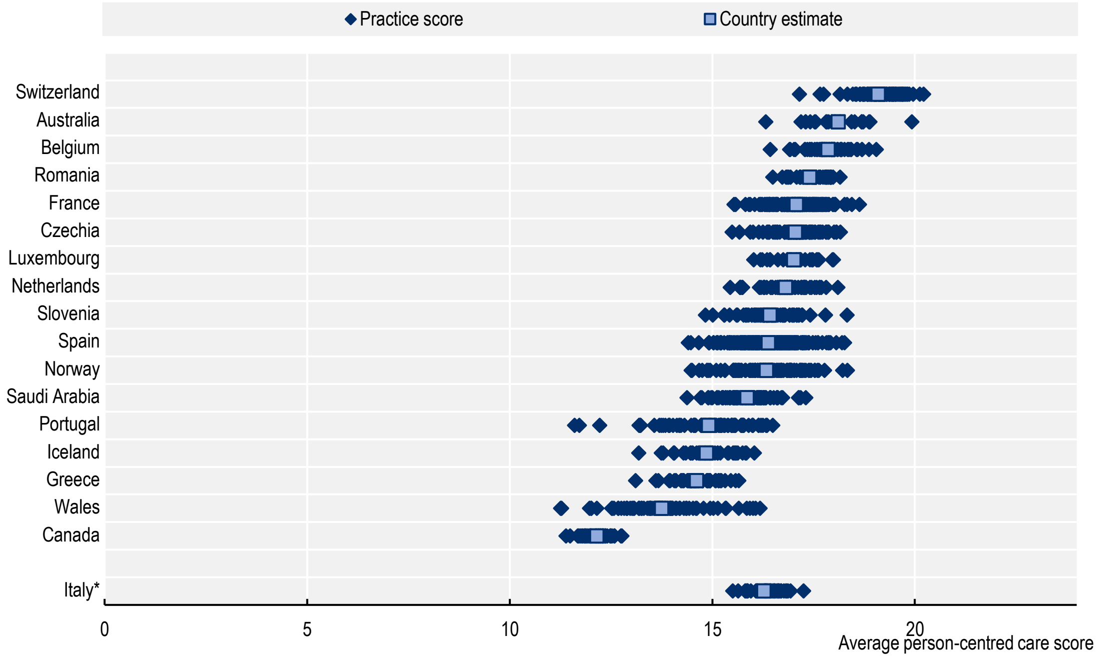


Note: P3CEQ Questionnaire. Response to eight questions measuring if care is person-centred. Scale ranges from 0 to 24. Two cutoffs are shown: 12, representing the midpoint of the scale range, and 16, equivalent to a positive response on average across questions asked. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older.

Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/r0q13o

Figure 2.24. Person-centredness – variation in experiences across primary care practices (people with chronic conditions)



Note: P3CEQ Questionnaire. Response to eight questions measuring if care is person-centred. Scale ranges from 0 to 24, higher scores represent better person-centred care. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **Practice-level data for the United States are not available.

Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/re1z67

2.4.9. Experienced quality

The indicator experienced quality provides an overall measure of how a person rates the care they have received over the past 12 months, based on a question adapted from the Commonwealth Fund International Health Policy Survey. The charts below show the share of respondents reporting positive experiences (good, very good or excellent, as opposed to fair, poor or not sure). These results are further broken down by specific characteristics, such as whether respondents have chronic conditions, and by their primary care practice.

On average across OECD countries, 87% of people living with chronic conditions reported positive experiences, but with a wide cross-country range of 69-97% (Figure 2.25). Switzerland (97%), Czechia (96%) and Belgium (95%) had the highest share of people reporting positive experiences for people with chronic conditions.

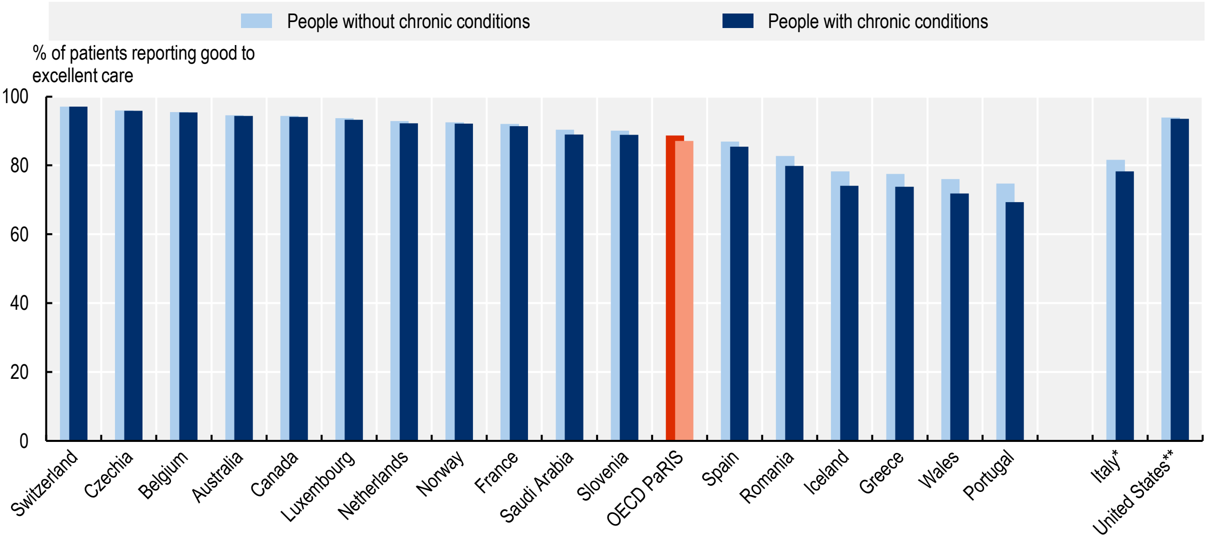
Results were very similar for people without chronic conditions (89% reporting positive experiences on average), with no statistical difference between people with and without chronic conditions within all countries.

People with a low education level are slightly less likely to report positive experiences (86%, compared to 88% for those with a high education level). Age differences were more marked, with people aged 75 years or older more likely to report positive experiences (89% of respondents, compared to 82% for those aged 45-54). Women were slightly less likely than men to report positive experiences. See Section 2.3 and Chapter 5 for further analysis.

Within countries, there is often large variation in patient experiences across primary care practices (Figure 2.26). Indeed, this is the PaRIS10 indicator where practice-level variation is most prominent (Figure 2.3). Within-country differences across practices are particularly notable in Wales and Portugal, with a more than 50 percentage point range amongst practice estimates. Within-country variation amongst practices was also relatively high in Greece, Spain and Iceland, with a more than 30 percentage point range. In all these countries, patients using their better-performing practices had similar experiences to some of the countries with the highest values overall.

Such variation could point to differences in the quality of healthcare across primary care practices, though further investigation is warranted to understand the potential causes. Indeed, in-depth analysis of the factors behind higher quality healthcare systems offer important insights, including time scheduled for consultation and length of relationship with the healthcare provider (see Chapter 3); as well as if practices manage and invest in their relationship with patients and how they help them navigate the system (see Chapter 4).

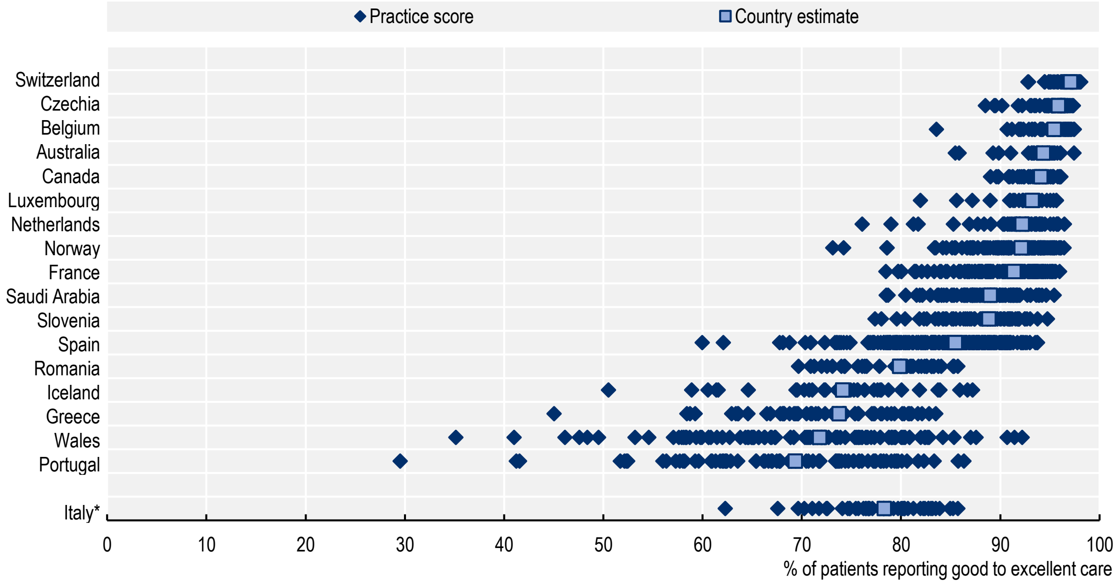
Figure 2.25. Experienced quality – people with and without chronic conditions reporting positive experiences



Note: Response to question: "When taking all things into consideration in relation to the care you have received, overall, how do you rate the medical care that you have received in the past 12 months from your primary care centre?", "good, very good or excellent" versus "fair or poor". *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. All within country differences between people with and without chronic conditions are not statistically significant (p<0.05).
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/yn8l47

Figure 2.26. Experienced quality – variation in experiences across primary care practices (people with chronic conditions)



Note: Excludes practices with less than ten respondents. Every dark dot represents a primary care practice. Response to question: "When taking all things into consideration in relation to the care you have received, overall, how do you rate the medical care that you have received in the past 12 months from your primary care centre?", "good, very good or excellent" versus "fair or poor". * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. ** Practice-level data for the United States are not available.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/09pykl

2.4.10. Trust in healthcare system

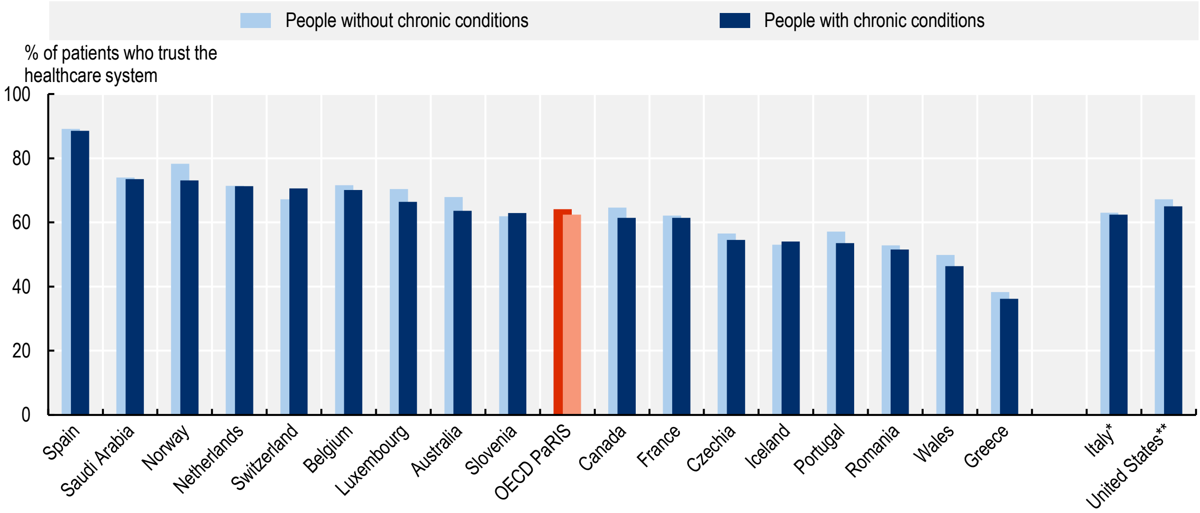
The indicator trust in healthcare system measures the degree to which a person trusts their healthcare system overall, based on a question adopting OECD guidelines on measuring trust. The charts below show the share of respondents reporting positive experiences (agree or strongly agree that the healthcare system can be trusted, compared to neither agree nor disagree, disagree, or strongly disagree) with specified characteristics. These results are further broken down by specific characteristics, such as whether respondents have chronic conditions, and by their primary care practice.

On average across OECD countries, 62% of respondents with chronic conditions say that they trust their healthcare system, but with a wide cross-country range of 36-89% (Figure 2.27). Spain[1] (89%) had the largest proportion of people with chronic conditions trusting their healthcare system, followed by Saudi Arabia (74%) and Norway (73%). Results were very similar for people without chronic conditions (64% trusting their healthcare system on average), with no statistical difference between people with and without conditions within all countries. As PaRIS only includes people who are using primary care, it may not include those with the lowest levels of trust who refrain from using healthcare services.

People with a low education level are less likely to trust their healthcare system (59%, compared to 67% for those with a high education level). Age differences were similar, with people aged 75 years or older more likely to report positive experiences (66% of respondents, compared to 59% for those aged 45-54). Gender disparities were large, with women much less likely than men to report positive experiences (58% versus 68%). This points to a need for greater emphasis on policies that ensure women feel safe and respected in healthcare settings.

Across practices within countries, trust in the healthcare system often vary substantially (Figure 2.28), with a range of 10-20 percentage points amongst practice estimates in most countries, and around 30 percentage points in Portugal and Wales. More in-depth analysis of trust finds that trust in healthcare systems closely reflects personal experiences, such as whether a person has encountered adverse events, poor care co-ordination, or problematic waiting times. See Chapter 6 for a further discussion.

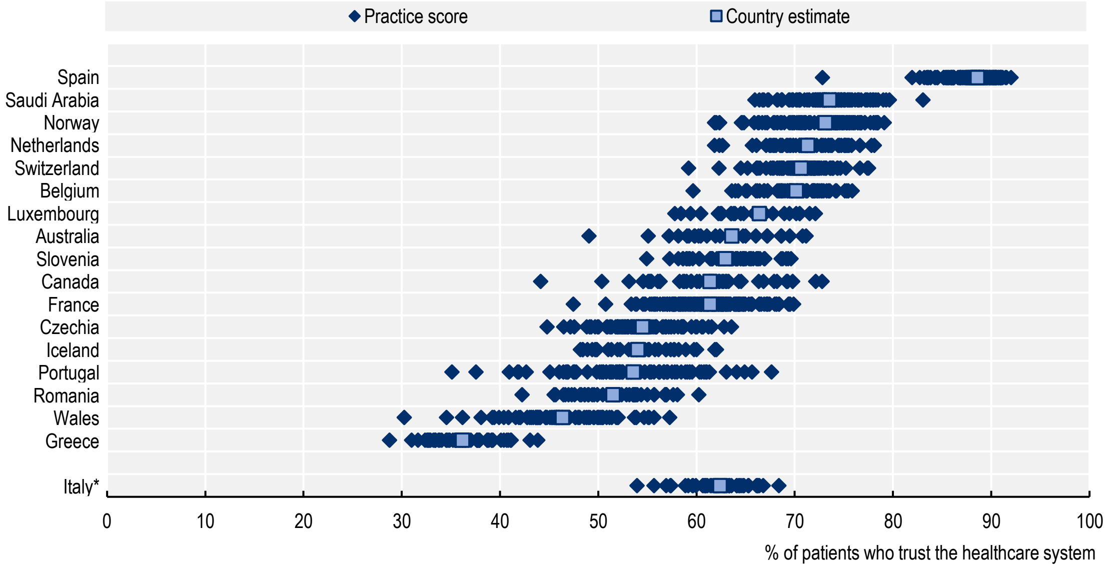
Figure 2.27. Trust in healthcare system – people with and without chronic conditions reporting positive experiences



Note: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. In Spain, the trust measure was asked specifically about trust in the primary care professionals within people's primary care practice. This variation might influence trust levels in Spain and limit comparability with other countries that refer to trust in the healthcare system more broadly. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. All within country differences between people with and without chronic conditions are not statistically significant ($p<0.05$).
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/mebugn

Figure 2.28. Trust in healthcare system – variation in experiences across primary care practices (people with chronic conditions)



Note: Excludes practices with less than ten respondents. Every dark dot represents a primary care practice. Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. In Spain, the trust measure was asked specifically about trust in the primary care professionals within people's primary care practice. This variation might influence trust levels in Spain and limit comparability with other countries that refer to trust in the healthcare system more broadly. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **Practice-level data for the United States are not available.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/w3z07d

Notes

[1] In Spain, the trust measure was asked specifically about trust in the primary care professionals within people's primary care practice. This variation might influence trust levels in Spain and limit comparability with other countries that refer to trust in the healthcare system more broadly.

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Annex 2.A. Sensitivity analyses and supplementary dashboards

Sensitivity analyses

Results shown in this chapter and throughout the report, unless explicitly stated, are age-sex standardised without any further case-mix adjustments. This approach is chosen to strike a balance between recognising the importance of case-mix, whilst avoiding overadjustment that risks masking cross-country performance differences that are amenable to policy.

To check the robustness of results for the PaRIS10 indicators to alternative model specifications, sensitivity analysis was conducted. The default model used with age-sex standardisation (Model A) was compared with an alternative model (Model B) that additionally adjusts for the prevalence in PaRIS survey respondents to the most common chronic condition groups, namely: high blood pressure; cardiovascular or heart conditions; diabetes (type 1 or 2); arthritis or ongoing problems with back or joints; breathing conditions (e.g. asthma or COPD); depression, anxiety, or other mental health conditions; and cancer (Annex Table 2.A.1). The assessment includes testing the statistically significant differences (at the 95% level) between country estimates based on the comparative intervals (Goldstein and Healy, 1995[10]).

Results were very close across the model specifications. Results with additional case-mix adjustment were slightly higher (better outcomes and experiences), but differences were not statistically different at the 95% level from results with only age-sex standardisation in almost all cases. Countries' relative position across the ten indicators was also almost always unchanged. The only statistically significant differences between Model A and Model B across the indicators were found for Saudi Arabia's general health and physical health measures. For general health, Saudi Arabia in Model B increased 3.5 percentage points, with no change in ranking, as compared to Model A. For physical health, Saudi Arabia increased 1.4 T-score metric points in the physical health indicator compared to model A, with an upward shift in four positions.

Further sensitivity analysis was also conducted for the PaRIS indicators that are single items using Likert scales: general health, social functioning, experienced quality, trust in healthcare system, confidence to self-manage. In particular, robustness checks were undertaken to compare results with a positive focus and those including the neutral option (Cullati et al., 2020[11]). Comparisons with the OECD-wide indicator on perceived health (for the population aged 15 years and over) also show strong and significant correlations with the PaRIS indicators on general health, physical health and mental health.

Annex Table 2.A.1. Dashboard for full sample, sensitivity analysis

Age and sex standardised plus additional case-mix adjustment for the seven most reported chronic conditions

Country	Patient-Reported Outcome Measures				Patient-Reported Experience Measures			
	Physical health	Mental health	Social functioning	Well-being	General health	Confidence to self-manage	Experienced quality	Trust in health system
Positive outcomes	≥ 42	≥ 40	Good, very good, excellent	≥ 50	Good, very good, excellent	Confident, very confident	Good, very good, excellent	Agree, strongly agree
OECD PaRIS	46	47	87%	62	71%	61%	87%	62%
Australia	49	49	86%	63	83%	66%	94%	65%
Belgium	46	46	88%	61	77%	64%	95%	70%
Canada	49	50	92%	65	90%	63%	94%	62%
Czechia	46	48	90%	60	68%	69%	95%	54%
France	45	47	93%	59	80%	93%	91%	61%
Greece	46	46	90%	60	75%	38%	74%	36%
Iceland	45	48	82%	65	69%	37%	74%	54%
Luxembourg	46	48	89%	62	77%	58%	93%	67%
Netherlands	47	47	84%	65	66%	79%	92%	71%
Norway	47	47	82%	63	65%	49%	91%	73%
Portugal	44	44	78%	58	49%	64%	70%	54%
Romania	42	44	77%	60	47%	44%	79%	51%
Saudi Arabia	48	53	95%	60	96%	74%	89%	74%
Slovenia	46	47	89%	60	64%	62%	88%	61%
Spain	45	47	85%	63	64%	70%	86%	89%
Switzerland	48	49	92%	65	82%	68%	97%	69%
Wales	45	47	78%	56	69%	54%	73%	47%
Italy*	45	45	81%	56	45%	24%	77%	62%
United States**	50	52	93%	67	91%	78%	93%	65%

🟦 Better than the OECD PaRIS average (statistically higher, at 1+ comparative interval above).
▨ Close to the OECD PaRIS average (not statistically different, within one comparative interval).
□ Worse than the OECD PaRIS average (statistically lower, 1+ comparative interval below).

Note: for five indicators, percentage values are shown, measuring the percentage of people reporting a positive outcome or experience (for example, patients reporting being in good, very good or excellent general health). For five indicators, the average respondent scale score is also shown, based on internationally validated scales. See Table 2.1 for more information on the cutoffs for positive responses and the scales used. Cells are colour-coded to show if values are statistically different to the OECD PaRIS average. In all cases, higher numbers indicate better performance. In Spain, the trust measure was asked specifically about trust in the primary care professionals within people's primary care practice. This variation might influence trust levels in Spain and limit comparability with other countries that refer to trust in the healthcare system more broadly.* Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older.

Source: OECD PaRIS 2024 Database.

Supplementary dashboards

Annex Table 2.A.2. Dashboard for full sample

Percentage of people reporting positive outcomes or experiences and average scores, for all primary care users aged 45+ (age-sex standardised results)

Country	Patient-Reported Outcome Measures					Patient-Reported Experience Measures		
	Physical health	Mental health	Social functioning	Well-being	General health	Confidence to self-manage	Experienced quality	Trust in health system
Positive outcomes	≥ 42	≥ 40	Good, very good, excellent	≥ 50	Good, very good, excellent	Confident, very confident	Good, very good, excellent	Agree, strongly agree
OECD PaRIS	46	47	85%	62	70%	61%	87%	63%
Australia	48	48	81%	61	77%	62%	94%	64%
Belgium	46	47	87%	62	77%	65%	95%	70%
Canada	48	49	89%	63	85%	61%	94%	62%
Czechia	47	48	89%	61	67%	70%	95%	55%
France	46	47	93%	60	80%	93%	91%	61%
Greece	46	46	89%	61	74%	39%	74%	37%
Iceland	45	48	80%	64	67%	37%	74%	54%
Luxembourg	46	48	88%	62	75%	58%	93%	67%
Netherlands	48	48	85%	67	70%	80%	92%	71%
Norway	48	48	83%	65	69%	50%	92%	74%
Portugal	43	43	75%	57	47%	63%	70%	54%
Romania	42	44	76%	60	46%	44%	79%	52%
Saudi Arabia	47	53	94%	59	93%	73%	89%	73%
Slovenia	47	48	90%	63	68%	64%	89%	62%
Spain	45	46	81%	62	60%	68%	85%	88%
Switzerland	48	50	92%	66	82%	69%	97%	70%
Wales	45	47	77%	55	67%	54%	72%	47%
Italy*	45	45	80%	57	43%	25%	78%	62%
United States**	48	51	89%	64	83%	75%	93%	65%

■ Better than the OECD PaRIS average (statistically higher, at 1+ comparative interval above).
▨ Close to the OECD PaRIS average (not statistically different, within one comparative interval).
□ Worse than the OECD PaRIS average (statistically lower, 1+ comparative interval below).
Note: for five indicators, percentage values are shown, measuring the percentage of people reporting a positive outcome or experience (for example, patients reporting being in good, very good or excellent general health). For five indicators, the average respondent scale score is also shown, based on internationally validated scales. See Table 2.1 for more information on the cutoffs for positive responses and the scales used. Cells are colour-coded to show if values are statistically different to the OECD PaRIS average. In all cases, higher numbers indicate better performance. For the indicators "Experienced co-ordination" and "Person-centred care", no data available for people without chronic conditions. In Spain, the trust measure was asked specifically about trust in the primary care professionals within people's primary care practice. This variation might influence trust levels in Spain and limit comparability with other countries that refer to trust in the healthcare system more broadly. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older.
Source: OECD PaRIS 2024 Database.

Annex Table 2.A.3. Dashboard for people without chronic conditions

Percentage of people reporting positive outcomes or experiences and average scores, for primary care users aged 45+ without chronic conditions (age-sex standardised results)

Country	Patient-Reported Outcome Measures (PROMs)					Patient-Reported Experience Measures (PREMs)		
	Physical health	Mental health	Social functioning	Well-being	General health	Confidence to self-manage	Experienced quality	Trust in health system
OECD PaRIS	52 (92%)	50 (94%)	94%	70 (86%)	91%	70%	89%	64%
Australia	53 (94%)	53 (93%)	91%	71 (89%)	94%	75%	95%	68%
Belgium	51 (93%)	49 (94%)	94%	69 (86%)	95%	71%	95%	72%
Canada	52 (92%)	52 (95%)	94%	70 (88%)	96%	72%	94%	65%
Czechia	52 (93%)	51 (96%)	96%	69 (87%)	91%	81%	96%	57%
France	50 (92%)	49 (96%)	98%	69 (86%)	97%	96%	92%	62%
Greece	51 (92%)	49 (92%)	96%	68 (83%)	94%	47%	78%	38%
Iceland	49 (89%)	51 (93%)	90%	72 (88%)	90%	46%	78%	53%
Luxembourg	51 (93%)	50 (95%)	95%	69 (84%)	94%	67%	94%	70%
Netherlands	54 (93%)	50 (94%)	94%	74 (92%)	91%	87%	93%	71%
Norway	53 (94%)	51 (94%)	93%	72 (90%)	91%	62%	93%	78%
Portugal	49 (86%)	46 (84%)	87%	67 (80%)	79%	73%	75%	57%
Romania	49 (86%)	48 (92%)	89%	71 (85%)	81%	57%	83%	53%
Saudi Arabia	53 (90%)	56 (98%)	98%	66 (75%)	98%	78%	90%	74%
Slovenia	51 (90%)	50 (93%)	95%	68 (84%)	87%	73%	90%	62%
Spain	51 (90%)	50 (96%)	93%	72 (89%)	89%	76%	87%	89%
Switzerland	52 (96%)	52 (98%)	97%	72 (90%)	96%	75%	97%	67%
Wales	52 (92%)	50 (92%)	94%	66 (83%)	94%	67%	76%	50%
Italy*	50 (91%)	47 (89%)	91%	65 (79%)	77%	29%	82%	63%
United States**	57 (95%)	56 (97%)	97%	75 (91%)	96%	87%	94%	67%

■ Better than the OECD PaRIS average (statistically higher, at 1+ comparative interval above).
▒ Close to the OECD PaRIS average (not statistically different, within one comparative interval).
□ Worse than the OECD PaRIS average (statistically lower, 1+ comparative interval below).
Note: for all indicators, percentage values are shown, measuring the percentage of people reporting a positive outcome or experience (for example, patients reporting being in good, very good or excellent general health). For five indicators, the average respondent scale score is also shown, based on internationally validated scales. See Table 2.1 for more information on the cutoffs for positive responses and the scales used. Cells are colour-coded to show if values are statistically different to the OECD PaRIS average. In all cases, higher numbers indicate better performance. For the indicators "Experienced co-ordination" and "Person-centred care", no data available for people without chronic conditions. In Spain, the trust measure was asked specifically about trust in the primary care professionals within people's primary care practice. This variation might influence trust levels in Spain and limit comparability with other countries that refer to trust in the healthcare system more broadly. *Data for Italy is for patients referred to medical specialists in an ambulatory care setting in Veneto, Tuscany and Emilia Romagna regions, these data are not fully comparable and should be interpreted with caution. **United States sample only includes people aged 65 years or older.
Source: OECD PaRIS 2024 Database.

Annex Table 2.A.4. Dashboard for people aged 65 and older with chronic conditions

Percentage of people reporting positive outcomes or experiences and average scores, for primary care users aged 65+ with chronic conditions (age-sex standardised results)

Country	Patient-Reported Outcome Measures (PROMs)					Patient-Reported Experience Measures (PREMs)				
	Physical health	Mental health	Social functioning	Well-being	General health	Confidence to self-manage	Experienced co-ordination	Person-centred care	Experienced quality	Trust in healthcare system
Positive outcomes	≥ 42	≥ 40	Good, very good, excellent	≥ 50	Good, very good, excellent	Confident, very confident	≥ 7.5	≥ 12.0	Good, very good, excellent	Agree, strongly agree
OECD PaRIS	45 (69%)	47 (85%)	83%	63 (75%)	63%	59%	8.6 (63%)	16.6 (87%)	88%	65%
Australia	47 (76%)	49 (85%)	83%	63 (75%)	76%	62%	10.3 (79%)	18.7 (96%)	95%	65%
Belgium	45 (70%)	47 (86%)	87%	64 (77%)	74%	64%	9.1 (69%)	18.0 (92%)	96%	71%
Canada	47 (79%)	50 (92%)	90%	66 (82%)	84%	60%	9.5 (74%)	12.4 (67%)	94%	64%
Czechia	45 (67%)	47 (86%)	85%	61 (73%)	54%	67%	9.5 (72%)	17.2 (90%)	95%	57%
France	44 (67%)	47 (90%)	91%	60 (71%)	75%	93%	9.0 (66%)	17.5 (93%)	92%	66%
Greece	45 (66%)	45 (77%)	84%	59 (66%)	62%	38%	7.3 (49%)	14.8 (79%)	76%	41%
Iceland	44 (68%)	48 (87%)	80%	66 (80%)	62%	32%	6.6 (39%)	15.4 (81%)	78%	57%
Luxembourg	46 (74%)	48 (90%)	86%	64 (77%)	72%	56%	9.1 (71%)	17.4 (92%)	94%	70%
Netherlands	46 (71%)	47 (87%)	82%	68 (83%)	60%	77%	7.6 (53%)	17.1 (92%)	94%	73%
Norway	47 (76%)	48 (86%)	83%	67 (83%)	64%	44%	7.9 (55%)	16.5 (88%)	93%	73%
Portugal	42 (54%)	43 (68%)	70%	58 (66%)	35%	61%	7.5 (50%)	15.1 (77%)	70%	56%
Romania	39 (43%)	42 (67%)	71%	56 (60%)	35%	36%	10.3 (78%)	17.0 (90%)	79%	56%
Saudi Arabia	43 (56%)	51 (89%)	83%	56 (59%)	87%	70%	6.7 (42%)	15.8 (86%)	89%	73%
Slovenia	46 (75%)	47 (86%)	87%	63 (75%)	55%	63%	8.5 (62%)	16.9 (87%)	89%	70%
Spain	43 (55%)	46 (81%)	76%	60 (68%)	48%	68%	8.9 (68%)	16.9 (87%)	87%	90%
Switzerland	48 (84%)	50 (94%)	92%	69 (86%)	77%	66%	10.7 (85%)	19.4 (98%)	98%	73%
Wales	43 (58%)	47 (80%)	74%	57 (65%)	59%	51%	5.3 (25%)	14.2 (69%)	75%	48%
Italy*	43 (61%)	45 (75%)	73%	56 (63%)	34%	23%	9.8 (75%)	16.4 (87%)	79%	63%
United States**	47 (75%)	51 (91%)	88%	66 (79%)	79%	74%	9.6 (74%)	18.7 (96%)	94%	67%

■ Better than the OECD PaRIS average (statistically higher, at 1+ comparative interval above).
▒ Close to the OECD PaRIS average (not statistically different, within one comparative interval).
□ Worse than the OECD PaRIS average (statistically lower, 1+ comparative interval below).

Note: for all indicators, percentage values are shown, measuring the percentage of people reporting a positive outcome or experience (for example, patients reporting being in good, very good or excellent general health). For five indicators, the average respondent scale score is also shown, based on internationally validated scales. See Table 2.1 for more information on the cutoffs for positive responses and the scales used. Cells are colour-coded to show if values are statistically different to the OECD PaRIS average. In all cases, higher numbers indicate better performance. In Spain, the trust measure was asked specifically about trust in the primary care professionals within people's primary care practice. This variation might influence trust levels in Spain and limit comparability with other countries that refer to trust in the healthcare system more broadly. *Data for Italy is for patients referred to medical specialists in an ambulatory care setting in Veneto, Tuscany and Emilia Romagna regions, these data are not fully comparable and should be interpreted with caution. **United States sample only includes people aged 65 years or older.
Source: OECD PaRIS 2024 Database.

3

Living with multiple chronic conditions

Living with multiple chronic conditions presents significant challenges for both people and healthcare systems. It requires comprehensive, co-ordinated, and continuous care, ideally provided by primary care to address the physical, mental, and social impacts. PaRIS data show that 80% of primary care users aged 45+ live with at least one chronic condition, and more than half have two or more. People with multiple conditions experience a worse quality of life and take multiple medications. Around 70% of these individuals use at least three medications regularly, with over a third using four or more, increasing the risk of patient safety issues and complex self-management. The type of chronic conditions also matters; mental health conditions alongside other chronic diseases worsen outcomes and experiences. This chapter highlights the vital role of primary care in supporting patients with multiple chronic conditions through interventions such as self-care, care co-ordination, communication, and medication reviews.

In Brief

What PaRIS data tell us about people living with multiple chronic conditions

- While healthcare policy, research, professional training and clinical guidelines have traditionally focused on single diseases, **PaRIS results stress that multimorbidity – people living with two or more chronic conditions – is a massive challenge in healthcare, particularly in primary care.** As people live longer, they might increasingly live with (multiple) chronic conditions. More than half (54%) of the adults in PaRIS live with at least two chronic conditions, and about three out of ten (29%) with three or more. Multimorbidity is now the norm rather than the exception and has become the core business of many primary care professionals. Managing these conditions is far more complex and resource-intensive than dealing with a single illness, putting pressure on healthcare systems and healthcare professionals to deliver high-quality, co-ordinated, people-centred care. These findings highlight the need for a shift from disease-specific approaches to more people-centred care.
- **Living with multiple chronic conditions often means taking numerous medications, creating significant challenges and risks for patients.** The more conditions a person has, the more complex and riskier their medication regimen becomes. This increases the likelihood of medication safety incidents and makes self-management more complex. Among people with multiple chronic conditions in PaRIS, over 65% take at least three different medications on a regular or ongoing basis, and more than 30% take four or more. These findings highlight the urgent need for safer, more co-ordinated care for people managing multiple conditions and for better collaboration between patients and healthcare professionals such as family doctors, pharmacists, nurses and other specialists.
- **People living with multiple chronic conditions have a lower quality of life**. PaRIS data show that in all countries, people with two chronic conditions report worse physical and mental health, and fewer of them report good social functioning than people with one chronic condition. People with three or more chronic conditions have even worse health and fewer report having good social lives. While there are large differences in how people report their social lives in relation to the number of chronic conditions, these differences are not observed in physical and mental health.
- **Mental health is a critical factor in the management of multiple chronic conditions, and its impact on people's social lives requires greater attention.** People living with both a mental health condition and another chronic condition report poorer physical health. This pattern is consistent across countries. However, people with multiple chronic conditions are more likely to report good social functioning if they do not have a mental health condition compared to those who do. This difference highlights the importance of integrating mental health care and social support into chronic disease management in primary care. By addressing both physical and mental health together, and co-ordinating social care, healthcare systems can manage patients with multiple chronic conditions more effectively and improve overall outcomes.

- **Well-designed primary care has the potential to improve the health and quality of life of people with multiple chronic conditions.** Primary care plays a crucial role in managing the care for people with chronic conditions, making it a natural setting for implementing strategies and interventions to improve care co-ordination, such as medication reviews and self-management support. PaRIS results show that people with multiple chronic conditions experience better co-ordination of care when they have had a medication review, which means that they discussed with a healthcare professional all the medication that they take. This relationship is even more prominent among people with three or more chronic conditions. About 70% of people with multiple chronic conditions report that they had a medication review over the past year. This varies widely across countries from over 85% in Switzerland, the United States and Czechia to under 50% in Iceland and Slovenia.
- **People with multiple chronic conditions often have more complex needs that may not be fully addressed in healthcare systems designed for single diseases, where time constraints and fragmented care models can limit the ability to provide comprehensive, person-centred care**. PaRIS results highlight that scheduling more than 15 minutes for regular or follow-up consultations with primary care professionals and having a relationship of more than five years with the same care provider significantly improved the odds of experiencing better quality of care, by 21% and 30%, respectively. These results underline the importance of giving people with multimorbidity adequate time to address their concerns and ensure thorough care.

Conventional healthcare is primarily organised around single conditions, organ systems and specialties, with healthcare settings often siloed, and clinical guidelines focusing on single diseases while overlooking patient goals. Consequently, people living with multiple (two or more) chronic conditions often experience a lack of co-ordination (Sherman, 2021[1]). They often visit multiple care professionals for different problems at multiple health and social care settings (Koch, Wakefield and Wakefield, 2014[2]), leaving them more vulnerable to receiving multiple, uncoordinated and potentially conflicting recommendations and care options. This can lead to low-quality, unsafe care. The growing patient population who live with multiple chronic conditions challenges the conventional strategies of patient care and pressures healthcare systems to adapt to continue providing high-quality safe care (Moody et al., 2022[3]).

3.1. The state of health and well-being of people living with multiple chronic conditions

Table 3.1 shows the state of health and well-being of people living with multiple chronic conditions on the selected key PROMs indicators (well-being, physical health, mental health and social functioning) (Box 3.1).

People with multiple chronic conditions have worse well-being with an average of 56 on the WHO-5 Well-being Scale (degree to which a person feels positive in terms of their mood, vitality and fulfilment), ranging from 62 in the Netherlands and Switzerland to 48 in Wales (United Kingdom). In all participating countries, people with multiple chronic conditions reported less favourable physical health outcomes (ability to carry out every day physical activities, degree of pain and fatigue) with a cross-country range of 39-46, with Portugal, Romania, Spain and Wales being below the good fair cut off point (42). In all countries, the mental health (perception of quality of life, mood and ability to think, satisfaction with social activities and relationships, emotional distress) of people with two or more chronic conditions was above the good-fair cut off point (40), with an OECD PaRIS average of 46. While most people living with multiple chronic conditions (80%) report good social functioning (extent to which a person can carry out their usual social activities and roles), the variation in social functioning is prominent (cross-country range of 65-92).

Variations across countries call for further assessment of health and quality of life in people with multiple chronic conditions and the factors influencing the outcomes and experiences of care.

This chapter presents how people living with multiple chronic conditions perceive their health outcomes, well-being and their experience of care in the PaRIS survey. First, the chapter shows how outcomes and experiences of care of people with two and three or more chronic conditions vary across countries and how these results compare to people with one chronic condition. Second, it also assesses how certain combinations of chronic conditions influence the health outcomes and healthcare experiences among people with multiple chronic conditions. Third, the chapter shows which features of primary care correlate with better outcomes and care experiences of people living with multiple chronic conditions and how the provision of primary care varies across countries. It concludes with policy and practice recommendations to enhance the quality of care for people with multiple chronic conditions.

Table 3.1. The state of health and well-being of people living with multiple chronic conditions

	Well-being	Physical health	Mental health	Social functioning
OECD PaRIS	56.44	43.17	45.78	80.26
Australia	56.31	45.12	46.63	76.30
Belgium	56.07	42.72	45.01	80.96
Canada	59.08	45.26	47.60	84.68
Czechia	56.84	43.76	46.54	85.33
France	53.68	42.37	45.09	88.27
Greece	54.08	42.81	43.78	82.15
Iceland	59.61	42.05	45.78	72.99
Luxembourg	57.27	43.51	46.22	82.16
Netherlands	61.65	44.15	45.95	77.35
Norway	58.77	44.22	45.65	74.29
Portugal	52.00	40.70	41.60	68.55
Romania	54.91	39.19	42.63	71.39
Saudi Arabia	56.89	44.26	51.65	91.59
Slovenia	57.25	44.02	45.48	84.73
Spain	56.03	41.47	44.70	74.26
Switzerland	61.50	45.39	47.84	86.69
Wales	48.00	40.85	43.98	65.42
Italy[1]	52.42	42.20	43.74	73.56
United States[2]	59.92	46.11	49.87	86.08

Note: WHO-5 well-being index. Response to five questions measuring well-being. Raw scale 0-25 converted to 0-100 scale with 0 being the lowest possible well-being and 100 the highest, and a good-fair cutoff of 50. PROMIS® Scale v1.2 – Global Health component for physical health is a T-score metric with a range of 16-68, and a good-fair cutoff of 42, higher values represent better physical health. PROMIS® Scale v1.2 – Global Health component for mental health is a T-score metric with a range of 21-68, and a good-fair cutoff of 40, higher values represent better mental health. PROMIS® Scale v1.2 – Global Health item on social functioning. Percentage of patients that responded good, very good or excellent (as compared to fair or poor) to the question: "In general, please rate how well you carry out your usual social activities and roles [further specified in questionnaire]".

1. Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions.

2. United States sample only includes people aged 65 years or older.

Source: OECD PaRIS 2024 Database.

Box 3.1. Measurement and definition of multimorbidity in this report

Multiple chronic conditions (multimorbidity) refers to the presence of two or more chronic conditions in an individual. The presence of chronic conditions among PaRIS respondents was measured through self-reporting. While we refer throughout the report to people with one, two, three or more chronic conditions, or people with multiple chronic conditions, the method may underestimate the prevalence of multimorbidity in cases where people have multiple conditions falling into the same category. To avoid overestimation in the number of chronic conditions for some respondents who may report higher than actual diagnoses, respondents were specifically asked to report conditions that they were “told by a doctor”.

3.2. Multimorbidity increases the burden on people, healthcare systems and societies

Managing multiple chronic conditions is often more complex and resource-intensive than managing a single condition, posing greater challenges for patients, healthcare professionals and healthcare systems alike. It typically requires frequent and longer medical appointments with multiple healthcare professionals, which significantly disrupt patients’ daily lives and work. This leads to greater societal costs, including productivity losses due to missed workdays. Healthcare systems face dual challenge of providing high-quality care for multimorbidity care while also shouldering the economic and societal burden it represents (Tran et al., 2022[4]).

> *“The main difficulty derives from the fact that I have to visit more than one doctor, doctors of different specialty. This costs me energy, money and time, because I have to change my work/daily routine.”*
>
> *Zoe, 67 years old, divorced woman, living with severe osteoporosis, asthma and Paget disease*

The economic burden on health systems of multimorbidity is considerable. In Switzerland average healthcare costs were approximately six times higher for older adults with multimorbidity than for those without any chronic conditions. In Ontario, Canada, people living with multiple chronic conditions accounted for 68% of total healthcare costs while only representing 24% of the population (Thavorn et al., 2017[5]). In the United States, annual Medicare payments for beneficiaries ranged from USD 7 172 for people with one chronic condition to USD 14 931 for people with two chronic conditions and USD 32 498 for people with three or more chronic conditions (Schneider, O’Donnell and Dean, 2009[6]). In the United Kingdom, people with multimorbidity were found to use healthcare services 2.56 times more than people with one or no chronic conditions, while the odds of unplanned, preventable hospitalisations go up to 14.38 times for people with four or more chronic conditions compared to those without any chronic condition (Soley-Bori et al., 2020[7]).

Multimorbidity impacts society at large, leading to increased emotional, physical, and financial burdens among people living with chronic conditions, their caregivers and families. Indirect costs, including productivity losses from sick days, rise as the number of chronic conditions increases. Multimorbidity can significantly reduce work productivity by increasing absenteeism rates (Fouad et al., 2017[8]). In a population study of US adults, having multiple chronic conditions increased the average missed workdays due to illness by 3-9 days in a year (Ward, 2015[9]). In another study, the average missed workdays accounted for twice among those with four and more chronic conditions on 14.5 days compared to 7.4 days among those with two or three chronic conditions. In addition, certain disease combinations result in more missed workdays. For example, adults with arthritis/diabetes/heart disease and diabetes/heart disease missed more workdays compared to those with arthritis/hypertension (Meraya and Sambamoorthi, 2016[10]). Conversely, the combinations of diabetes/hypertension had lower missed workdays compared to arthritis/hypertension.

> *"Living with multiple chronic conditions profoundly impacts my overall well-being, mental health, work, and social life. Managing various health issues often leads to physical fatigue and emotional stress, which can be overwhelming. The constant need for medical appointments and medication management can disrupt my work routine and reduce my productivity. This uncertainty can also lead to anxiety about my health, making it difficult to focus and engage fully at work."*
>
> *Betsy, 68 years old, female, living with multiple chronic conditions, including obesity, dedicated caregiver for her husband, who is battling cancer, and for her daughter, who has Type 1 diabetes and chronic kidney disease*

The high burden of multimorbidity on people, healthcare, economies and societies stress the need for ensuring good quality safe care for people living with multiple chronic conditions. If managed well and given the tools to self-manage, people with multiple chronic conditions can also be productive and contribute to healthier societies. Healthcare systems can enhance the physical health, mental health and social lives of those living with multiple chronic conditions, as well as their experiences with healthcare services. To do so, policy makers need information about health and quality of life of people with multiple chronic conditions and the characteristics of healthcare that influence the outcomes and experiences of those living with multiple chronic conditions.

> *"My life has been affected by numerous health problems and personal tragedies. After a difficult divorce and the trauma of my mother's death (suicide), I discovered a tumour in my breast in 2010, which led to chemotherapy and surgery. A BRCA1 genetic mutation led me to a hysterectomy in 2012, which brought further complications, including thinning bones. In 2013, I had a preventative removal of my second breast. This was followed by thyroid problems and tongue cancer, which led to further surgery and radiation. In 2020, a recurrence of breast cancer occurred, followed by surgery and proton therapy. During this period, I also faced the death of my father, who committed suicide. I am now dealing with long-term physical effects such as mobility issues, pain and dry mouth, which require constant care and therapy."*
>
> *Nikola, 48 years old, female, has a history of breast and tongue cancer*

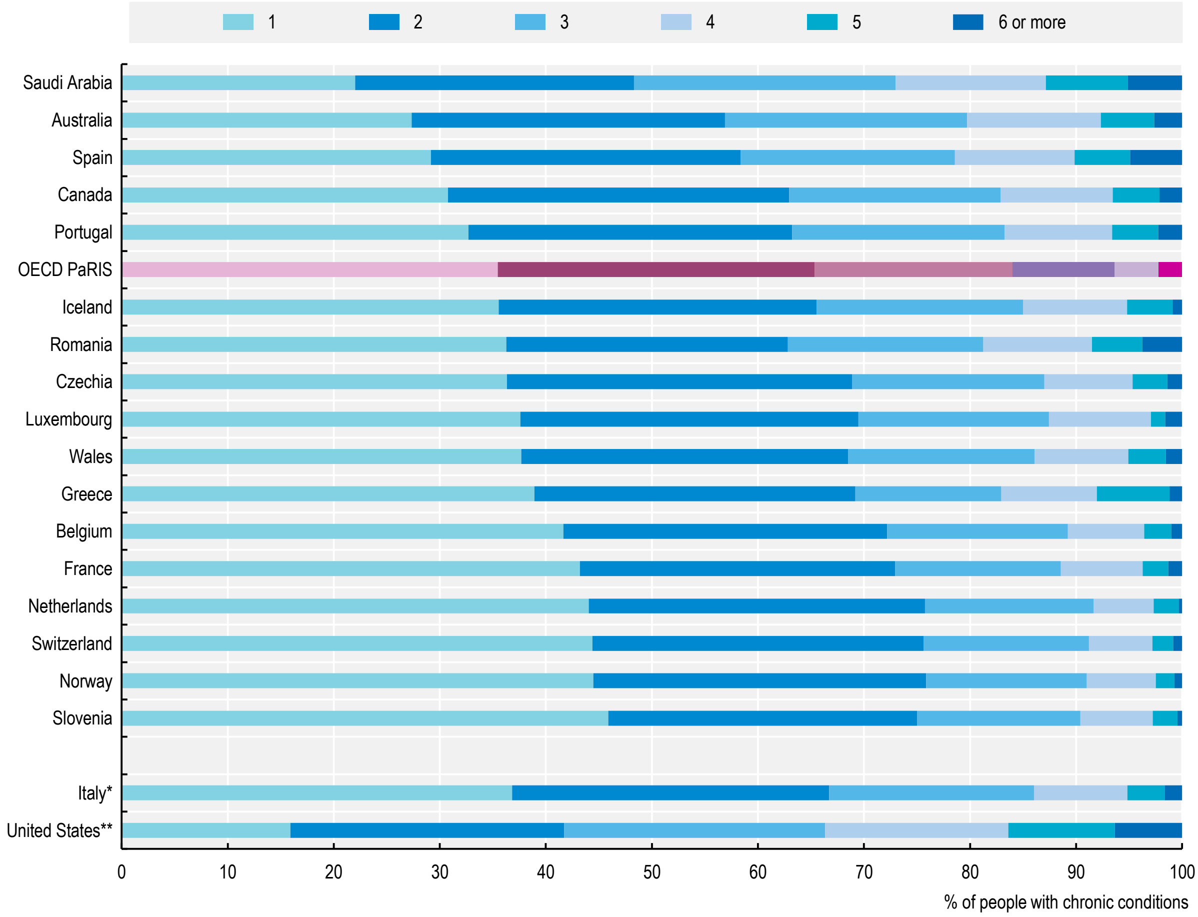
3.3. Multimorbidity is becoming the norm rather than the exception in primary care

Eight out of ten people (81%) aged 45 years and older using primary care services in the past six months report living with at least one chronic condition (Chapter 2) and 52% with two or more.

Most frequently reported chronic conditions were hypertension (53% with a cross-country range of 44-66%), arthritis or ongoing problem with back or joints (36% with a cross-country range of 23-60%), cardiovascular conditions (21% with a cross-country range of 15-41%) and diabetes (21% with a cross-country variation of 12-54%). On average, 15% of people with chronic conditions report having depression, anxiety or other mental health condition, varying from 8% to 31% across countries.

Among people living with chronic conditions, more than six out of ten (64%) reported having two chronic conditions or more (Figure 3.1). Around 35% reported having three or more chronic conditions, indicating that multimorbidity has become the norm rather than the exception in primary care, and underscoring the need for healthcare systems and healthcare professionals to be adequately equipped to manage patients with multiple chronic conditions.

Figure 3.1. More than six out of ten primary care users of 45 years and older with chronic conditions report living with multiple chronic conditions



Note: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions.
**United States sample only includes people aged 65 years or older.
Source: OECD PaRIS 2024 Database.

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A cumulation of chronic conditions goes hand in hand with a high number of medicines. People living with multiple chronic conditions typically are prescribed numerous medications and usually consult different healthcare professionals in various healthcare settings.

PaRIS results show that above 70% of people with multiple chronic conditions take at least three different medicines on a regular or ongoing base, and above 35% take four medicines or more. Taking multiple medications makes people vulnerable to unsafe care due to side effects, negative medicine interactions, and increases treatment burden and complexity of self-management (de Bienassis et al., 2022[11]).

> *"It is challenging to manage several conditions and being a carer of a disabled child as my anxiety can take a toll on all my health conditions. I take three medications for my heart, two for the allergy, and two for the acute pains."*
>
> *Lana, identifies herself as a person of colour, 45 years old, female, mother of two boys*

3.3.1. People with multiple chronic conditions are at risk of worse quality of life

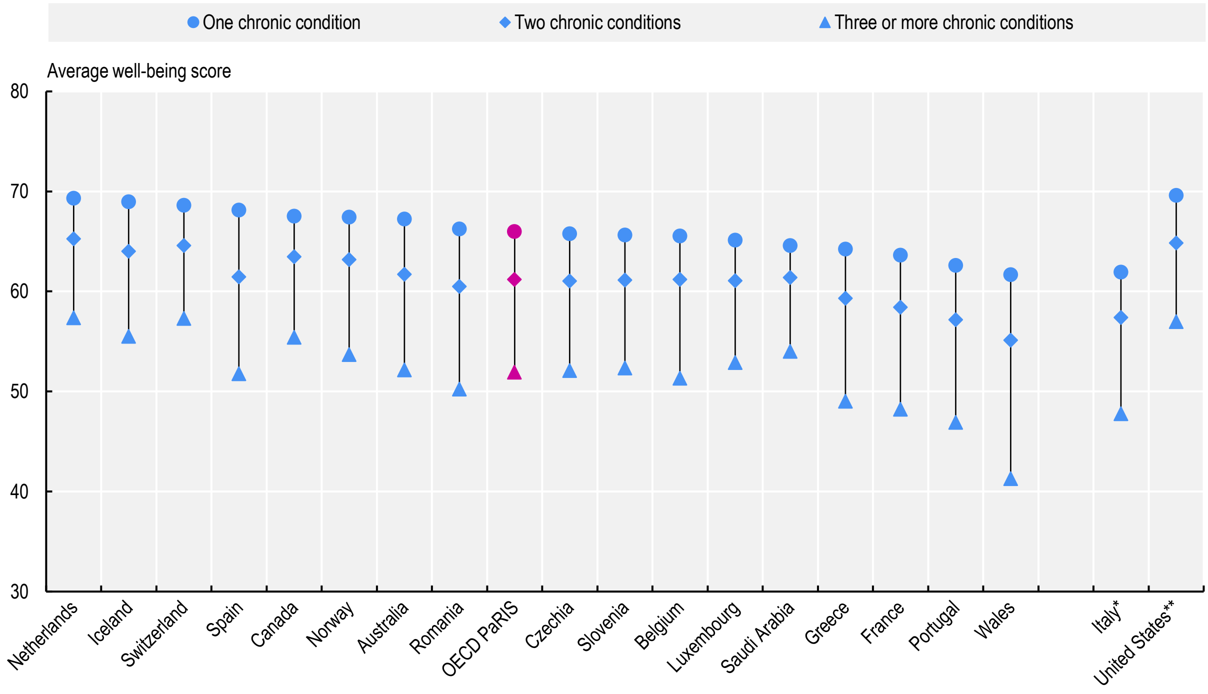
Living with multiple chronic conditions leads to worse health and well-being (Makovski et al., 2019[12]). PaRIS data show that patient-reported outcomes of people living with multiple chronic conditions differ from those who live with one chronic condition. This pattern underscores the compounded health burdens experienced by people with multiple chronic conditions, highlighting the escalating impact of each additional chronic condition on health and well-being.

Well-being decreases with an additional chronic condition

People with two or more chronic conditions report worse well-being than those with one condition (Figure 3.2). The WHO-5 well-being scores show a significant decline as the number of chronic conditions increases. The psychological toll of multiple chronic conditions can lead to feelings of frustration, helplessness, and social isolation, further impacting overall well-being (Sand et al., 2021[13]).

Across PaRIS countries, the mean score on the WHO-5 well-being score (a scale from 0 to 100) was five points lower among people with two chronic conditions and 14 points lower among people with three or more chronic conditions compared to people with one chronic condition. Between people with two chronic conditions and people with one chronic condition, the variation across countries was minor, ranging from seven points in Wales and Spain to three points in Saudi Arabia. However, the difference in average scores between people with one chronic condition and those with three or more chronic conditions was above 15 points in Spain, Romania, Portugal and Wales.

Figure 3.2. Well-being decreases with each additional chronic condition



Note: WHO-5 well-being index. Response to five questions measuring well-being. raw scale 0-25 converted to 0-100 scale, higher scores represent higher well-being. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between one and two or more chronic conditions are statistically significant ($p<0.05$) for all countries except US population.
Source: OECD PaRIS 2024 Database.

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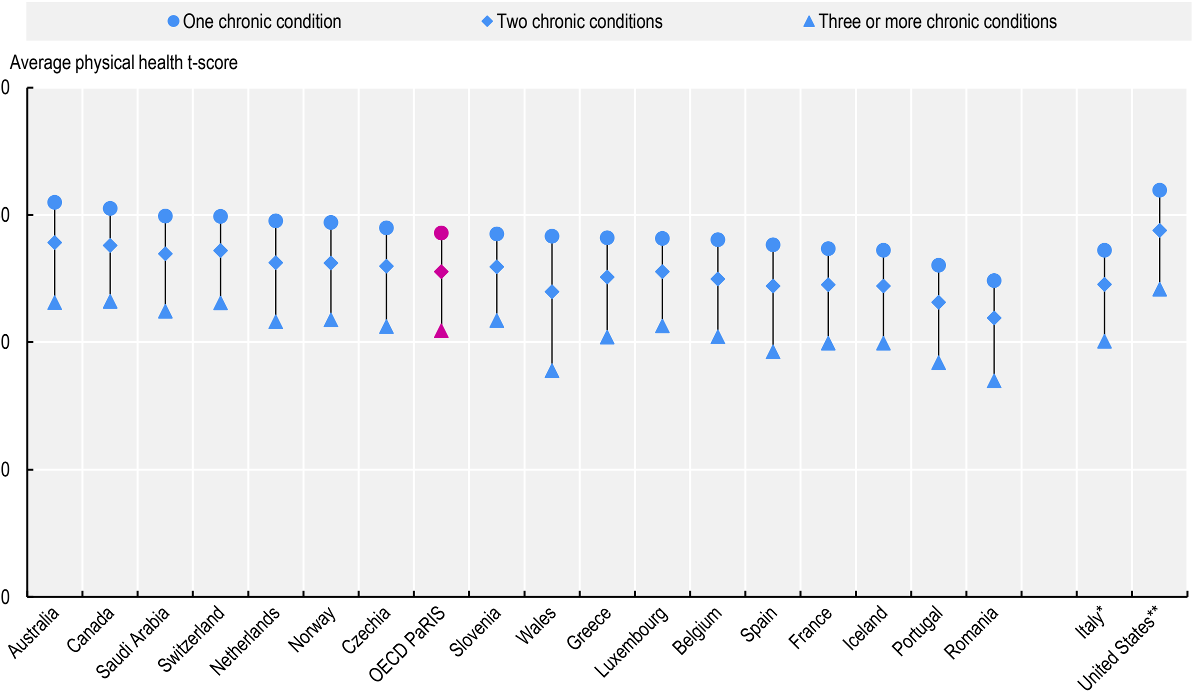
In all countries people with multiple chronic conditions report worse physical health than people with one chronic condition

The decrease in physical health can be attributed to the compounded effects of multiple chronic conditions. Each additional condition introduces new symptoms, management requirements, and physical limitations, making it increasingly difficult for people to maintain their physical health. For example, a person with type II diabetes and severe arthritis may struggle with mobility issues and blood glucose management, leading to further physical decline and reduced overall functioning.

People with multiple chronic conditions report worse physical health compared to people living with one chronic condition (Figure 3.3). People with three or more chronic conditions are even less likely to report good physical health compared to those with two chronic conditions. The difference between people with one and two chronic conditions was about three to four, showing little variations across countries. In most countries except in Australia, Canada, Saudi Arabia, Switzerland and the United States, the physical health of people with three or more chronic conditions was below good-fair cutoff (42).

Figure 3.3. People with multiple chronic conditions report poorer physical health



Note: PROMIS® Scale v1.2 – Global Health component for physical health is a T-score metric with a range of 16-68, and a good-fair cutoff of 42, higher values represent better physical health. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between one and three or more conditions are statistically significant ($p<0.05$) for all countries.
Source: OECD PaRIS 2024 Database.

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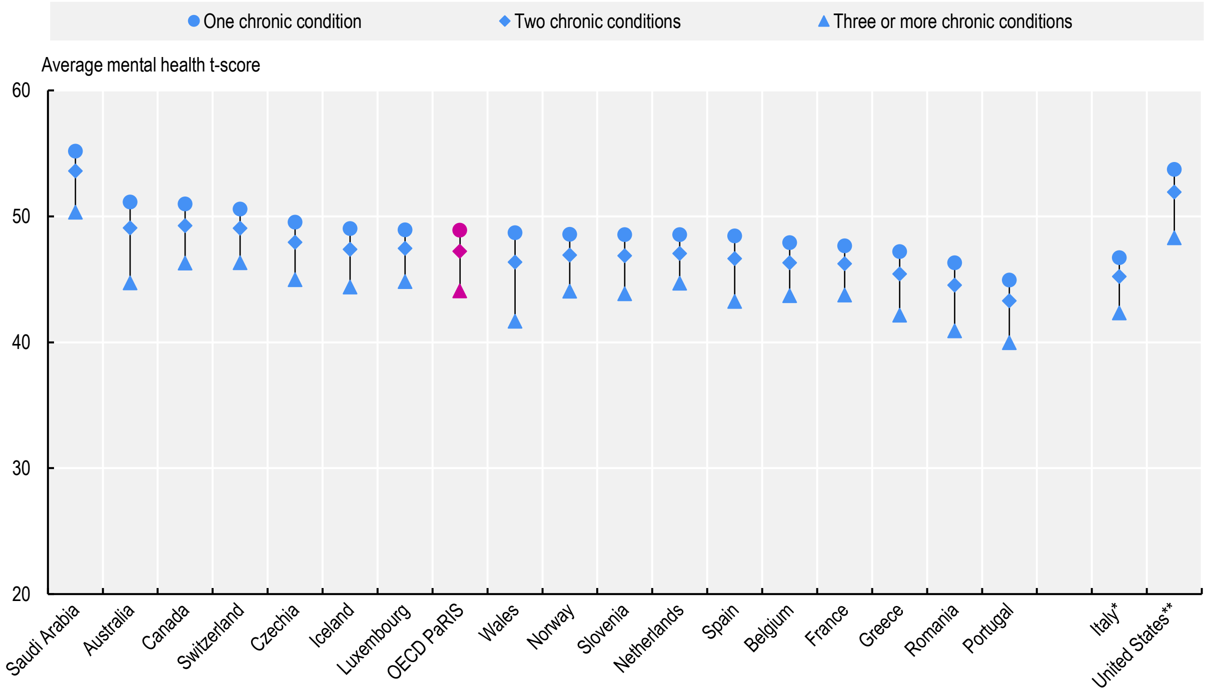
People with multiple chronic conditions are more likely to report worse mental health

Mental health scores show a significant decline with an increasing number of chronic conditions. The lower scores in mental health might reflect the heightened stress, anxiety, and depression associated with having multiple chronic conditions. PaRIS results show that people with one chronic condition have better mental health compared to those with multiple conditions, with the lowest scores observed in those with three or more conditions in all countries (Figure 3.4). Nevertheless, in all countries but Portugal, the average mental health score of people with three and more conditions stayed above the good-fair cutoff point (40).

> *"I was diagnosed with uncontrollable hypertension at the age of 30, which is genetically influenced due to strong family history of diabetes, hypertension, asthma and arthritis. My current diagnoses are uncontrollable hypertension, pre-diabetes, arthritis, chronic back aches (lived with acute pains for 13 years now), severe allergic rhinitis, and lived experience of mental health issues. I visit my GP every few months and must undergo blood tests and urine tests to check my liver and kidney function on an annual basis. I also suffer from myopia, but this is a very common diagnosis. My concern is my mental health, which affect the hypertension, because I am the primary carer of my son, who is diagnosed with autism spectrum disorder and intellectual disability. My phyco-social well-being is poor and as a result I do not work."*
>
> *Lana, identifies herself as a person of colour, 45 years old, female, mother of two boys*

Figure 3.4. People with multiple chronic conditions are report worse mental health on average



Note: PROMIS® Scale v1.2 – Global Health component for mental health is a T-score metric with a range of 21-68, and a good-fair cutoff of 40, higher values represent better mental health. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between one and three or more conditions are statistically significant ($p<0.05$) for all countries.
Source: OECD PaRIS 2024 Database.

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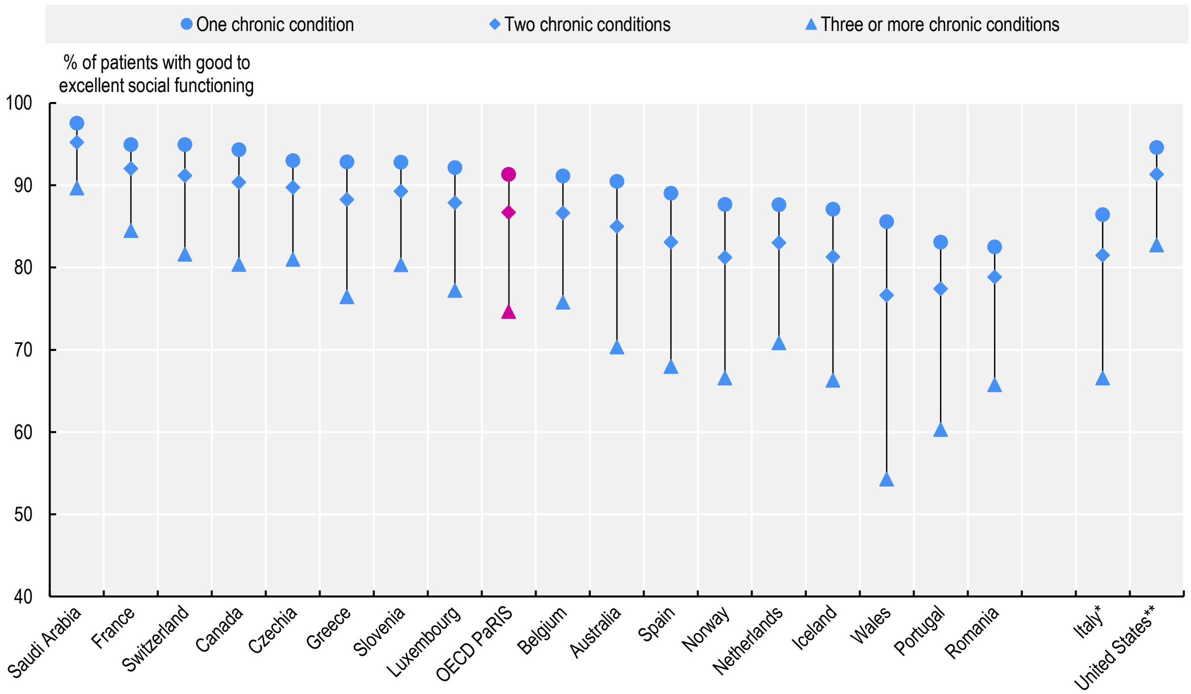
Fewer people with multiple chronic conditions report good social functioning on average, and the gap between people with one and those with more conditions differs more than two-fold across countries

PaRIS results reveal that people with multiple chronic conditions less often report good social functioning (Figure 3.5). This underscores the impact of multiple chronic conditions on an individual's ability to engage in social roles and activities. This can be attributed to several factors associated with chronic conditions. Physical limitations and fatigue caused by multiple conditions can hinder participation in social activities. For example, a person with severe arthritis and diabetes might find it challenging to attend social gatherings due to pain and the need for frequent blood glucose monitoring.

> *"Having more than one chronic disease makes me feel insecure; there are many times when I am thinking of having a more active social life, but then I am thinking of the possible dangers I may face, and I postpone every plan. I feel that I am always thinking about my health, and that's the biggest impact in my life. Also, since I am a 67 divorced woman, my greatest fear is that things will become even harder for me in the future."*
>
> *Zoe, 67 years old, divorced woman living with severe osteoporosis, asthma and Paget disease*

On average, the difference between the percentage of people with two chronic conditions and one chronic condition who rated their social functioning as good, very good, or excellent was 5 percentage points. The difference among people with one and three or more chronic conditions was more than two-fold ranging from 10% or less in France and Saudi Arabia to 20% and above in Australia, Spain, Norway, Iceland, Wales and Portugal.

Figure 3.5. Fewer people with multiple chronic conditions report good social functioning, and the gap is more than two folds across countries



Note: PROMIS® Scale v1.2 – Global Health. Answer to the question: "In general, please rate how well you carry out your usual social activities and roles [further specified in questionnaire]", "good, very good or excellent" versus "fair or poor". *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between people with one and three or more chronic conditions was statistically significant (p<0.05) in all countries.
Source: OECD PaRIS 2024 Database.

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> *"I feel very vulnerable because I have Hashimoto, osteoporosis and hypertension. I think that these health problems impact my social life, and I always feel insecure that I will face a crisis of one of these health problems and that will make my daily life even more difficult."*
>
> *Lucy, 55 years old, divorced woman with osteoporosis, Hashimoto/thyroid, hypertension*

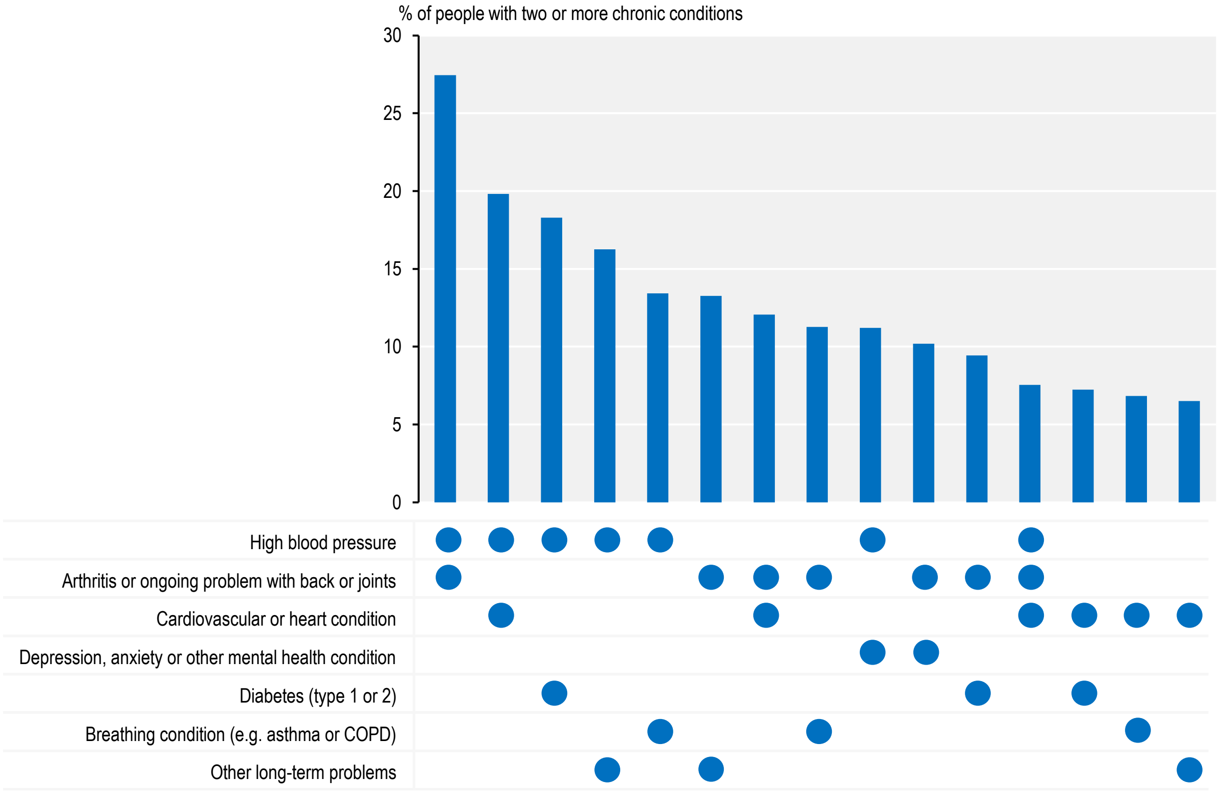
3.4. It is not only how many, but also which combinations of conditions people live with

Combinations of diseases are as important as the total number of chronic conditions. Certain combinations of chronic conditions lead to higher healthcare costs (Tran et al., 2022[4]), highlighting the need for targeted policy interventions. For instance, having a mental condition alongside cancer increases healthcare costs up to six times compared to other condition dyads (i.e. combination of two chronic conditions) such as hypertension and back pain. Some combinations are highly prevalent with any dyad involving hypertension cover more than half of the adult population (Tran et al., 2022[4]). Understanding the health and well-being trends in specific disease groups is crucial to ensuring high-quality care for people living with multiple chronic conditions.

The PaRIS data highlight the high prevalence of certain chronic conditions occurring together, particularly those involving hypertension, arthritis, cardiovascular disease, and mental health, underscoring the need for integrated care models to address these overlapping health concerns. Among people with chronic conditions, the most common combination is arthritis with hypertension, affecting 27% of the population. This pairing is particularly important to address as arthritis and other musculoskeletal problems might associate with worse physical functioning and well-being than other chronic conditions, thus less participation in social activities (Cheng et al., 2019[14]). This is followed by cardiovascular disease with hypertension at 20% and diabetes with hypertension, at 18%.

Figure 3.6. Most people with chronic conditions reported having hypertension in addition to arthritis, cardiovascular disease, diabetes and breathing or mental health conditions

Percentage of most common combinations of chronic conditions among people with two or more conditions



Source: OECD PaRIS 2024 Database.

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To explore variations in health and quality of life of people with different types of multiple chronic conditions, the conditions in this chapter are grouped into three categories *concordant conditions*, *discordant conditions* and *mental health group* (See Box 3.2 for definitions).

Box 3.2. Combinations of chronic conditions in this chapter

The combinations of chronic conditions in this chapter were analysed in three categories:

- **Concordant conditions** include commonly occurring conditions that share similar genetic, behavioural, or environmental pathways. In PaRIS, this group includes two or more chronic conditions of high blood pressure, cardiovascular or heart condition, diabetes and chronic kidney disease, **excluding other conditions (e.g. arthritis, mental health)**. For example, a patient with type II diabetes, chronic kidney disease and ischaemic heart disease would be in this group.
- **Discordant conditions** include a varied assortment of individual conditions that are not explained by a common mechanism. In PaRIS, the discordant conditions group includes two or more chronic conditions, with at least one being one of the following: arthritis, breathing conditions, Alzheimer's disease, neurological diseases, chronic liver disease and cancer, **excluding mental health**. This group includes any chronic conditions in the PaRIS survey except mental health conditions. For example, a patient with arthritis, chronic kidney disease, and type II diabetes, or a patient with arthritis and asthma, would fall into this group.
- **The mental health group** includes two or more chronic conditions of which at least one being a mental health condition. The other chronic condition(s) can be any, including those from the concordant and discordant groups. For example, a patient with congestive heart failure, chronic kidney disease, and depression, or a patient with neurological disease, heart disease, and anxiety, would be classified in this group.

Measurement of chronic condition clusters in PaRIS

Chronic condition clusters in PaRIS were developed based on a rapid review of the literature, expert input, and the availability of condition categories in the PaRIS patient questionnaire. Some chronic conditions could belong to different clusters depending on their underlying causes. For instance, chronic kidney disease may result from type II diabetes or a congenital disorder. In the case of type II diabetes, the condition would fall into the "concordant" group, while a congenital cause would place it in the "discordant" group. However, the PaRIS had limitations in distinguishing these causes, and such nuances should be carefully considered when interpreting the results.

Source: Whitty, C. et al. (2020[15]), "Rising to the challenge of multimorbidity", https://doi.org/10.1136/bmj.l6964; Stokes, J. et al. (2017[16]), "Does the impact of case management vary in different subgroups of multimorbidity? Secondary analysis of a quasi-experiment", https://doi.org/10.1186/s12913-017-2475-x; Tran, P. et al. (2022[4]), "Costs of multimorbidity: a systematic review and meta-analyses", https://doi.org/10.1186/s12916-022-02427-9.

The distribution of chronic condition clusters in PaRIS differs across countries. On average, 22% of people with multiple chronic conditions fall into the concordant group, 53% into the discordant group, and 24% into the mental health group. In all countries, the group with discordant conditions was the largest, making about half of the PaRIS population living with two or more chronic conditions. Discordant conditions were most prevalent in the US population of people aged 65 years and older (69%) and least prevalent in Portugal (45%). While Australia had the highest share of people with mental health conditions (40%), Italy had the highest share of concordant conditions (32%).

Table 3.2. Distribution of chronic condition clusters in the PaRIS across countries

Percentage of people with multiple chronic conditions in each chronic condition cluster

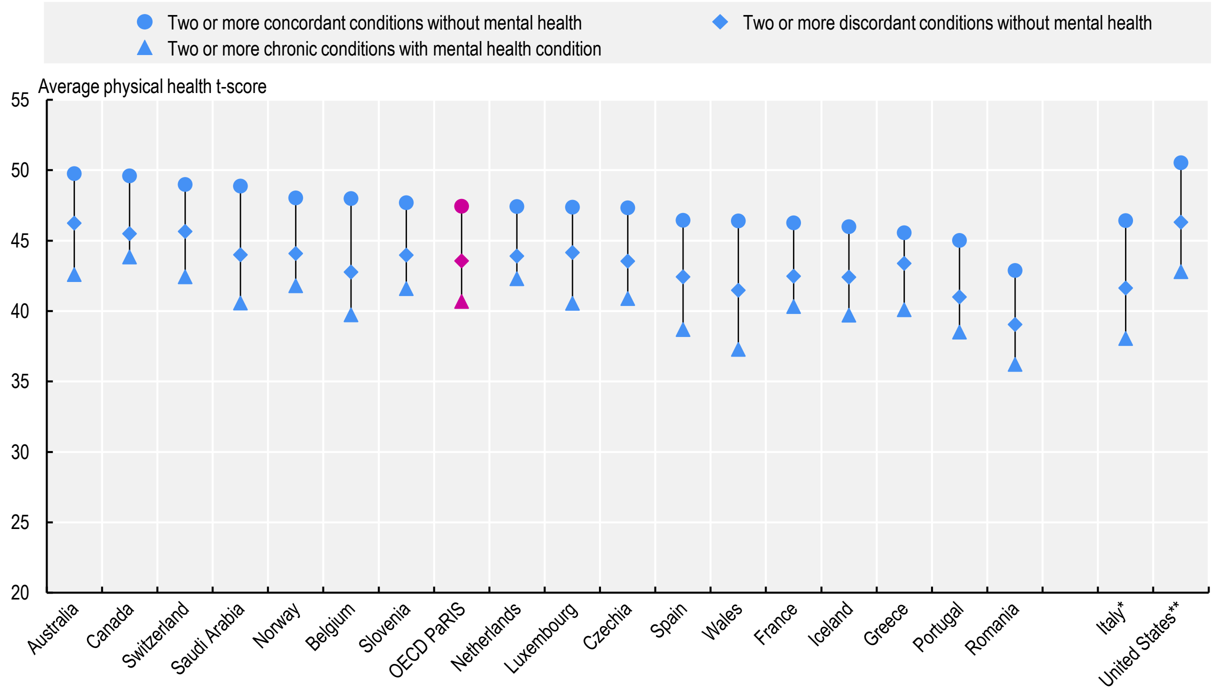
	Concordant conditions (%)	Discordant conditions (%)	Mental health group (%)
OECD PaRIS	**22**	**53**	**24**
Australia	12	48	40
Belgium	20	64	16
Canada	13	50	37
Czechia	25	61	14
France	24	52	24
Greece	26	44	29
Iceland	24	47	30
Luxembourg	19	57	25
Netherlands	28	57	15
Norway	27	53	20
Portugal	20	45	35
Romania	30	54	15
Saudi Arabia	18	67	14
Slovenia	29	52	19
Spain	15	52	33
Switzerland	27	55	18
Wales	17	60	23
Italy[1]	32	57	11
United States[2]	9	72	20

1. Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions.
2. United States sample only includes people aged 65 years or older.
Source: OECD PaRIS 2024 Database.

3.4.1. Mental health matters: People with at least one mental health condition need social care and support

The results from PaRIS show that among people living with multiple chronic conditions, those with at least one mental health condition are more vulnerable than people who live without any mental health conditions. Figure 3.7 shows that people who report at least one mental health condition besides other conditions have worse physical health compared to people without mental health conditions, with an OECD average of 41 which is below the good-fair cutoff (42).

Figure 3.7. Combination of chronic conditions have impact on physical health of people



Note: PROMIS® Scale v1.2 – Global Health component for physical health is a T-score metric with a range of 16-68, and a good-fair cutoff of 42, higher values represent better physical health. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between groups are statistically significant ($p<0.05$) for all countries except for the Netherlands between discordant and mental health group.

Source: OECD PaRIS 2024 Database.

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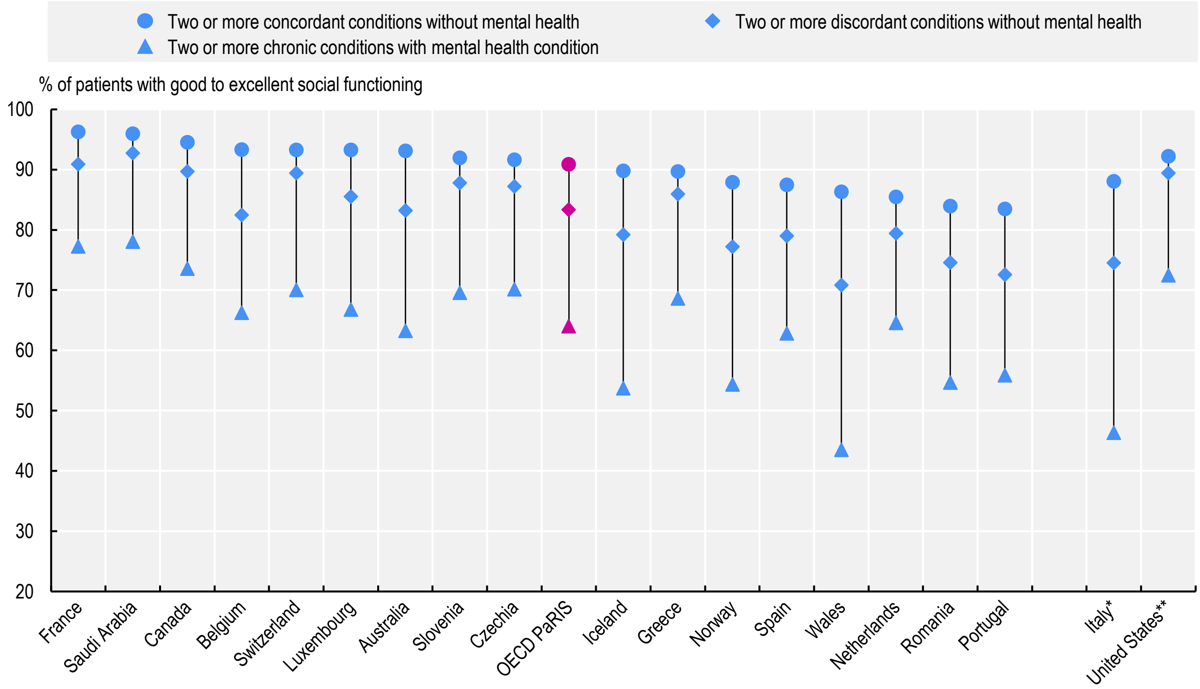
Fewer people reported good social functioning among the group with mental health conditions (OECD PaRIS average 64%) than among the other two groups (OECD PaRIS average respectively 91% for concordant conditions and 83% for discordant conditions). The gap between people with concordant or discordant conditions and mental health group varies more than two-fold across countries (Figure 3.8), highlighting the social care needs of people with mental health conditions.

> *"As a patient with multiple chronic illnesses, I confirm that my health status strongly influences my mental health and social life. I was diagnosed ten years ago when I was going through a period of uncertainty and significant fatigue. That limited my mobility and made me dependent on the help of others. This situation negatively affected my mental health and completely shut down my social life. After the diagnosis and treatment, my health improved, allowing me to return to work and function partially. Although there were better days, the illness worsened at times and caused a significant deterioration in my mood. During these challenging periods, I sought psychological help to help me cope with the disease and its consequences."*
>
> *Olga, 68 years old, female, living with a rare disease – polymyositis, antisynthetase syndrome and interstitial lung disease*

Figure 3.8. Fewer people with mental health conditions report good social functioning in all countries



Note: PROMIS® Scale v1.2 – Global Health. Answer to the question: "In general, please rate how well you carry out your usual social activities and roles [further specified in questionnaire]", "good, very good or excellent" versus "fair or poor". *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between groups are statistically significant (p<0.05) for all countries except for Czechia, Greece, the Netherlands, Slovenia, Switzerland and the United States between concordant and discordant groups.
Source: OECD PaRIS 2024 Database.

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Healthcare systems need to address this issue through integrated care models that provide co-ordination with social care services and support people with mental health conditions. Such models should focus on enhancing care co-ordination, improving access to social care services, and supporting self-management to mitigate the impact of multiple chronic conditions, and notably mental health conditions, on social lives. Additionally, primary care professionals should be equipped with the necessary resources and training to manage the complex needs of these patients effectively.

3.5. Characteristics of primary care influence the health and quality of life of people with multiple chronic conditions

Primary care plays a crucial role in co-ordinating care for people with multiple chronic conditions, making it a natural setting for implementing strategies and interventions like care co-ordination. It also helps empowering patients to manage their own health more effectively.

Well-designed primary care systems offer significant advantages from a population health perspective, with a strong body of evidence supporting its positive impact on health outcomes (Hansen et al., 2015[17]). For instance, robust primary care systems have been linked to better health in people with chronic conditions such as ischemic heart disease, cerebrovascular disease, and other long-term conditions

(Kringos et al., 2013[18]). Notably, strong primary care systems have also been associated with better health outcomes in people with multiple chronic conditions, who are more likely to report good or very good health if they reside in countries with well-structured primary care systems, characterised by high continuity of care and a broad range of services (Hansen et al., 2015[17]). In addition, there is strong evidence that primary care interventions can positively influence mental health outcomes, including improvements in depression and anxiety symptoms (Conejo-Cerón et al., 2017[19]).

The essential functions of primary care – serving as the first point of contact, providing person- and community-centred care, and delivering comprehensive, continuous, co-ordinated services – are key factors that enable it to effectively manage chronic conditions over time (OECD, 2020[20]). Therefore, primary care's unique position enables it to comprehensively understand a patient's medical history and current needs, playing a pivotal role in co-ordinating care for people with multiple chronic conditions. It also contributes to empowering patients to manage their own health more effectively through providing and co-ordinating self-management support (Dineen-Griffin et al., 2019[21]).

The comprehensiveness of primary care is one of the most influential factors for improving health outcomes, particularly in addressing the complex needs of patients with multiple chronic conditions. People with multimorbidity tend to experience better health, fewer limitations in daily functioning, and reduced need for long-term treatment in countries where primary care offers a wider array of services (Smith et al., 2016[22]). Additionally, continuity of care in primary care settings is advantageous for managing conditions that are especially responsive to primary care interventions, highlighting the importance of the ongoing relationship between patients and primary care teams, the management and communication of health information, and the care co-ordination (OECD, 2020[20]).

> *"I am thankful and grateful that I have a family GP for 13 plus years now. He is kind to me and understands the context to my health status. He hasn't added pressure and stress to my health situation and supported me. I was given the option to attend a physiotherapist for back issues, a dietitian and mental health well-being help to manage anxiety. He has given me discounts and [universal health insurance scheme] funded sessions as well as placed me as a hypertension acute care programmes and healthcare plans. I also receive vaccinations and well-being management apps to keep on top of my mental and physical health. It was challenging as I had COVID-19 three times and influenza twice with number of other viral infections. I believe my immune system is not up to date, due to all these infections, which makes it difficult to self-care and manage my chronic conditions. My GP will make urgent appointments, when I do not travel well."*
>
> *Lana, identifies herself as a person of colour, 45 years old, female, mother of two boys*

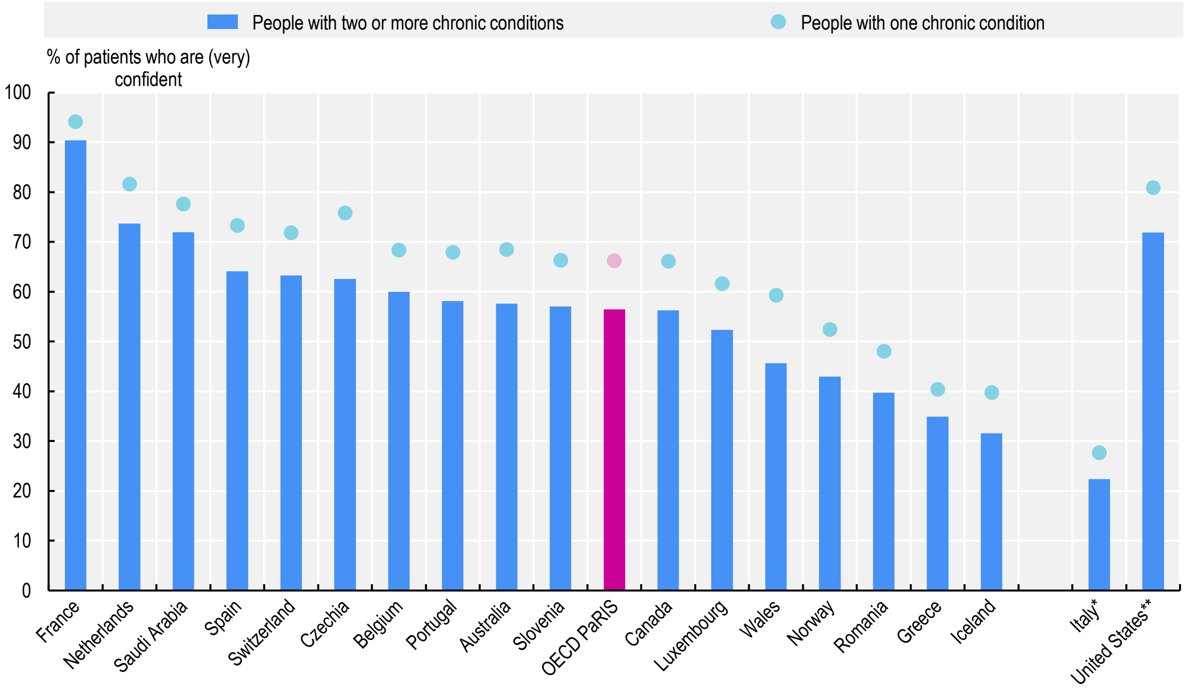
3.5.1. Having self-management support in primary care is essential for the care of people with multiple chronic conditions

Having self-management support is crucial for people with multiple chronic conditions to manage their own health and care. People with multiple chronic conditions are frequent users of healthcare services. They are usually expected to co-ordinate their own healthcare appointments, integrate recommendations from different healthcare professionals, manage medication use and navigate the healthcare system. The complexity of this can significantly strain patient capacity and resources (Verhoeff, 2023[23]). This can lead to missed appointments, inappropriate medication uses and difficulties with disease management as well as high treatment burden, experiences of fragmented care and uncertainty associated with lack of confidence in self-management for patients. Empowering patients with the knowledge and skills to manage their conditions effectively may improve managing their multiple chronic conditions and promote healthier lifestyles. Through self-management support, patients can develop self-efficacy and activation but also confidence and skills to manage their daily life and attain the best possible quality of life. This also helps to make the best use of all available resources by, for example, improving disease management, reducing hospitalisation and emergency visits, and improving health outcomes.

Fewer people are confident to manage their own health among those who have multiple chronic conditions

Fewer people with multiple chronic conditions are confident in their ability to manage their health and well-being compared to those with one chronic condition. Figure 3.9 shows that on average, the proportion of people who reported being confident or very confident was 10 percentage points lower among people with multiple chronic conditions compared to those with one condition. The gap was as high as over 13 percentage points in Czechia and Wales and below 5 percentage points in France. While in most countries more than half of people with multiple chronic conditions feel confident in self-managing their health, in a few countries (Wales, Romania, Norway, Greece, Iceland and Italy), less than half of people feel confident.

Figure 3.9. Fewer people with multiple chronic conditions are confident that they can manage their health



Note: P3CEQ Questionnaire. Response to question: “How confident are you that you can manage your own health and well-being?”, “confident or very confident” versus “somewhat confident or not confident at all”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between one and two or more chronic conditions are statistically significant (p<0.05) except for Australia, Belgium, Canada, Luxembourg, Portugal, and Slovenia.
Source: OECD PaRIS 2024 Database.

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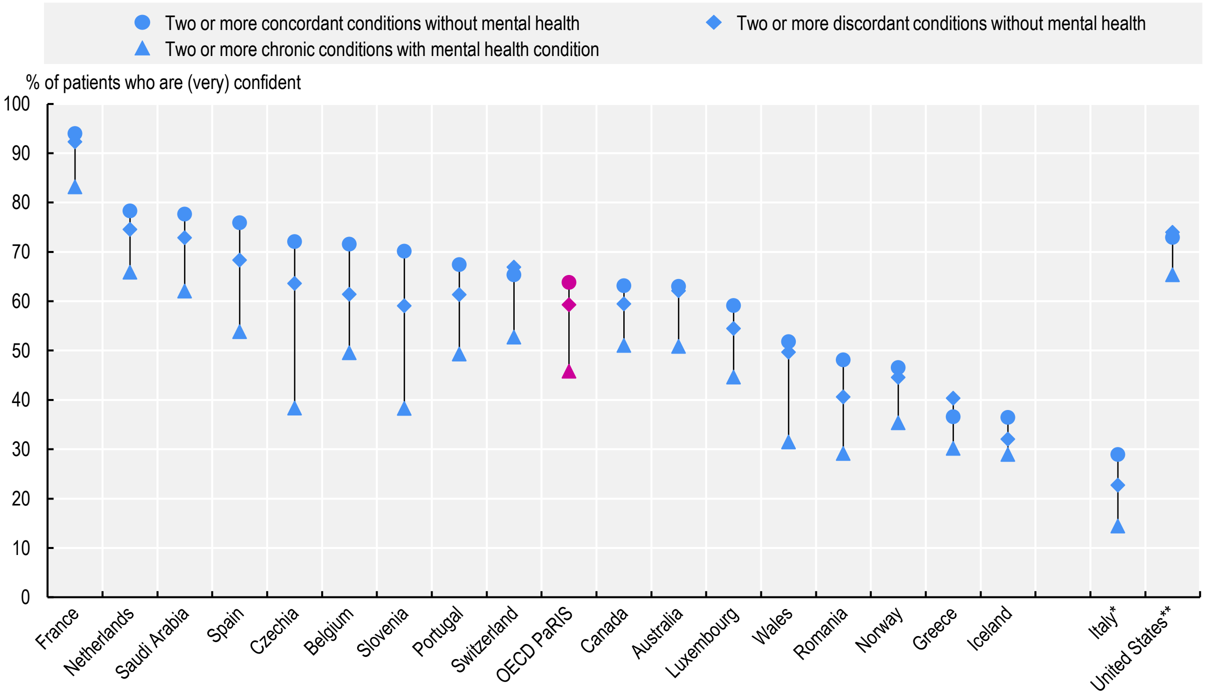
People with a mental health condition are less likely to be confident in managing their health compared to those without mental health conditions, who are in the concordant or discordant clusters.

Figure 3.10 illustrates that, on average, the proportion of people who feel confident or very confident in managing their health is almost 18 percentage points lower in the mental health cluster compared to the concordant group. In some countries, like Czechia and Slovenia, this gap is even larger, exceeding 30 percentage points. In some countries such as Romania, Greece, Iceland and Italy about only 30% of people with a mental health condition is confident to manage their health.

Figure 3.10. Fewer people with a mental health condition are confident in managing their health in most countries



Note: P3CEQ Questionnaire. Response to question: “How confident are you that you can manage your own health and well-being?”, “confident or very confident” versus “somewhat confident or not confident at all”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences are statistically significant (p<0.05) for Slovenia, Switzerland and Wales between the discordant and the mental health group and for Belgium, Czechia, France, Italy, Portugal, Romania, Saudi Arabia, Slovenia, Spain and Wales for between the concordant and the mental health groups.
Source: OECD PaRIS 2024 Database.

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Primary care practices provide various options to support self-management

Patients managed in primary care practices that offer self-management support are more likely (14 percentage points) to report being confident that they can manage their own health (see Chapter 4).

Insights from PaRIS further highlight the readiness of primary care to offer self-management support. Based on the responses from primary care professionals, countries provide self-management support through multiple approaches. Most patients with multiple chronic conditions receive verbal information during or after the consultation (89%), which is provided by nurses in most countries, or self-management materials, such as booklets or web-based information (68%) (Table 3.3). However, the results indicate greater variability in other self-management support practices. For example, 39% of people with multiple chronic conditions are managed in practices where referrals to self-management classes or educators take place. About one-third (35%) of patients are managed in practices where explicit goal setting and action planning with patients is offered. Moreover, only a quarter (25%) of patients visit primary care practices that have team members trained in patient empowerment and problem-solving, which may represent a gap in the availability of comprehensive support for patients managing chronic conditions.

PaRIS data show that when healthcare professionals provide written information, patients experience better care co-ordination and person-centred care (Chapter 4). People with multiple chronic conditions often face complex consultations where the primary care professional usually address various issues such as issues in relation to different health conditions, medications, mental health and social lives. The amount of information provided in one session can sometimes be overwhelming for people with multiple chronic conditions, and patients might require written reminders or summaries after their visit (The HHS Interagency Workgroup on Multiple Chronic Conditions, 2011[24]).

Table 3.3. Most people with multiple chronic conditions are offered verbal information to support self-management but few receive self-management support from practices that have team members trained in patient empowerment

Percentage of patients with two or more chronic conditions in primary care practices offering different self-management support types across countries; multiple responses were allowed

Country	Verbal information during or after the consultation (%)	Distributing information (pamphlets, booklets, internet/web-based information) (%)	Referral to self-management classes or educators (%)	Explicit goal setting and action planning with members of the practice team (%)	Members of the practice team trained in patient empowerment and problem-solving (%)
OECD PaRIS	89	68	39	35	25
Australia	100	94	73	69	38
Belgium	85	51	16	31	7
Canada	84	75	61	43	34
Czechia	93	82	10	26	10
France	79	24	26	17	16
Greece	69	52	14	18	16
Iceland	95	61	26	26	30
Luxembourg	89	66	27	6	0
Netherlands	86	77	35	46	48
Norway	95	66	76	28	10
Portugal	92	81	13	24	12
Romania	85	57	1	17	22
Saudi Arabia	74	49	15	27	22
Slovenia	98	94	92	70	42
Spain	97	75	43	53	41
Switzerland	96	78	28	31	26
Wales	90	93	86	33	21
Italy[1]	88	38	5	19	6

1. Data from a total of 49 243 patients with two or more chronic conditions linked to primary care practices in all PaRIS countries except for the United States, where the provider questionnaire was not applied.
Source: OECD PaRIS 2024 Database.

Box 3.3. Self-management support in primary care practices in Slovenia is supported through a national programme

In 2011, the Slovenian Government invested in scaling-up of the management of people with chronic disease, particularly those with multiple chronic conditions, in primary care through "Renewed Family Medicine Practices". A new member of a team, nurse practitioner, was added to the family medicine team in primary care practices. **The nurse practitioner took on the preventive activities and managing patients with multiple chronic diseases.** The registered nurses also perform individual consultations with patients regarding lifestyle and set goals to improve it.

In addition to standardising patients' management, quality assurance and ensuring integrated, standardised, and person-centred approach; Renewed Family Medicine Practices enabled task share among primary care professionals in line with their competencies. It also included **standardised protocols** for diagnosis and treatment of diabetes and hypertension, health education, and guidelines on collaboration within the care team and between different providers e.g. health education centres in region, municipalities, clinical specialists on the secondary/tertiary care levels, social workers, and patient associations, which also provide **health education and self-management support**. The protocols consist of a clear description of the tasks that need to be done at primary care level for preventive activities and managing chronic patients.

A steering group of the Ministry of Health, consisting of professionals in the required fields, **continuously monitor the established protocols and adapt them** according to new evidence. This integrated way of managing patients is financed through the Health Insurance Institute of Slovenia. Evaluations of the programme showed the **effectiveness of nurse-led self-management programmes** in improving self-management of chronic conditions.

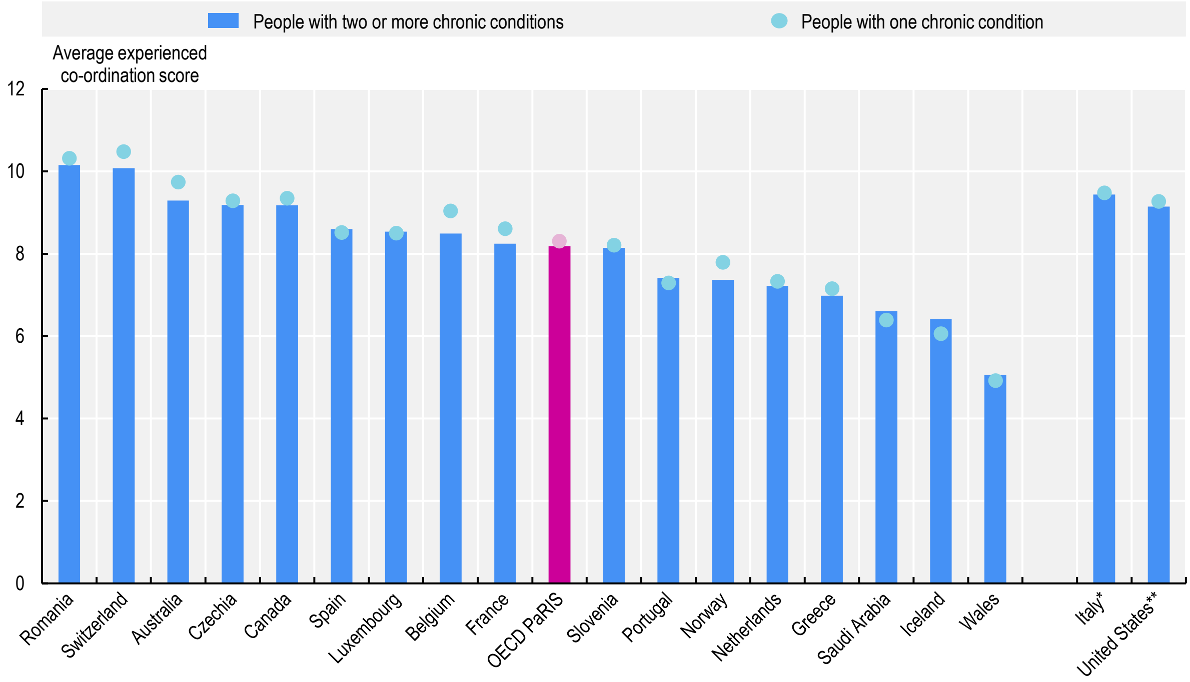
Source: Klemenc-Ketis, Z. et al. (2021[25]), "Implementation of Integrated Primary Care for Patients with Diabetes and Hypertension: A Case from Slovenia", https://doi.org/10.5334/ijic.5637; Klemenc-Ketis, Z. et al. (2015[26]), "Role of nurse practitioners in reducing cardiovascular risk factors: a retrospective cohort study", https://doi.org/10.1111/jocn.12889; Klemenc-Ketis, Z. et al. (2018[27]), "Transition from a traditional to a comprehensive quality assurance system in Slovenian family medicine practices", https://doi.org/10.1093/intqhc/mzy157.

3.5.2. Appropriate care co-ordination is essential in the care for multiple chronic conditions

Care co-ordination is pivotal for improving outcomes and experiences of people living with multiple chronic conditions. This patient group has diverse and often conflicting needs of different conditions. In addition, they often need to navigate the healthcare system to visit multiple healthcare professionals in different healthcare settings. Primary care plays a decisive role in the co-ordination of care for people living with multiple chronic conditions.

While co-ordination of care may become more complicated when the number of conditions increases, people with multiple conditions are comparable to those with one chronic condition in how they experience care co-ordination (Figure 3.11). The average score on experienced care co-ordination varies from about 10 out of 15 points in Romania and Switzerland to below 6 points in Wales, with an OECD average of 8 points, which is relatively low.

Figure 3.11. Experiences of care co-ordination is comparable among people with multiple chronic conditions and people with one chronic condition



Note: P3CEQ Questionnaire. Response to five questions measuring care co-ordination. Scale ranges from 0 to 15, higher scores represent better care co-ordination. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Results within countries between people with two or more chronic conditions and people with one chronic condition are statistically not significant ($p<0.05$).
Source: OECD PaRIS 2024 Database.

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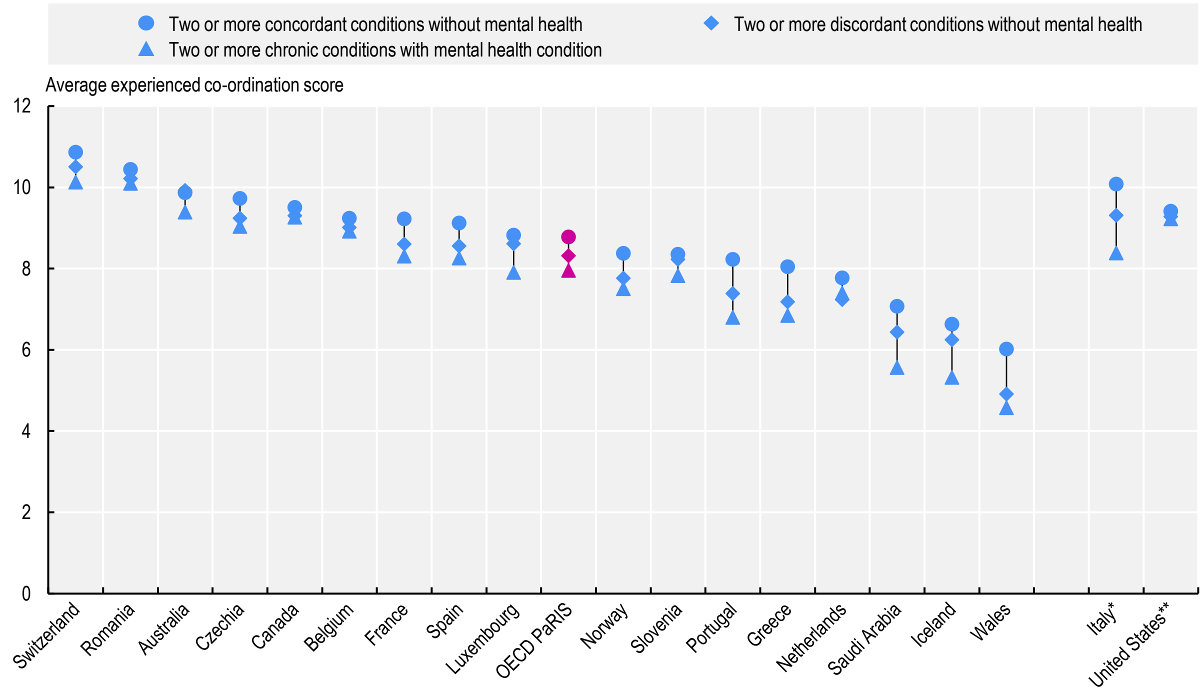
In a few countries such as Iceland, Italy, Portugal and Saudi Arabia, people with a mental health condition in addition to another chronic condition are more likely to report lower experienced care co-ordination compared to those living with multiple chronic conditions without any mental health condition (Figure 3.12).

Figure 3.12. People's care experiences mostly do not differ across people with different combinations of chronic conditions, except in a few countries



Note: P3CEQ Questionnaire. Response to five questions measuring care co-ordination. Scale ranges from 0 to 15, higher scores represent better care co-ordination. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences are only statistically significant ($p<0.05$) for Iceland, Italy, Portugal and Saudi Arabia between the concordant and the mental health groups.
Source: OECD PaRIS 2024 Database.

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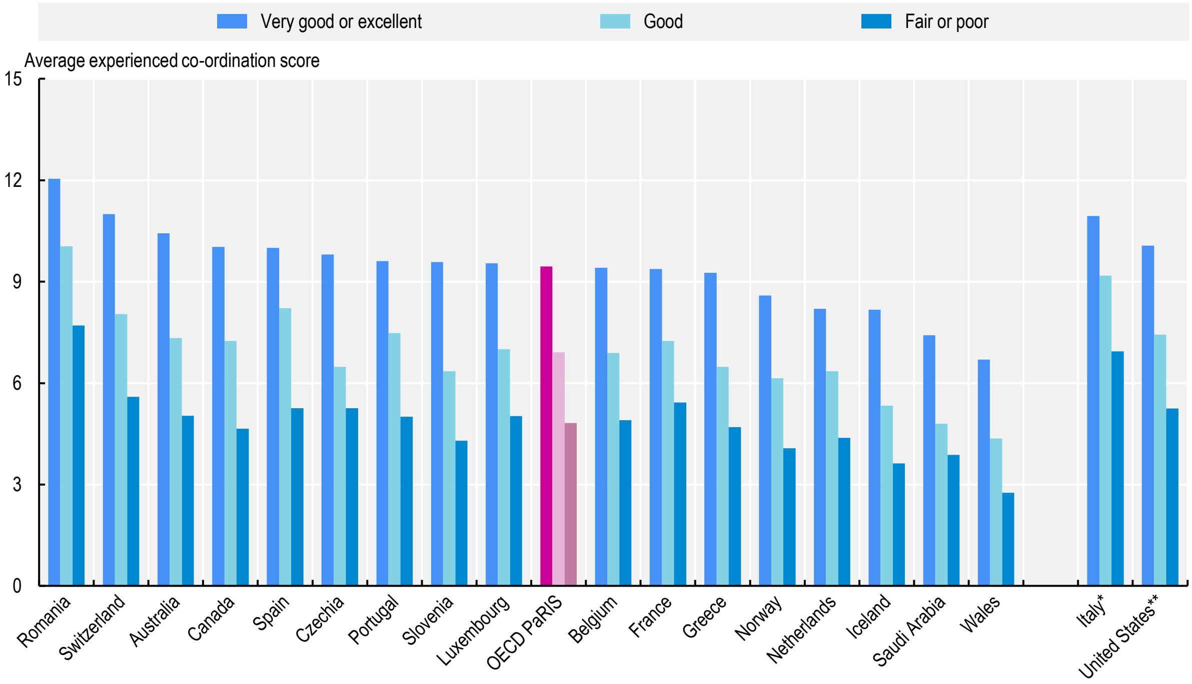
At the individual level, effective care co-ordination strengthens the primary care safety net by fostering relationships with care providers, supporting patients, and facilitating the design and evaluation of both existing and innovative care models. These models are tailored to meet diverse health needs, settings, and life-course perspectives, ultimately promoting health and well-being (Khatri et al., 2023[28]). However, the prevailing organisational model of primary care still predominantly relies on consultations with physicians operating in solo practices.

PaRIS results highlight the high importance of better care co-ordination for people with multiple chronic conditions. In countries where patients report better quality of care, they also tend to report better experiences of care co-ordination (Figure 3.13).

Figure 3.13. In countries where people experience better care co-ordination, people are more likely to report better quality of care



Note: P3CEQ Questionnaire. Response to five questions measuring care co-ordination. Scale ranges from 0 to 15, higher scores represent better care co-ordination. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Results are statistically significant (p<0.05) in all countries between people reporting very good or excellent, good and fair or poor experienced quality of care.
Source: OECD PaRIS 2024 Database.

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Greater utilisation of teamwork, the involvement of other health professionals, and enhanced electronic communication could expand the capacity of each primary care physician to manage more patients, while simultaneously improving the quality of care provided (OECD, 2020[20]).

Most primary care practices do not have the necessary continuity of information to co-ordinate care of people with multiple chronic conditions

Continuity of information is an integral component of care co-ordination for people with multiple chronic conditions. Primary care practices in PaRIS reported the continuity of medical information throughout the patient pathway, and whether they can exchange patient clinical summaries or electronic medical records, which also contributes to enhanced care co-ordination. On average, only 40% of people with multiple chronic conditions are managed in primary care practices where they receive medical records from previous practice without directly requesting them; 46% receives medical records if requested from the previous practice and 34% if patient brings them.

Table 3.4. Primary care practices have limitations to systematically access to previous medical records directly

Percentage of people with two or more chronic conditions in primary care practices reporting the availability of medical records from previous practice; multiple responses were allowed

	Medical records from previous practice are available		
Country	Without directly requesting them (%)	If requested from the previous practice (%)	If the patient brings them (%)
OECD PaRIS	**40**	**46**	**34**
Australia	61	100	62
Belgium	24	86	27
Canada	19	72	47
Czechia	0	100	17
France	1	18	90
Greece	38	4	21
Iceland	71	35	10
Luxembourg	1	28	93
Netherlands	9	94	5
Norway	15	63	48
Portugal	68	39	23
Romania	10	56	73
Saudi Arabia	67	6	17
Slovenia	27	79	22
Spain	70	22	15
Switzerland	2	63	94
Wales	41	79	9
Italy[1]	12	10	63

Note: Data from a total of 49 579 patients with two or more chronic conditions linked to primary care practices in all PaRIS countries except for the United States, where the provider questionnaire was not applied.

1. Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions.

Source: OECD PaRIS 2024 Database.

PaRIS data further show that in 14 out of the 19 countries 95% and more of the patients are managed in practices using electronic medical records (Chapter 4). However, only three countries (Belgium, the Netherlands and Norway) have more than 90% of patients managed in practices that are able to exchange medical records electronically with other primary care practices. The limited ability to exchange electronic information in the PaRIS data can reflect technological limitations (e.g. there are no systems in place for data sharing), regulatory limitation (e.g. regulations in place prevent data sharing), or lack of awareness of primary care practices about the data sharing capabilities (see Chapter 4 for further details).

Expanding care beyond physicians can enhance care co-ordination in primary care

Having staff other than physicians to support patient education and chronic care management is not systematic in all countries (Table 3.5). On average, 72% of people with multiple chronic conditions are managed in primary care practices in PaRIS reporting additional staff for patient education and counselling (e.g. on tobacco use, diet or physical activity), ranging from 95% or more in Australia, the Netherlands, Slovenia, Portugal and Spain to below 40% in France, Luxembourg and Norway. Furthermore, additional staff managing certain tasks related to chronic disease management (e.g. diabetes control, wound care or measuring blood pressure) was available for 83% of patients with multiple chronic conditions, ranging from over 95% in Australia, Iceland, the Netherlands, Portugal, Slovenia, Spain and Wales, to 50% or less in France and Luxembourg. These two latter countries reported the highest percentages of patients receiving care in primary care practices that employ only physicians, 44% and 52%, respectively.

Table 3.5. Non-physician staff to support chronic care management is not systematic in all primary care practices

Percentage of people with two or more chronic conditions in primary care practices offering non-physician roles in chronic care support across countries

Country	Roles and functions of the staff		
	Patient education and counselling (%)	Chronic disease management (%)	No additional staff (other than physicians) (%)
OECD PaRIS	**72**	**83**	**9**
Australia	100	100	0
Belgium	40	46	37
Canada	79	94	4
Czechia	54	86	1
France	38	42	44
Greece	51	60	23
Iceland	89	99	0
Luxembourg	3	18	52
Netherlands	100	100	0
Norway	27	75	7
Portugal	98	97	0
Romania	66	81	9
Saudi Arabia	63	73	9
Slovenia	100	96	0
Spain	95	97	4
Switzerland	49	80	11
Wales	89	100	0
Italy[1]	44	69	14

Note: Data from a total of 49 885 patients with two or more chronic conditions linked to primary care practices in all PaRIS countries except for the United States, where the provider questionnaire was not applied.

1. Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions.

Source: OECD PaRIS 2024 Database.

Box 3.4. Chronic conditions are managed by another healthcare professional than a physician in a typical Canadian primary care clinic in Quebec

A typical Canadian publicly funded primary care practice in Quebec operates on a fee-for-service model for family physicians, with global funding for other professionals provided by the Ministry of Health and Social Services. Family physicians work as independent practitioners in the clinics, while other healthcare professionals are salaried employees under the governance of a physician manager and often an administrative manager affiliated with the local health network of the practice's service jurisdiction. Family physicians are responsible for initial diagnoses and treatments, and they collaborate closely with the clinic's other team members, focusing on patients requiring more complex care. Older people are most frequent users of primary care practices, many with multiple chronic conditions. The clinics follow a shared-care model, where each healthcare professional plays a specific role in managing patients' chronic conditions. Patients are registered under a family physician's name but can see other professionals in the practice as needed for their condition.

Registered nurses play a pivotal role in collaboration with family physicians, especially in the management of people with multiple chronic conditions

Nurses manage people with multiple chronic conditions most of the time following a referral from the family physician or when the nurse independently identifies a follow-up need with patients they see in clinical practice (e.g. a walk-in patient needing diabetic care and anxiety management). **Nurses often take the lead in creating personalised care plans for this patient group.** They conduct initial and ongoing assessments, monitor vital signs, provide counselling, and help co-ordinate care with other professionals. In Quebec, with the appropriate continued education and standing prescriptions, nurses can initiate medication for chronic conditions (e.g. hypertension, diabetes) once diagnosed and ensure follow-up and dosage adjustments. **Nurses work closely with pharmacists, where available**, when the patient's medication regimen requires attention. Pharmacists help prevent complications related to polypharmacy, which is common in patients with multiple chronic conditions. **Nurses may also refer patients to social workers**, especially in cases of common mental health issues in primary care (such as anxiety and depression) or when chronic disease management presents adaptation challenges. Social workers provide psychological and social support, facilitate access to community resources (like food assistance or transportation services), and help reduce social isolation, which can impact treatment management and chronic disease management.

The clinic holds monthly team meetings where the staff discuss service organisation within the clinic and collaborative work methods, both intra- and interdisciplinary. Primary care professionals discuss the joint management of new health conditions or professional practice standards in these meetings. The interprofessional team also has informal exchanges in the clinic regarding patients they co-manage to align their respective approaches. While complex case discussions in team meetings add significant value, these "hallway" interdisciplinary discussions are more typical in primary care to ensure continuity and optimise clinical time dedicated to patients.

Shared electronic medical record, allowing each team member to access the latest patient information, support collective and consistent decision-making

The electronic medical records (EMR) are essential for the clinics' continuous improvement. The physician managers, along with administrative staff, regularly extract aggregated data from EMR to identify patients with chronic conditions who visit frequently, miss appointments, or could benefit from interdisciplinary follow-up.

Source: Canadian National Project Managers.

3.5.3. Interventions such as medication reviews matter

Regular medication review is recognised as a key priority to optimise therapy and prevent medication-related harm. Medication reviews, undertaken by healthcare professionals and patients, are also important for shared decision-making, incorporating the needs and preferences of patients. Inappropriate polypharmacy is associated with prescription errors, problems with disease management and drug interactions, which represents a major avoidable economic and societal cost (Fitzpatrick and Gallagher, 2023[29]). Taking the example of patients with high blood pressure and cardiovascular conditions, if care is not adequately co-ordinated and regular medication reviews are not conducted, patients may be prescribed antihypertensive medications by multiple healthcare providers, such as their family doctor, cardiologist, internist, and neurologist. This may occur because different healthcare professionals, working in various settings, may prescribe treatments for the same condition, particularly in patients with multiple chronic conditions.

As many as 1 in 10 hospitalisations in OECD countries may be caused by a medication-related event (de Bienassis et al., 2022[11]). A 2022 survey of OECD countries found that less than half of surveyed countries had implemented policies to support medication reconciliation at times of transitions in care (de Bienassis et al., 2022[11]). Primary care professionals are well-positioned to review medicines for people living with multiple chronic conditions, thus reduce the number of medicines taken by the patient and improve patient outcomes and experiences (Box 3.5).

Box 3.5. Managing care of people living with chronic conditions through medication reviews: A family doctor perspective

Pilar is a family doctor in Spain, responsible for the care of 1 759 patients, with a significant percentage **(47%) of them living with multiple chronic conditions.**

Pilar collaborates closely with other specialists to ensure comprehensive care for her patients with chronic conditions. **She regularly conducts thorough medication reviews**, assessing not only her own prescriptions but also those issued by other specialists. This process allows her to evaluate if the medications are effectively **supporting the patient’s health issues and well-being while monitoring for any potential risks.**

When a patient reports symptoms or side effects related to medications, Pilar adjusts their medications as needed. **She may also arrange a virtual consultation with the relevant specialist to discuss any necessary medication changes.** Following these exchanges, **Pilar meets with the patient to review the updated treatment plan**, avoiding the need for the patient to visit another healthcare setting and making the conciliation of the multiple medications for a better patient experience.

Source: Pilar, family doctor.

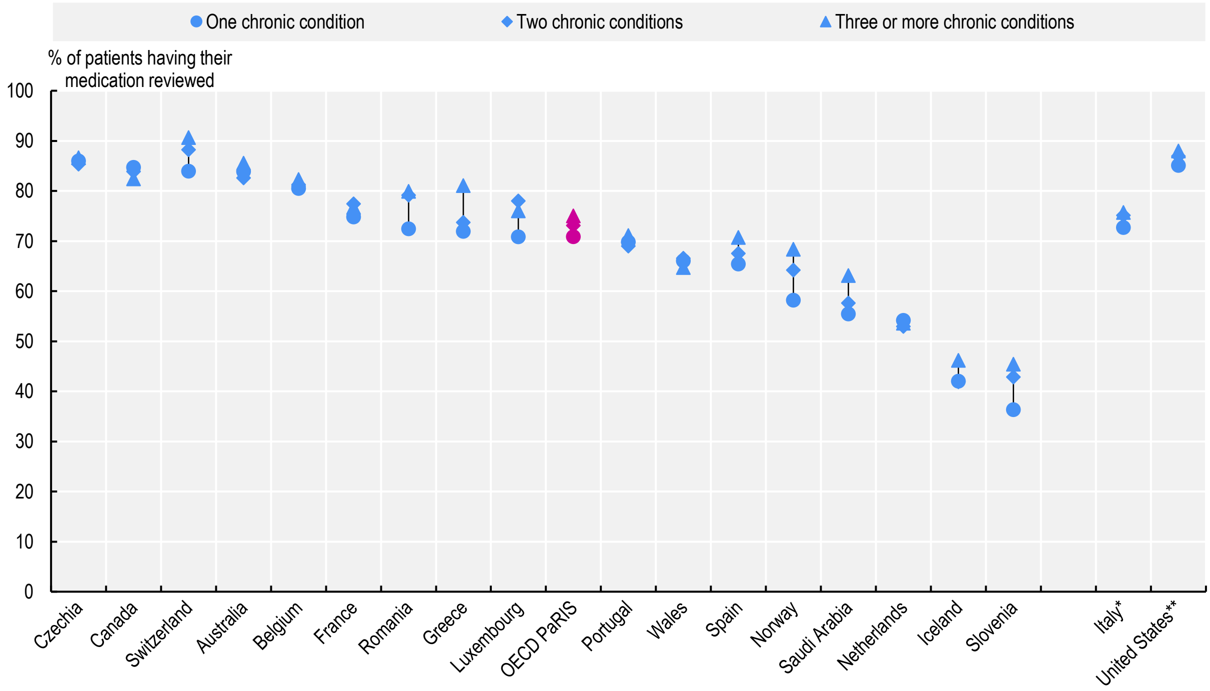
More than 70% of people with multiple chronic conditions take at least three different medicines on a regular or ongoing base, and above 35% take four medicines or more. These results stress the importance of systematic medication reviews in the countries.

On average, about 70% of people living with multiple chronic conditions reported having their medication reviewed by a healthcare professional in the last six months (Figure 3.14). While about 90% of people with three of more chronic conditions have medication reviews in Czechia, Switzerland and Australia, the share is lower than 50% in Iceland and Slovenia.

In most countries, there is no difference in the percentage of people having a medication review between people with multiple chronic conditions and those with one condition. In some countries such as Luxembourg, Romania and Slovenia, more people with multiple chronic conditions have medication reviews compared to people with one chronic condition.

Figure 3.14. Regular medication review is not in all countries a standard practice

Percentage of people with one, two and three or more chronic conditions who reported their medication being reviewed over the past 12 months



Note: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between one and two or more chronic conditions are statistically significant ($p<0.05$) for Luxembourg, Romania and Slovenia. Differences between one and three or more chronic conditions are statistically significant ($p<0.05$) for Greece, Luxembourg, Romania, Saudi Arabia, Slovenia, Spain and Switzerland.
Source: OECD PaRIS 2024 Database.

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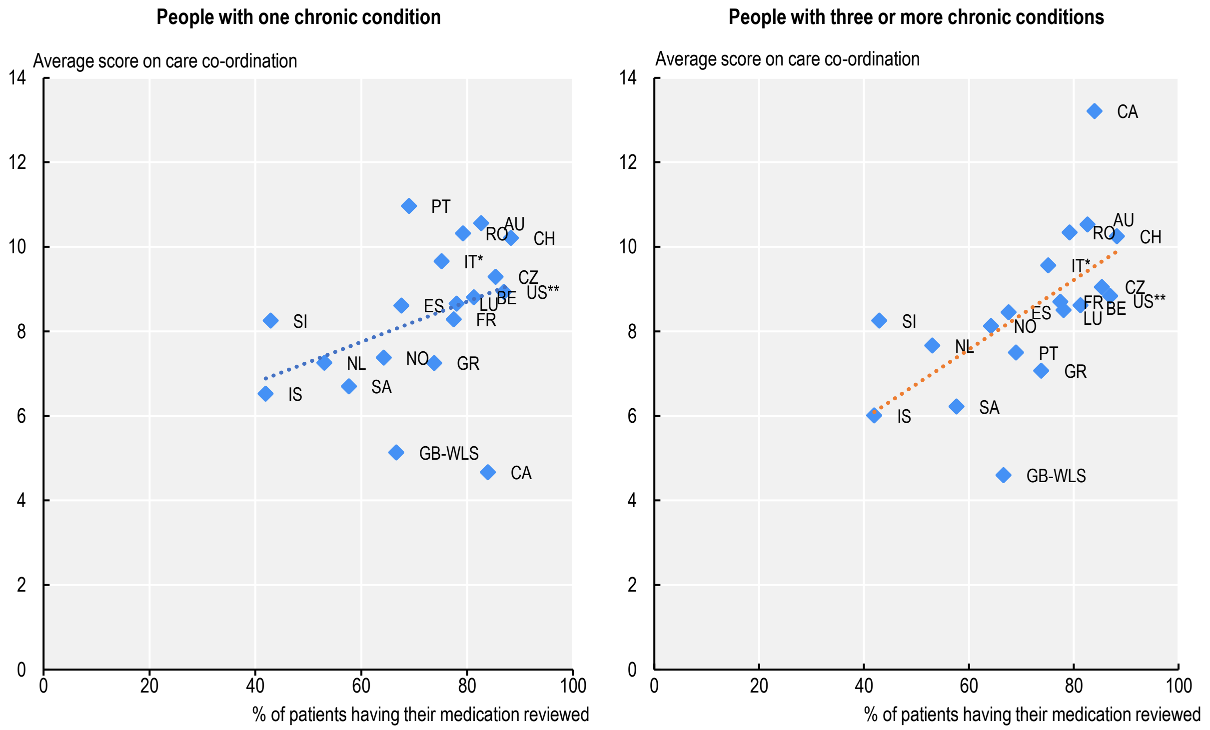
PaRIS results highlight that people often experience better care co-ordination when they have a medication review by a healthcare professional (Chapter 4). This relationship is even more prominent among people with three or more chronic conditions (Figure 3.15).

Figure 3.15. Experienced care co-ordination and having medication review go hand-in-hand among people with multiple chronic conditions

Percentage of people reporting having their medication reviewed and average score on experienced care co-ordination



Note: P3CEQ. Response to five questions measuring care co-ordination. Scale ranges from 0 to 15, higher values represent better experienced co-ordination. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older.
Source: OECD PaRIS 2024 Database.

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3.5.4. Spending more time with primary care professionals is associated with better experiences of quality of care

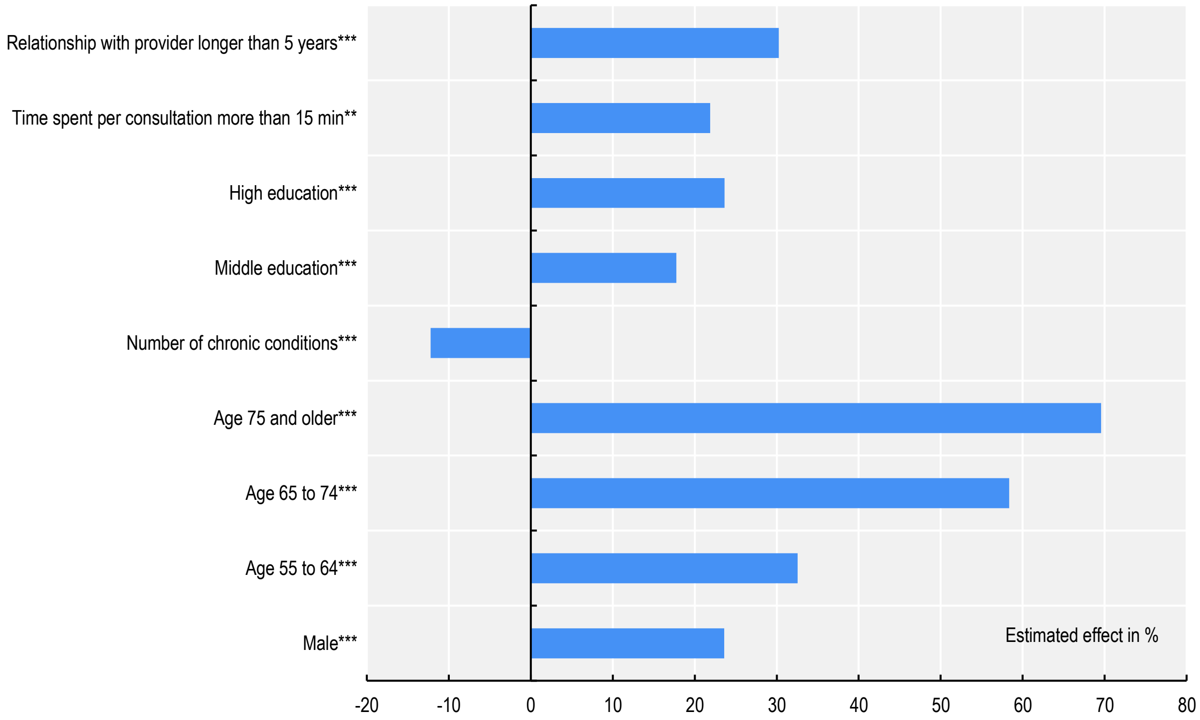
People with multiple chronic conditions often have more complex needs, which might not be covered in health systems designed for single diseases with limited consultation time. The time spent on consultations, meeting the same primary care professionals, follow-up and relationship are perceived more important among people with multiple chronic conditions than patients with no chronic conditions (Norman, Jelin and Bjertnaes, 2024[30]).

PaRIS data show that people who live with multiple chronic conditions and have longer time with primary care professionals are more likely to report a good quality of care. The results show that having a long-standing relationship with primary care professional (longer than five years) was associated with an increase of 30% in the odds of experiencing quality of care ($p < 0.001$) (Box 3.6). Patients benefit from the trust, rapport, and understanding developed over time.

In addition, more time scheduled for regular or follow up consultations (more than 15 minutes) significantly improve the odds of experiencing good quality of care by 21% ($p < 0.005$) among people with multiple chronic conditions, underlining the importance of giving patients adequate time to address their concerns and ensure thorough care. Other factors, such as a higher number of chronic conditions, were associated with a decrease in the odds of experiencing good quality of care, reinforcing the need for tailored interventions for patients with complex health needs.

Figure 3.16. Longer time with primary care professionals is associated with higher levels of experiences of quality of care

Estimated effects and 95% confidence intervals on overall quality of care, expressed in percentages



Note: Analysis includes 30 964 patients in 18 countries, only those with at least two chronic conditions were included. The United States was not included for not having information at the practice level for provision. Values shown are odds ratios, calculated by exponentiating the regression coefficients (e^{Estimate}) from the logistic regression model. These odds ratios represent the multiplicative change in the odds of the outcome for a one-unit increase in the predictor variable, with bars extending to the right signifying increased odds and bars extending to the left indicating decreased odds, For the variable "Number of chronic conditions", the effect reflects the marginal change, meaning the increase (or decrease) in the odds associated with having one additional chronic condition. Statistical significance: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Male compared to female, Age groups compared to people from 45 to 54 years old; Education high and middle compared to people with low education. Random intercept models with patient, practice and country level.
Source: OECD PaRIS 2024 Database.

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> *"Between birth and age 60 I had four GPs – for 30, 5, 10 and 15 years respectively. Since then, I have seen upwards of 20 different GPs. Without full and accurate exchange of records this can mean that much time is taken with familiarisation, and errors can occur. In the past, because I had a personal relationship with the GP this was rare, but recently less so. Similarly, the archaic way of referral to specialists, a legacy of the medical hierarchy is less than helpful."*
>
> *Anonymous person living with multiple chronic conditions*

Box 3.6. Regression analysis on the impact of scheduled consultation time and continuity of the patient-provider relationship on patient-reported quality of care

Experienced care quality was analysed to evaluate patient experiences, focusing on overall experienced quality of care. Using multilevel models with random intercepts, the analysis examined the associations between time spent per consultation and the duration of the patient-provider relationship. The models were adjusted for gender, age categories, level of education, number of chronic conditions, and unobserved variations at both the country and provider levels.

Experienced quality of care is based on the question: "When taking all things into consideration in relation to the care you have received, overall, how do you rate the medical care that you have received in the past 12 months from your primary care centre?". Responses are rated on a scale of 1-5, with the proportion of patients responding "good," "very good," or "excellent" compared to those responding "fair," "poor," or "not sure."

$$\mathbf{Y}_{ijk} = \beta_0 + \beta_1 (\textbf{Consultation > 15 min}_{ijk}) + \beta_2 (\textbf{Relationship > 5 years}_{\mathbf{ijk}}) + \beta_3 (\text{Number of chronic conditions}_{ijk}) + \beta_4 (\text{Male}_{ijk}) + \beta_5 (\text{Age 75 plus}_{ijk}) + \beta_6 (\text{Age 65 to 74}_{ijk}) + \beta_7 (\text{Age 55 to 64}_{ijk}) + \beta_8 (\text{High education}_{ijk}) + \beta_9 (\text{Middle education}_{ijk}) + u_j + v_{jk} + \epsilon$$

Having a long-standing relationship (more than five years) was associated with an increase of 30% in the odds of experiencing good quality of care ($p < 0.001$). Time scheduled per regular or follow up consultation (more than 15 minutes) improved the odds of experiencing good quality of care by 21% ($p = 0.0\,049$). Other factors, such as a higher number of chronic conditions, were associated with low probability of experiencing better quality of care.

Table 3.6. The likelihood of experiencing better quality of care is the highest among highly educated men who spend more time with primary care professional

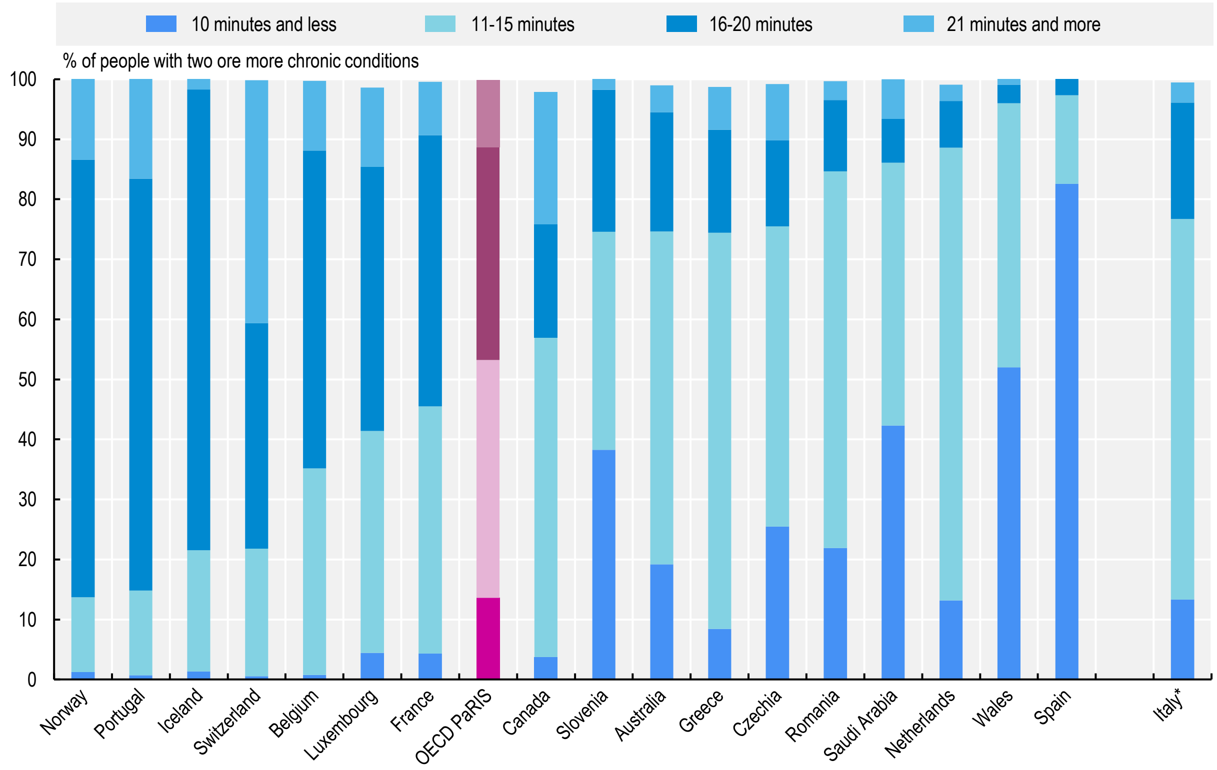
Low education, 45 to 54 years old, at least two chronic conditions	Predicted Probability
Male (time per consultation > 15 min and relationship with provider > 5 years)	92.0%
Male (neither time nor relationship)	87.9%
Female (time per consultation > 15 min and relationship with provider > 5 years)	90.3%
Female (neither time nor relationship)	85.5%
Middle education, 55 to 64 years old, at least two chronic conditions	Predicted Probability
Male (time per consultation > 15 min and relationship with provider > 5 years)	94.7%
Male (neither time nor relationship)	91.9%
Female (time per consultation > 15 min and relationship with provider > 5 years)	93.6%
Female (neither time nor relationship)	90.2%
High education, 65 to 74 years old, at least two chronic conditions	Predicted Probability
Male (time per consultation > 15 min and relationship with provider > 5 years)	95.8%
Male (neither time nor relationship)	93.4%
Female (time per consultation > 15 min and relationship with provider > 5 years)	94.8%
Female (neither time nor relationship)	92.0%
Over 75 years old, at least two chronic conditions	Predicted Probability
Low-educated male (neither time nor relationship)	92.5%
High-educated male (time per consultation > 15 min and relationship with provider > 5 years)	96.0%
Low-educated female (neither time nor relationship)	90.9%
High-educated female (time per consultation > 15 min and relationship with provider > 5 years)	95.1%

Source: OECD PaRIS 2024 Database.

On average, less than half (47%) of patients with multiple chronic conditions are seen in primary care practices which schedule more than 15 minutes on regular and follow-up consultations, ranging from more than 80% in Norway and Portugal to less than 10% in Wales and Spain (Figure 3.17).

Figure 3.17. About half of patients with multiple chronic conditions are managed in primary care practices where 15 minutes or less time is scheduled for regular and follow-up consultations

Percentage of people with multiple chronic conditions in participating primary care practices reporting time scheduled for regular or follow up consultation



Note: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. Data from a total of 56 912 patients with two or more chronic conditions linked to primary care practices in all PaRIS countries except for the United States, where the provider questionnaire was not applied.
Source: OECD PaRIS 2024 Database.

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On average, 58% of people with multiple chronic conditions have a relationship of more than five years with their primary care professional, achieving long-term continuity of care (cross-country range: 40-74) (Figure 3.18). Nevertheless, among people who report a relationship of more than five years, 39% have been with their primary care professional for over 10 years. The highest proportions of patients with such long-term continuity were observed in Romania, Czechia and the Netherlands, where over 50% of patients reported 10 years or more.

Box 3.7. The act of registration in Czechia

Registration with a family doctor in the Czechia is a voluntary administrative act, which at the same time allows the patient to continuously benefit from care mediated exclusively by a family doctor, including, in addition to routine care, also prevention and screening, and especially co-ordination of care provided by specialists and management of chronic conditions.

Less than 0.5% of people change their family doctor after the statutory 3-month interval. 90% of people in the system are permanently registered and seek care through family doctors, even if strict gatekeeping is not established in the country.

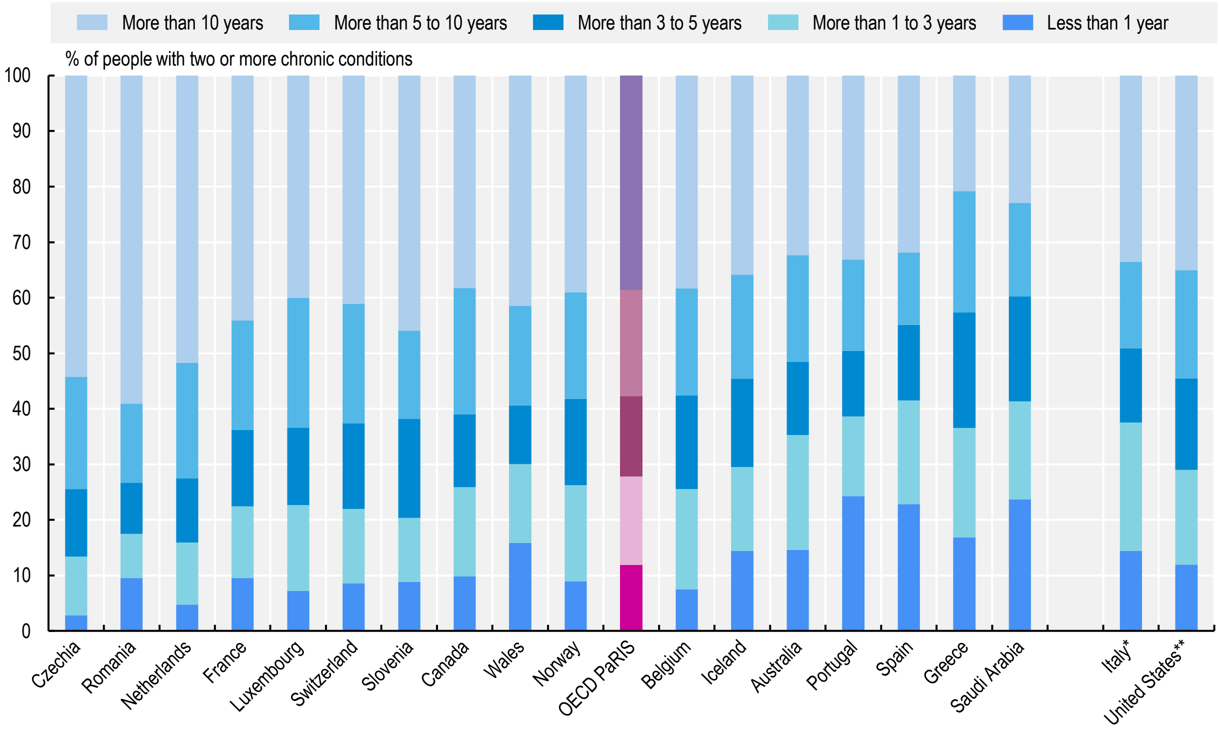
> ***Act on Public Health Insurance and on Amendments and Additions to Certain Related Acts***
>
> *"Patient registration is an administrative act, which according to Act no. 48/1997, par. 11 Coll. (Act on Public Health Insurance and on Amendments and Additions to Certain Related Acts) must always follow after the doctor of the registering provider accepts the patient under his regular care. The registering provider in Czech ambulatory care is a general practitioner, a general practitioner for children and adolescents, a dentist (stomatologist) and also a gynaecologist.*
>
> *The patient has the right to choose a registering ambulatory physician in the above-mentioned primary care specialties and can change him again no earlier than 3 months after the previous registration.*
>
> *Major part of the payment to the registering physician is made up of the so-called capitation, which is derived from the number of registered patients. Capitation payment varies according to age indices, which take into account the patient's cost intensity."*

Source: https://mzd.gov.cz/wp-content/uploads/wepub/18564/40341/48_1997%20Coll..docx.

About half of people with multiple chronic conditions in Italy, Portugal, Spain, Saudi Arabia and Greece have relationships lasting five years or less. More than 20% of people with multiple chronic conditions in Spain, Portugal or Saudi Arabia report a relationship of less than a year.

Figure 3.18. About half of people with multiple chronic conditions have a relationship of more than five years with their primary care professional

Percentage of people with multiple chronic conditions reporting the length of time with the same primary care professional



Note: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older.
Source: OECD PaRIS 2024 Database.

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3.6. How countries can enhance care for people with multiple chronic conditions

Healthcare systems can redesign their services to enhance care for their population living with multiple chronic conditions. Essential elements of a healthcare system which offer high quality chronic care management are delivery system design, clinical information systems, decision support and self-management support (Wagner et al., 2005[31]). Strong primary care systems can assure effective, efficient care and self-management support (OECD, 2020[20]). Primary care professionals can promote care for people living with chronic conditions by considering scientific evidence and patient preferences. Health systems need to invest in and strengthen primary care to ensure that primary care practices and professionals are equipped to serve to the needs of their populations.

Box 3.8. Key policy recommendations emerging from the PaRIS data to enhance quality of care for people with multiple chronic conditions

Co-designing and implementing integrated multimorbidity care programmes

To ensure healthcare systems deliver meaningful outcomes for people with multiple chronic conditions, the active inclusion of people with lived experience in decision-making processes is essential. Traditional healthcare structures, often organised around individual diseases or organ systems, fail to address the complex realities of multimorbidity. The growing prevalence of this multimorbidity necessitates a shift toward a people-centred approach, emphasising integrated care over disease-specific silos. Co-designing programmes tailored to the unique needs of people living with multimorbidity is critical, as this patient group is large and expanding rapidly, particularly in primary care settings (van der Heide et al., 2018[32]). To support this transformation, healthcare systems must invest in cross-cutting research, adaptable infrastructures, and funding mechanisms that extend benefits across multiple disease areas, fostering a more integrated and effective approach to care.

Reinforcing care co-ordination for people with multiple chronic conditions through continuity

Effective care co-ordination is essential for managing multiple chronic conditions. It is essential that primary care professionals co-ordinate care closely with other specialists, mental health care professionals, and social care services to ensure that patients receive seamless, integrated, and "trouble-free" care. Achieving this requires information continuity, supported by the exchange of health information and medical record sharing. Beyond the care co-ordination role traditionally held by family doctors, introducing dedicated care co-ordinators or other non-physician staff within primary care settings can enhance the management of care. These co-ordinators can oversee appointments, prevent duplications, organise blood tests and other diagnostics, and ensure that treatment plans are consistent across providers. Such measures not only improve patient outcomes but also reduce inefficiencies across the healthcare system (Khatri et al., 2023[28]).

Improving medication reviews for patient safety and efficacy

Regular medication reviews can improve outcomes and experiences of people with multiple chronic conditions by preventing inappropriate polypharmacy and adverse drug interactions (McCahon et al., 2022[33]). Primary care professionals have a unique position to review medication plans, however they need to be equipped to assess and adjust medication plans as needed, in collaboration with patients and pharmacists, to optimise medication safety and efficacy, particularly for patients who take multiple medications.

PaRIS stresses that access to mental health care and its integration into primary care need to be more systematic to enhance the care of people with multiple chronic conditions. Addressing the mental health needs of people with multiple chronic conditions requires comprehensive mental health services integrated into chronic care management (Bierman et al., 2021[34]). Healthcare professionals should be equipped to recognise and address mental health issues, offering (referral to) counselling, therapy, and support groups as part of routine care. This integration ensures that mental health care is a core component of chronic care management.

Physical and mental health are profoundly interconnected, making a clear distinction between the two challenging. While PaRIS collects data on both physical functioning and psychological well-being, it's crucial to understand that mental health conditions are also physical. This is because mental health conditions might involve physical changes in the brain and body, affecting various bodily functions. Therefore, the separation often made between these two aspects of health can be misleading, and an approach to health that considers the interplay of physical and mental well-being is essential for effective healthcare for people with multiple chronic conditions.

Policies should go beyond traditional healthcare and reinforce social support to people with multiple chronic conditions. Social support systems play a crucial role in enhancing well-being among people with multiple chronic conditions. Family, friends, community, and patient organisations can provide emotional and practical assistance, helping to alleviate some of the burdens associated with chronic conditions. Social prescribing and lifestyle medicine initiatives in primary care, which connect patients with community resources and activities, can also enhance well-being by promoting social interaction and reducing isolation. Investing in social care, particularly for people with multiple chronic conditions, is essential to ensure better social lives for this growing population.

People with multiple chronic conditions face a higher risk of diminished well-being, poorer health outcomes and worse healthcare experiences. Health policies need to shift from single-disease approach to people-centred care and address the needs of people living with multiple chronic conditions. Healthcare systems with strong primary care have the possibility to enhance the care of people with multiple chronic conditions by providing co-ordinated care, self-management support and person-centred care. Relying solely on the results of randomised controlled trials, which often exclude people with multiple chronic conditions is unlikely to yield valuable insights for policy makers. To effectively address these needs healthcare systems must embrace a broader evidence base that incorporates the perspectives of those with lived experiences. Co-developing healthcare solutions with people living with multiple chronic conditions is essential to ensure that these transformations are appropriate, acceptable, and successful.

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4

Advancing healthcare systems towards people-centred care

People-centred care improves health outcomes and patient experiences by focusing on strong patient engagement and effective care co-ordination. This approach is particularly beneficial for managing chronic conditions, as it empowers patients to actively participate in decisions about their health and enhances patient confidence to manage their own health. However, significant challenges remain, such as insufficient care planning, limited use of digital tools, information that is difficult to understand, and poor continuity of health information across providers. The PaRIS data reveal that patients who are involved in decision-making are more confident in managing their health, but advanced self-management support is still underutilised. Additionally, older and less educated populations face greater difficulties in understanding health information and navigating digital health tools, which further hinders their care experience. To overcome these obstacles, healthcare systems must implement targeted actions to enhance care co-ordination, improve health literacy, and use digital tools effectively, ensuring that people-centred care is delivered seamlessly across all levels of the healthcare system.

In Brief

What PaRIS data tell us about people-centred care

- **Person-centred care, strong patient engagement strategies and better care co-ordination improve health outcomes and patient confidence in managing chronic conditions.** Higher usage of care planning for patients with chronic condition, accessible and effective communication between professionals and patients, continuity of health information throughout the healthcare system, and higher availability of easy-to-use digital tools are all associated with more person-centred care. This is even more important for those with lower health literacy and digital literacy skills. The PaRIS data highlights important opportunities for targeted actions to ensure seamless, co-ordinated, and patient-centred healthcare across systems.
- **People are more confident in managing their health when doctors involve them in decision-making and support them in taking a more active role in managing their health conditions**. More than 80% of patients in the PaRIS report high levels of involvement in decision-making. This is particularly important, considering that people tended to be 10 percentage points more confident in self-management when doctors involve them in decisions about their care. Patients are also 14 percentage points more confident to manage their health when they receive strong self-management support from their primary care providers. Self-management support seems to be particularly effective in improving patient's confidence in Norway, Portugal, Spain and Wales (United Kingdom).
- **Care plans are an underutilised tool with significant potential to enhance the experience of care co-ordination when effectively communicated and implemented.** According to patient-reported data, 25% of patients with chronic conditions have a care plan available, while their providers report that 45% use care plans for their patients. This shows not only that there is room to improve the use of care planning, but also that there is a breakdown in communication about between primary care practices and their patients about care planning. Average results mask differences across countries: in some countries including Australia, the Netherlands, Saudi Arabia, Portugal, Spain and Wales primary care practices report higher usage of care plans than their patients. For another group of countries, including France, Luxembourg, Romania, Greece and Czechia, patients with chronic conditions report higher usage of care plans than their corresponding primary care practices.
- **Patients need greater access to relevant health information to support a more person-centred experience.** The most widely use of self-management support reported by primary care practices is the provision of verbal information during consultation, which is used by 89% of practices. Other forms of support, including the distribution of written health information (63% of practices) or referral to self-management classes (34%) are less often used. PaRIS data indicates that the distribution of written information (printed or digital) by doctors is associated with more person-centred care.
- **Giving patients enough time during consultations and ensuring clear, open communication with healthcare professionals are key to delivering more person-centred care.** Doctors who take the time to engage meaningfully with patients and explain things in a clear, understandable way contribute significantly to better patient experiences. Each of these factors is linked to approximately a 15% improvement in person-centred care scores, even after accounting for patient characteristics such as the number of chronic conditions, age, sex, and education.

- **To reduce health inequalities, websites and digital health tools of primary care practices and health services need to be easier to understand and navigate.** Older and less educated people have difficulty understanding health information and have lower confidence than younger people in using digital technology to manage their health. In Iceland, Australia, France, Wales, Canada, Czechia and Switzerland, the more educated are at least 10 percentage points more likely to be confident in using health information from the internet. Moreover, on average people with high education are 26 percentage points more likely to say that their primary care practice website is easy to use.
- **Continuity of care suffers from poor information exchange.** While electronic health records are used in 95% of the primary care practices participating in PaRIS, only half of these practices can exchange these records electronically with other practices. In the Netherlands, Belgium and Norway, more than 80% of practices report the ability to exchange electronic health information, while in Slovenia, Romania and Greece less than one-quarter of practices can do so. Even if the technical ability to exchange information electronically may be in place using existing systems, PaRIS results indicate the need to improve the ability of the workforce to do so.
- **Digital tools can be used to improve person-centred care experience in primary care, but their availability and adoption remain uneven.** While more than half (54%) of patients with chronic conditions have booked primary care appointments online and 43% have ordered repeated prescriptions online, only 17% have accessed their electronic medical records and just 7% have used videoconference in primary care. This highlights the critical need to expand and improve the deployment of digital technologies in primary care to elevate overall care experiences.

4.1. Measuring people-centredness through PaRIS

This chapter aims to provide evidence and policy insights about the extent to which people-centredness improves health outcomes and experiences that matter most to people. It also examines how key measures of people-centredness care contribute to better outcomes and experiences, and explores the opportunities offered by digital technology to facilitate both co-production and co-ordination (Øvretveit, 2017[1]; Lember, Brandsen and Tõnurist, 2019[2]).

Since 2017, the OECD has placed particular emphasis on building a shared understanding around the concept of people-centredness, and how to assess it by collecting and reporting the limited existing data and identifying policies that are more effective in achieving people-centred healthcare systems (OECD, 2021[3]). The OECD Framework on People-Centred Healthcare systems (2021) identified the following five dimensions that can guide the assessment of people-centredness (OECD, 2021[4]):

- Voice – the formal inclusion of people in health policy decision-making bodies or processes;
- Choice – the ability for people to choose their healthcare providers and access services without barriers;
- Co-production – people actively managing their health by receiving accessible information, being consulted, and using digital tools to engage with the health system;
- Integration – the co-ordination of care to provide seamless and integrated care experiences, with the support of digital technologies and electronic clinical records; and
- Respectfulness – ensuring people receive personal attention, are treated fairly, and are shown respect by healthcare professionals.

This chapter particular focuses on co-production of health and co-ordination of care. It does so by examining more closely three of the PaRIS10 indicators discussed earlier in Chapter 2: *confidence in self-management*, as a measurement of co-production of health by the patient; *experienced co-ordination*, as a measurement of integration of care from the patient’s perspective; and *person-centred care,* as an overall measurement of the patient’s experience of people-centredness of healthcare services.

4.1.1. Confidence in self-management

Self-management can be defined as a process through which people with chronic disease actively cope with their condition in the context of their day to day lives (O’Connell, Mc Carthy and Savage, 2018[5]). In PaRIS, self-management is defined as the active participation by a patient in his or her own healthcare decisions and interventions. With the education and guidance of professional caregivers, the patient promotes his or her optimal health or recovery.

The closely associated concept of self-management support is a set of techniques and tools that help patients take an active role in the management of their conditions, such as provision of brochures and literature, health patient portals, reference and instruction about self-monitoring including the use of devices, referral to health education classes, among others. Studies have shown that patients receiving self-management support are more likely to have improved clinical outcomes or reduced care utilisation without compromising outcomes (Chrvala, Sherr and Lipman, 2016[6]; Panagioti et al., 2014[7]).

4.1.2. Experienced co-ordination of care

Experienced co-ordination of care can be understood as the patient’s perspective of integrated care, which is achieved when people experience a seamless and continuous journey through different healthcare providers and settings. Whether a patient is visiting their primary care professional, another specialist, or a hospital, their care should be well co-ordinated and consistent.

When care is fragmented, it often means that these different parts of the healthcare system do not communicate well with each other. For example, patients might receive conflicting advice from different doctors, or their medical records may not be shared properly between primary care and the hospital. This lack of co-ordination can lead to confusion for the patient, missed or duplicated tests, and even medication errors. Such fragmentation is not only inefficient, but it also makes it harder for patients – especially those with chronic conditions or complex health needs – to get the care and services they need to manage their health effectively (Behr and Theune, 2017[8]). In contrast, when care is well-co-ordinated, it ensures that all healthcare providers involved are on the same page, which can improve a patient's overall well-being, quality of life, and ability to manage their own care (Shaw, Rosen and Rumbold, 2011[9]).

4.1.3. Person-centred care

Person-centred care can be understood as an overall measurement of the experience of people-centredness of a given health system, from the perspective of the patient. It is a description of the broad model of individual care experienced by a person, as provided by a healthcare professional. In this sense, person-centred care is an approach that focuses on managing the health of people, ensuring their preferences and needs are central to their care, empowering them to participate in decisions, and providing well-co-ordinated support to help them manage their health and well-being.

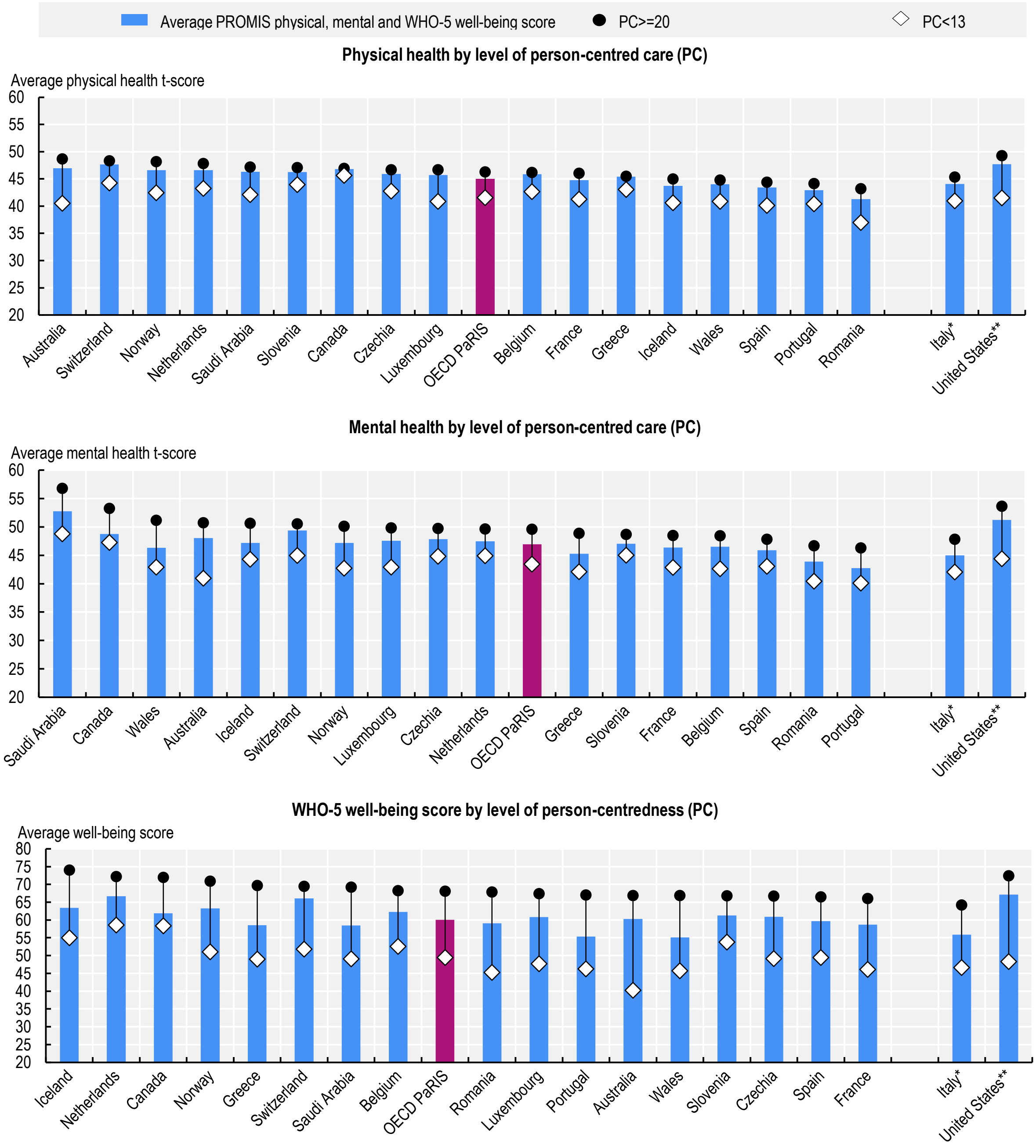
The concept of person-centred care can be better understood by contrasting it with disease-centred models of care which focus on specific clinical outcomes (Mercadal-Orfila et al., 2024[10]). In a disease-centred model, people with chronic conditions are at risk of receiving inappropriate treatments and the lack of co-ordination leads to unnecessary duplication, conflicting treatments, and recommendations. By contrast, person-centred care seeks to deliver co-ordinated care across settings and focuses on the whole person instead of the disease.

4.2. People who rate their care as more person-centred also have better physical and mental health, and better well-being

Many claims on people-centredness of healthcare systems are based on notions of respect to people's needs and preferences. While this is an important goal by itself, the PaRIS data shows that people who rate their care as more person-centred also have better physical and mental health, and better well-being (Figure 4.1). In all countries, people with chronic conditions who are in the top quartile of person-centredness of care (which corresponds to a person-centred care score of 20 or more, see Box 4.6) feel healthier and report better well-being than the people in the bottom quartile of person-centred care (score of 13 or less).

These results consistently show that people with chronic conditions who experience more person-centred care report better health, even after accounting for differences in age and sex distributions across countries. However, the analysis does not control for individual level-factors, such as the number of chronic conditions or educational level. To address this, Box 4.1 takes the analysis one step further. The results confirm that, even when these factors considered, people with chronic conditions report better health outcomes when they receive more person-centred care.

Figure 4.1. People who report more person-centred care are healthier and have better well-being



Note: The figure compares health outcomes of people with low-medium person-centredness care (score below 13 points out of 24) and the group with high person-centredness care (score above or equal to 20 points out of 24). Physical health: PROMIS® Scale v1.2 – Global Health component for physical health is a T-score metric with a range of 16-68, and a good-fair cutoff of 42, higher values represent better physical health. Mental health: PROMIS® Scale v1.2 – Global Health component for mental health is a T-score metric with a range of 21-68, and a good-fair cutoff of 40, higher values represent better mental health. WHO-5 well-being index. Response to five questions measuring well-being. raw scale 0-25 converted to 0-100 scale, higher scores represent higher well-being. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between groups are statistically significant ($p<0.05$) except for Canada in the PROMIS Physical Health score and PROMIS Mental Health score.
Source: OECD PaRIS 2024 Database.

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Box 4.1. Understanding the relationship between person-centred care and health outcomes

The PROMIS® Scale v1.2 – Global Health component for physical health is a measure to assess a person's ability to carry out every day physical activities, degree of pain and fatigue. Scores below 42 are an indication of poor health. Patient-level data was analysed according to the equation below, to estimate the association between person-centredness score and physical health controlling for sex, age, number of chronic conditions, and education level of the patient, while also controlling for unobserved variation across countries and providers with a multilevel model with random intercepts. In the equation, Y_{ijk} is the physical health score for patient *i*, who received care from provider *j,* within country *k*.

$$\begin{aligned} \text{Yijk} \; = \; & \beta 0 + \beta 1\ (\text{Person} - \text{centred care scoreijk}) \\ & + \ \beta 2\ (\text{Number of chronic conditionsijk}) + \beta 3\ (\text{Maleijk}) \\ & + \ \beta 4\ (\text{Age 75 plusijk}) + \beta 5\ (\text{Age 65 to 74ijk}) \\ & + \ \beta 6\ (\text{Age 55 to 64ijk}) + \beta 7\ (\text{High educationijk}) \\ & + \ \beta 8\ (\text{Middle educationijk}) + \text{uj} \ + \text{vjk} + \epsilon \end{aligned} \tag{Equation 1}$$

Results indicate that, on average, each additional chronic disease is associated with a decrease of 2.7 points in the physical health score, while each additional point in the person-centred care score is associated with an increase of 0.4 points in the physical health score, while controlling for gender, age, education status, and unobserved characteristics of countries and providers.

To make these results easier to understand, Table 4.1 presents the predicted physical health score of stylised patients with certain characteristics – age, gender, education status, and the level of person-centredness experienced by them. Three levels of the person-centredness scale, which ranges from 0 to 24 points, were chosen to represent low (8 points), medium (13 points) and high scores of person-centred care (20 points). Results show, for example, that a woman between 54 and 65 years old who has low education, lives with three chronic conditions, and experiences low person-centred care is expected to have a physical health score of 37 (below the threshold of 42 for being in good health). If she were to experience high person-centred care, her physical health scores would have been 42.

Table 4.1. People with more person-centred care have better health outcomes, even when individual factors such as gender, age, education level and chronic conditions are considered

Predicted PROMIS® Scale v1.2 – Global Health component for physical health scores for stylised patients according to the level of person-centredness

Person-centred care score	Woman, 54 to 65 years old, low education, 3 chronic conditions	Woman, over 75 years old, middle education, 3 chronic conditions	Man, 45 to 54 years old, high education, 2 chronic conditions	Man, 65 to 74 years old, low education, 2 chronic conditions
Low person-centred care score (PC = 8)	37.0	38.0	43.9	42.7
Medium person-centred care score (PC = 13)	39.1	40.1	45.9	44.8
High person-centred care score (PC = 20)	42.0	43.0	48.9	47.7

Note: Results are estimated from the analysis of patient-level data from all 19 countries.

4.3. How people-centred are PaRIS countries?

While OECD countries have made important progress in the key dimensions of people-centred care (OECD, 2021[3]), PaRIS results show that two out of five people (58.9%) living with chronic conditions feel confident in managing their health, and about only half (8.2 out of 15) of the ideal level of care co-ordination is being achieved.

Table 4.2 presents more details about the dimensions of co-production of health and co-ordination of care. The table includes one overall indicator for assessing the extent to which patients experience each of these dimensions (co-production and co-ordination), one indicator reflecting the level of support they receive from the practices where they are treated for each dimension, and one indicator that relates to the role that digital technology can play to support each dimension.

Table 4.2. A snapshot of co-production of health and co-ordination of care for people with chronic conditions in PaRIS countries

	Co-production of health			Co-ordination of care		
	Confidence in managing their own health (CS)	Patient receives enough support to manage their own health	Confidence in using health information from internet (eHEALS)	Experienced co-ordination of care (EC)	Patients treated in practices well-prepared to co-ordinate care	Patients treated in practices that can exchange medical records electronically
	Percentage of patients who are confident (%)	Percentage of patients (%)	Percentage of patients (%)	P3CEQ Co-ordination score (0 to 15)	Percentage of patients[3] (%)	Percentage of patients[3] (%)
OECD PaRIS	**58.9**	**63.2**	**19.3**	**8.2**	**55.6**	**57.1**
Australia	60.6	73.3	30.7	9.6	99.1	98.6
Belgium	63.0	69.4	7.7	8.8	45.4	99.9
Canada	59.3	76.0	26.6	9.3	76.2	81.6
Czechia	67.5	68.0	33.0	9.2	95.1	6.0
France	92.0	61.8	31.1	8.4	27.6	69.2
Greece	37.3	52.7	9.3	7.1	12.1	2.7
Iceland	34.5	52.6	17.3	6.2	0.5	61.0
Luxembourg	55.9	68.2	10.9	8.5	59.3	18.2
Netherlands	77.6	54.4	23.7	7.3	96.5	99.9
Norway	47.2	60.4	15.8	7.6	63.0	99.8
Portugal	61.3	48.9	11.9	7.3	52.7	79.8
Romania	42.5	69.8	6.8	10.3	20.7	5.1
Saudi Arabia	73.2	47.0	18.4	6.5	60.2	27.2
Slovenia	61.2	62.8	11.8	8.2	20.4	4.9
Spain	66.9	63.9	9.2	8.5	60.9	29.9[4]
Switzerland	67.1	81.9	18.7	10.3	88.0	54.6
Wales	50.7	42.5	33.5	5.0	82.6	94.0
Italy[1]	24.3	66.5	4.9	9.5	10.7	13.4
United States[2]	73.7	71.4	31.6	9.3	NA	NA

1. Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions.
2. United States sample only includes people aged 65 years or older and does not include data collected from practices.
3. Calculated by matching patient data with primary care practice data: number of patients in practices reported as well-prepared to co-ordinate care (practice questionnaire) divided by the total number of patients per country (patient questionnaire). Results are age and sex-standardised across countries.
4. Calculated based on the potential for data exchange at a national level, rather than being limited to the patient's usual care setting. In Spain, 100% of medical records are electronic, and information is exchanged digitally.

Source: OECD PaRIS 2024 Database.

On average, just over three out of five (58.9%) people living with chronic conditions report being confident in managing their own health and a similar proportion (63.2%) say they receive enough support to self-manage. About one out of five people (19.3%) report being confident in online health information. The average score of co-ordination of care reported by people with chronic conditions was just above half of the total possible score (8.2 out of 15), which would reflect and ideal experience of co-ordination of care from the perspective of patients. Just above half of the people with chronic conditions seek primary care in practices that report being well-prepared to co-ordinate care (55.6%) and being able to exchange medical records electronically (57.1%).

4.4. Co-production of health: Achieving people's active participation in their own healthcare decisions and interventions

Ultimately, for co-production of health to take place, patients must have the confidence that they can manage their own health and well-being (Krist et al., 2017[11]). This is even more important in a context where health needs have become more complex, driven by population ageing and rising incidence of chronic conditions across the OECD (Cristea et al., 2020[12]), while a pipeline of new therapeutic options make navigating the care landscape ever more difficult (Johnson, 2011[13]). From the perspective of patients, co-production requires that people receive sufficient information from their healthcare professionals and other trusted sources, including dedicated patient portals, that they have opportunities to ask questions and make decisions during the care process and that they are sufficiently health literate to understand options (Realpe and Wallace, 2010[14]). The role of shared decision-making has been further highlighted as a pinnacle of patient-centred care (Barry and Edgman-Levitan, 2012[15]).

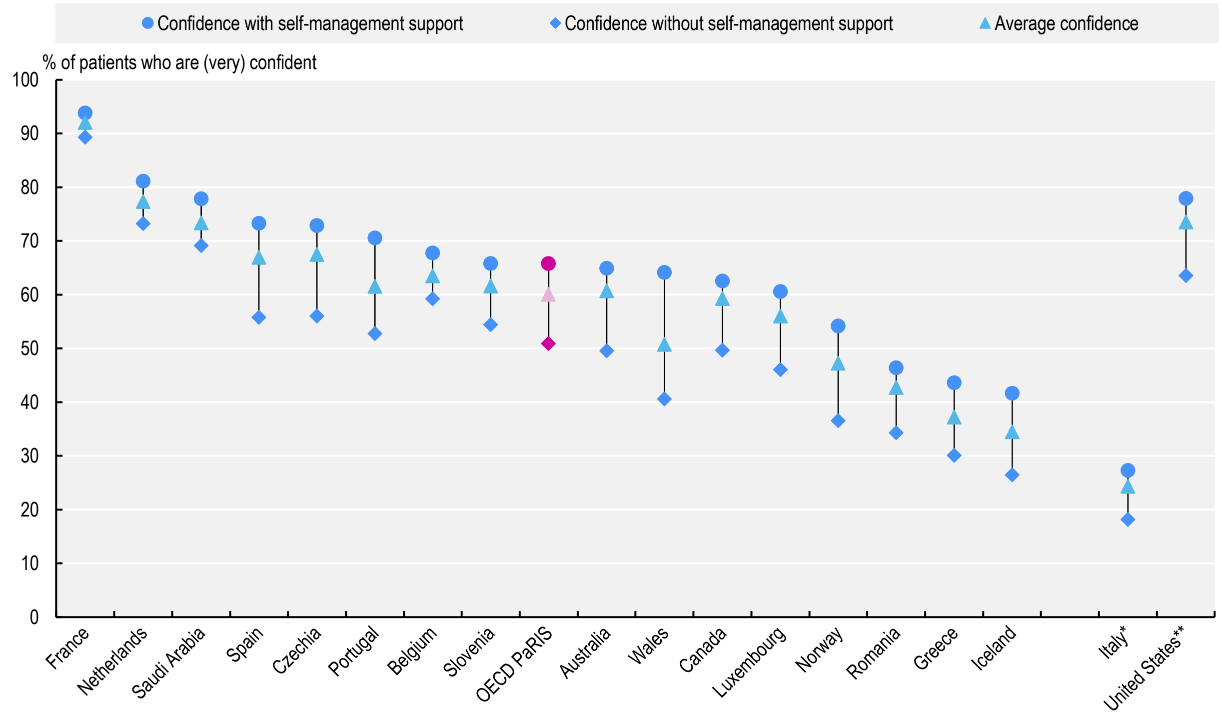
4.4.1. People feel more confident about managing their health when they receive support from their healthcare professionals

On average, patients treated in practices that offer self-management support are 14 percentage points more likely to report being confident that they can manage their own health (Figure 4.2). This is an example of co-production, showing the benefits of a proactive, collaborative partnership between healthcare providers and patients in managing health outcomes.

Self-management support includes tools and techniques that help patients take an active role in the management of their condition, such as the distribution of information, referral to self-management classes, or explicit setting of health goals and action planning. Through self-management support healthcare providers can expect to equip patients with the necessary tools, knowledge, and confidence to manage their chronic conditions effectively. By offering education, skill development, and emotional support, providers empower patients to take an active role in their health, making informed decisions and performing daily tasks that contribute to better health outcomes. Essentially, self-management support can serve as the foundation that enables the co-production of health, ensuring that patients are capable and confident in their role as partners in their care.

Figure 4.2. Patients who receive self-management support are more likely to be confident that they can manage their health

Percentage of patients who are confident they can manage their health and self-management support tools



Note: P3CEQ Questionnaire. Response to question: “How confident are you that you can manage your own health and well-being?”, “confident or very confident” versus “somewhat confident or not confident at all”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between groups are statistically significant ($p<0.05$) for Australia, Canada, Czechia, Greece, Iceland, Luxembourg, Norway, Portugal, Spain, Switzerland, the United States and Wales.

Source: OECD PaRIS 2024 Database.

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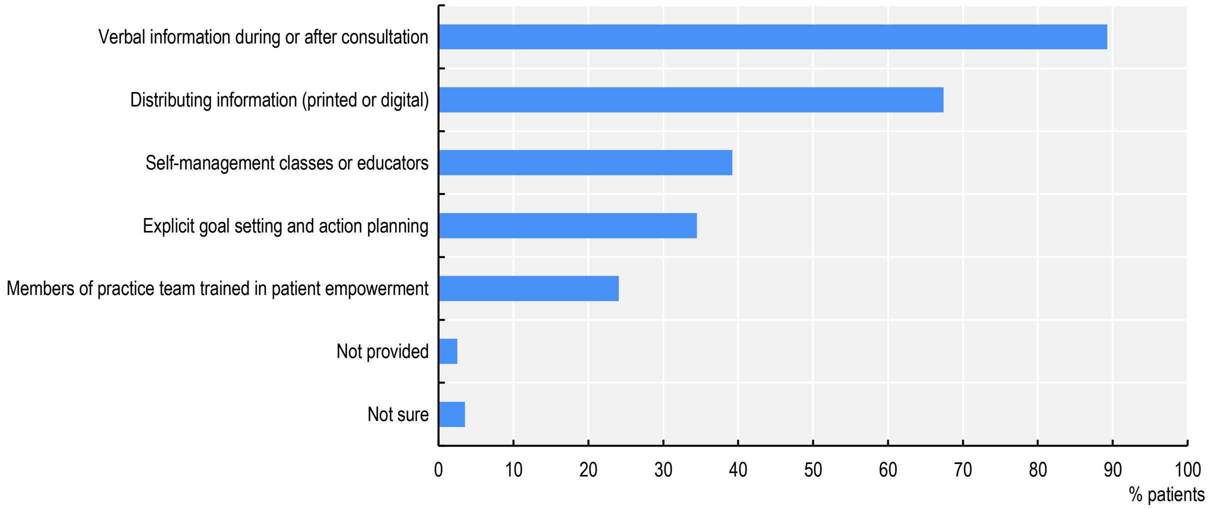
Based on information reported by primary care practices, the most common use of self-support are the provision of verbal information during or after the consultation (89% of practices report using this type of support) and the distribution of information, including pamphlets, booklets, or internet/web-based information (67% of patients) (see Figure 4.3). Other forms of self-support are less common, reaching only between a quarter and two-fifths patients. These include tools and techniques such as referrals to self-management classes (39%), explicit goal setting and action planning (34%), or care by practice members who are trained in patient empowerment (24%).

Figure 4.3. Most self-management support is provided through verbal or written information, while less than one-third of patients with chronic conditions receive more advanced forms of support

Percentage of patients with chronic conditions in practices offering each type of self-management support



Note: Data from a total of 78 470 patients with chronic conditions linked to primary care practices in all PaRIS countries except for the United States, where the provider questionnaire was not applied.
Source: OECD PaRIS 2024 Database.

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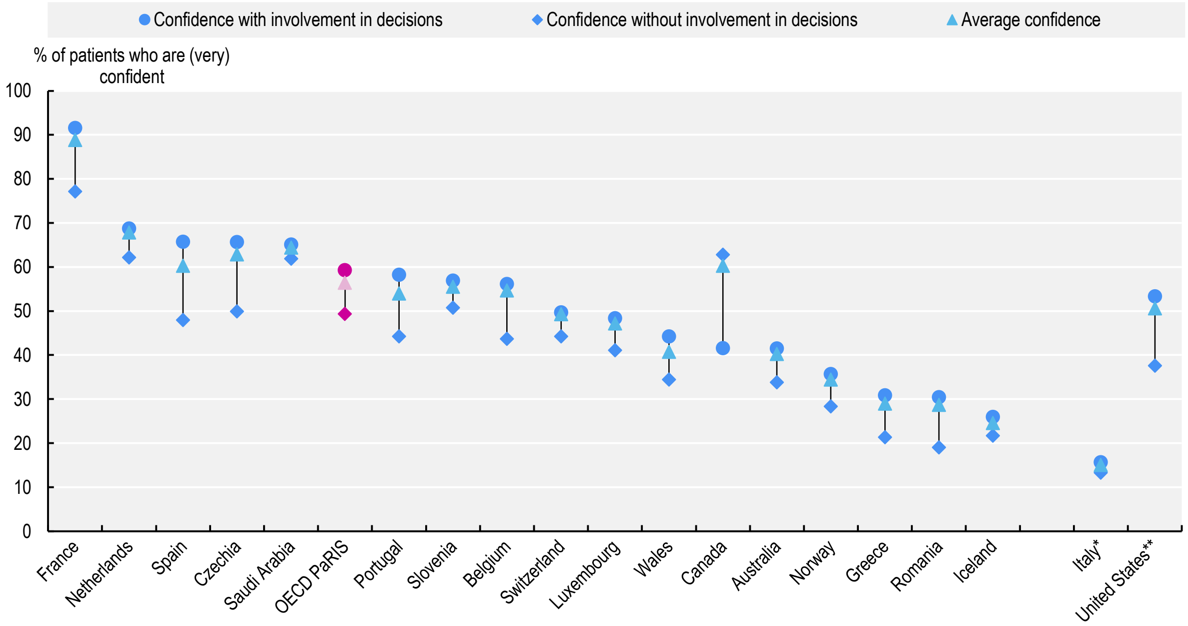
4.4.2. People with chronic conditions are more likely to be confident in self-managing when healthcare professionals involve them in their care

Across 18 countries, people who report that healthcare professionals involve them in decision-making are 10 percentage points more likely to feel confident in managing their own health (Figure 4.4). The only exception to this pattern was Canada, where people who reported being involved in decisions about their care were less likely to be confident in self-managing. This may be explained by the fact that Canada was the only country where the majority of respondents reported not being involved in decisions about their care: only 12% of Canadian respondents with chronic conditions reported being involved in decisions about their care versus 71% of PaRIS respondents.

Figure 4.4. Patients who report that doctors involved them in decisions about their care are more likely to be confident that they can manage their own health

Percentage of patients who are confident they can manage their health according to perception of being involved in decisions about their care



Note: P3CEQ Questionnaire. Response to question: “How confident are you that you can manage your own health and well-being?”, “confident or very confident” versus “somewhat confident or not confident at all”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between groups are statistically significant (p<0.05) for all countries except for Italy.
Source: OECD PaRIS 2024 Database.

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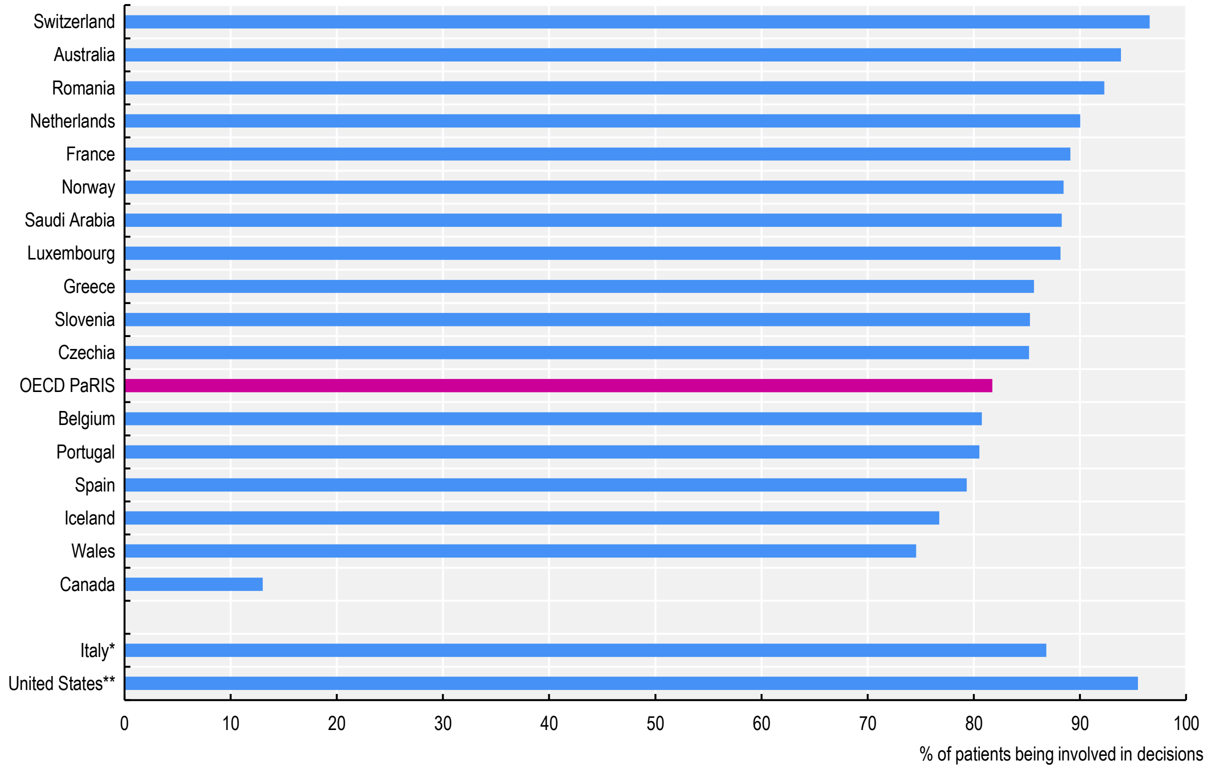
PaRIS results highlight that involving patients in medical decision-making is still not a standard in all countries, although it is above 75% for almost all countries (see Figure 4.5). Leading countries like Australia, Romania and the Netherlands report over 90% patient involvement, reflecting a strong commitment to patient-centred care. While the challenges of scaling up shared decision making in clinical practice are not to be underestimated (Fisher et al., 2018[16]), PaRIS findings suggest a need for targeted efforts, particularly in the countries where fewer people involved in medical decisions, to enhance patient engagement and align healthcare decisions with patients’ preferences and values.

> *“In a situation where we didn’t know how to face a viral infection, we jointly studied the different treatment options, considering the pros and cons of each alternative in the short, medium, and long term, as well as the adverse effects each option could produce, with the aim of making the best decision that would have the least impact on my quality of life and daily expectations. Thanks to shared decision-making, we made the right choice and anticipated treating the side effects as they appeared.”*
>
> *Manuel, 50 years old, male, married, living with a chronic kidney disease (transplanted twice), osteoporosis, hypertension, survivor of Non-Hodgkin lymphoma and other urological and skin cancers*

Figure 4.5. Percentage of patients involved in medical decision-making across countries is high in most countries

Percentage of patients with chronic conditions involved in medical decision-making across countries



Note: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older.
Source: OECD PaRIS 2024 Database.

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> *"My GP tends to let me be the judge of how I manage my lung conditions. I have a script for antibiotics and steroids in case I feel that I am having a flare-up of my condition. We discussed it fully as we both agreed that if I do have a chest infection, it is better to start antibiotics and steroids immediately. If I am not improving or I get worse, then I should make an appointment to see her or call an ambulance if my breathing is affected badly."*
>
> *Ilyn, a patient living with chronic lung conditions, rheumatoid arthritis, osteoarthritis and post-sepsis syndrome*

4.4.3. Written health information needs to be made more accessible, especially for older and less educated patients

The PaRIS results show how disparities in health literacy drive broader health inequalities across age and education. In nearly every country in PaRIS, the older and less educated people are more likely to find most health issues too complex to understand and report difficulties in understanding much of the health information they encounter. These aspects were combined to create a health literacy index (see Box 4.2).

Box 4.2. Measuring health literacy with PaRIS data

A set of 10 questions from Porter Novelli's *HealthStyles* survey included in the PaRIS patient questionnaire has been used to develop profiles of usage of health information by patients (Maibach et al., 2006[17]). One of these profiles refers to health literacy, using patients' agreement to these two items: "Most health issues are too complex for me to understand" and "I have difficulty understanding a lot of the health information I read". Both items were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating greater agreement with the statement.

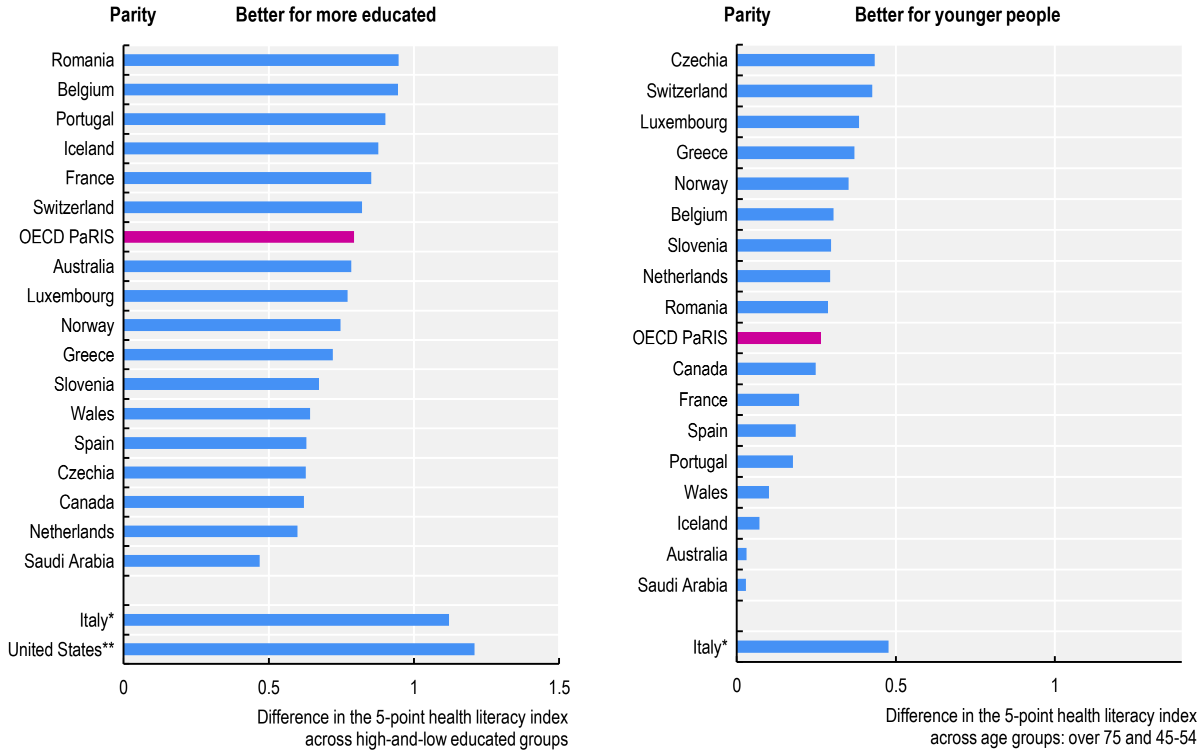
Cronbach's alpha ($\alpha = 0.7\ 445$) was used to evaluate the internal consistency of these two items, confirming their reliability as a single construct and aligning with commonly reported thresholds in the literature (Tavakol and Dennick, 2011[18]). The scale was calculated only for respondents who provided answers to both items. To ensure that higher scores on the final scale correspond to better health literacy, the responses were inverted, such that higher values indicate better understanding of health information and health-related concepts. This transformed variable provides a summary measure of health literacy, ranging from 1 (lowest health literacy level) to 5 (highest health literacy level).

Figure 4.6 presents disparities in the 5-item health literacy scale, showing the differences in the index for people with high education compared with those with low education (left panel) and the differences for people in the older group (over 75) compared with those in the younger group (45 to 54 years old). Countries such as Norway, Belgium and Switzerland show larger gaps for both age and education levels. Romania exhibits the widest gap in health literacy based on education, while Czechia shows the largest disparity based on age.

Health literacy is essential for patients to access, process and apply information relevant to their health and make decisions or adapt behaviours accordingly ((HLS-EU) Consortium Health Literacy Project European, 2012[19]). People with lower health literacy often struggle to understand medical instructions, leading to poorer medication adherence, which can exacerbate their conditions and hinder effective treatment (OECD, 2019[20]). Enhancing access to clear and comprehensible health information can help reduce inequities and improve overall health outcomes. Targeted strategies are needed to improve accessibility, particularly for these vulnerable groups. For example, the Clear & Simple guidelines developed by the United States National Institutes of Health recommends specific steps to developing health information for audiences with limited health literacy skills (National Institutes of Health, 2021[21]).

Figure 4.6. The younger and more educated groups show better levels of health literacy

Comparison of an average of a 5-point health literacy index across education and age groups



Note: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Results are age and sex-standardised across countries. Gaps between education groups are statistically significant (p<0.05) for all countries. Gaps between age groups are statistically significant (p<0.05) for Belgium, Canada, Czechia, Greece, Italy, Luxembourg, the Netherlands, Norway, Slovenia and Switzerland.
Source: OECD PaRIS 2024 Database.

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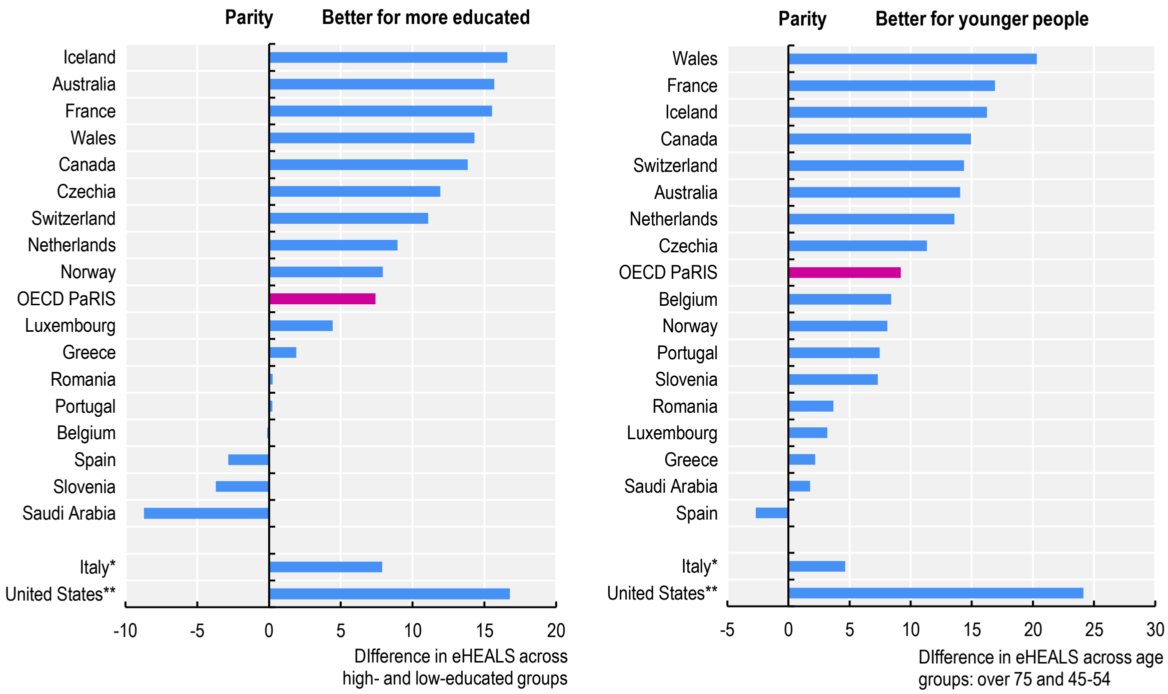
4.4.4. Older and less educated patients have troubles using digital health information

Compounding the trends observed in overall health literacy, older people and those with lower education are also less often confident in using health information online. This represents a dual challenge for communicating health information for older and less educated people.

Figure 4.7 shows the difference in the percentage of people who indicated that they are confident in using information from the internet to make health decisions across education groups (left panel) and age groups (right panel). The comparison of digital health literacy by level of education shows a difference of more than 15 percentage points in France, Iceland, Australia and the United States, in disfavour of those who are less educated. The opposite trend was observed in Spain, Saudi Arabia and Slovenia, while differences were very small in Romania, Portugal, and Belgium. The age gap in confidence in using health information comparing those 75 years old and over versus those aged 45 to 54 is more than 15 percentage points in Wales, France, Iceland, Canada and the United States, in disfavour of the older group. Spain is the only exception, where older people are more confident in using health information from the internet than the younger group.

Figure 4.7. Younger and more educated people have better digital health literacy

Comparison of percentage of people with confidence in using health information from the internet across education and age



Note: eHeals: Percentage of patients confident in using health information from internet. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Results are age and sex-standardised across countries. Gaps between education groups are statistically significant ($p<0.05$) for all Australia, Canada, Czechia, France, Iceland, Italy, Norway, Saudi Arabia, Switzerland, United States and Wales. Gaps between age groups are statistically significant ($p<0.05$) for Australia, Belgium, Canada, France, Iceland, Netherlands, Norway, Portugal, Switzerland and Wales.
Source: OECD PaRIS 2024 Database.

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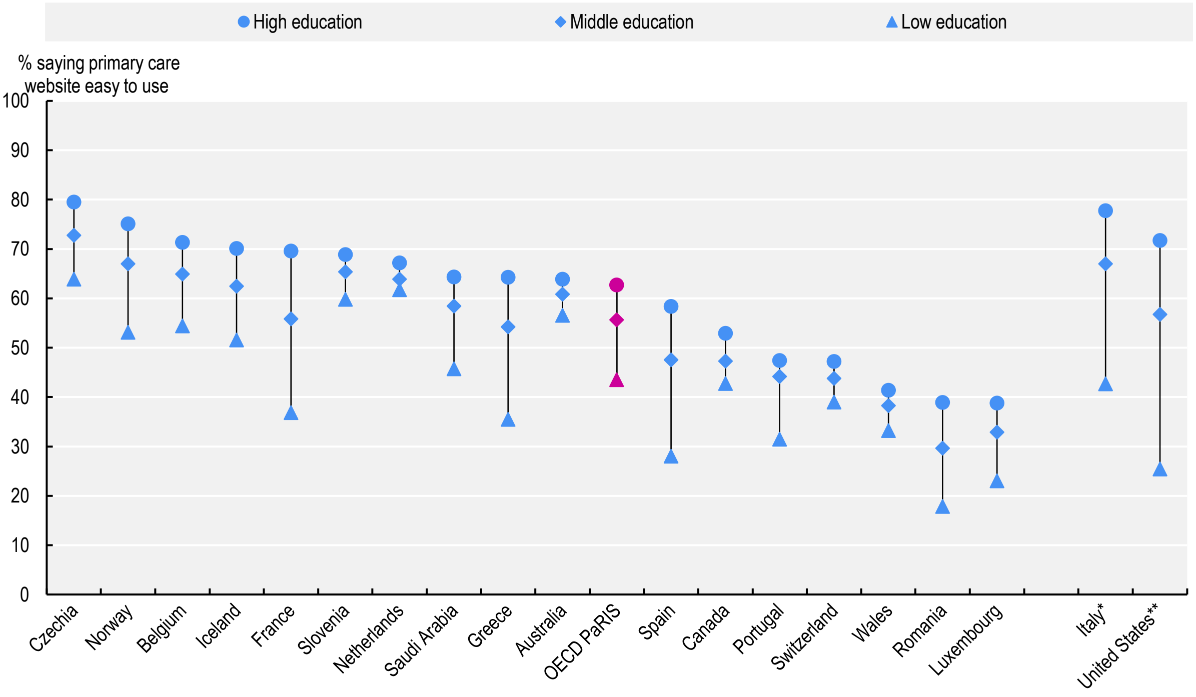
Digital health literacy, particularly confidence in accessing and selecting high quality information sources is essential, in addition to understanding and applying the information obtained from digital sources. Moreover, digital health literacy is increasingly important as healthcare systems become more digitalised, requiring patients to engage with eHealth services such as telemedicine, mobile health apps, and online health information resources (Gybel Jensen, Gybel Jensen and Loft, 2024[22]; Fitzpatrick, 2023[23]). For example, patients' confidence in managing their own health can potentially be enhanced by their access to their own health records and test results. High-quality health information and digital technology can be an enabler in these tasks (Neves et al., 2020[24]). Online sources also have a large potential to contribute to patient empowerment and increase confidence in self-management, however, there are also risks associated with health misinformation and disinformation (Farnood, Johnston and Mair, 2020[25]; Arora, Madison and Simpson, 2020[26]).

4.4.5. Making digital tools in primary care easier to use can help reducing health disparities

Although improving digital health literacy requires action of several levels, concrete interventions can help address disparities across age and education levels. For example, the websites of primary care practices and health services in general can be made easier to use to retrieve relevant information regarding patients' care and care pathway. According to PaRIS data shown in Figure 4.8, in all countries people with low level of education are less likely to say that their primary care practice website is easy to use. On average the difference between the groups with high and low education exceeds 30 percentage points.

Figure 4.8. Lower educated people struggle to use their primary care practice's website

Percentage of people agreeing that their primary care practice website is easy to use by level of education



Notes: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between middle and low education groups are statistically significant ($p<0.05$) for Belgium, Czechia, France, Greece, Iceland, Italy, Luxembourg, Norway, Portugal, Romania, Saudi Arabia, Spain and the United States; between high and middle education groups for France, Greece, Italy, Norway, Spain and the United States; and between the high and low education groups for Belgium, Czechia, France, Greece, Iceland, Italy, Luxembourg, Norway, Portugal, Romania, Saudi Arabia, Spain and the United States.
Source: OECD PaRIS 2024 Database.

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> *"I never had a video consultation, because I am not tech friendly and I don't have the equipment to support such a method; furthermore, I have never heard of such a practice within the network of doctors I am familiar with"*
>
> *Lucy, 55 years old, divorced woman with osteoporosis, Hashimoto/thyroid, hypertension*

4.5. Co-ordination of care: Ensuring patients' seamless and continuous journey throughout the healthcare system

A people-centred healthcare system requires that patients experience a seamless and continuous journey through different healthcare providers and settings. Co-ordination of care is essential for those living with chronic conditions because they might require complex, long-term management involving multiple healthcare providers, services, and treatments. Low co-ordination of care is likely to lead to duplicated tests, conflicting treatments, medication errors, and overall poorer health outcomes. Effective care co-ordination helps ensure that all aspects of a patient's care are aligned, improving management of chronic conditions, preventing complications, and promoting better quality of life (Gartner et al., 2022[27]).

In PaRIS, a patient's experience of co-ordinated care ideally refers to care that is overseen by a single professional who serves as the main contact for the patient, is organised in a way that works for the patient, uses care planning, and provides information and support for the patients to self-manage their health (see Box 4.3).

Box 4.3. Experience of co-ordination of care (EC)

The summary indicator chosen to measure co-ordination of care in the PaRIS, the Person-Centred Co-ordinated Care Experience Questionnaire, is a scale composed by the sum of five components, each of them varying from 0 to 3 and adding up to 15. The description of the components is presented in Table 4.3.

Table 4.3. Description of the components of the experienced co-ordination scale (EC)

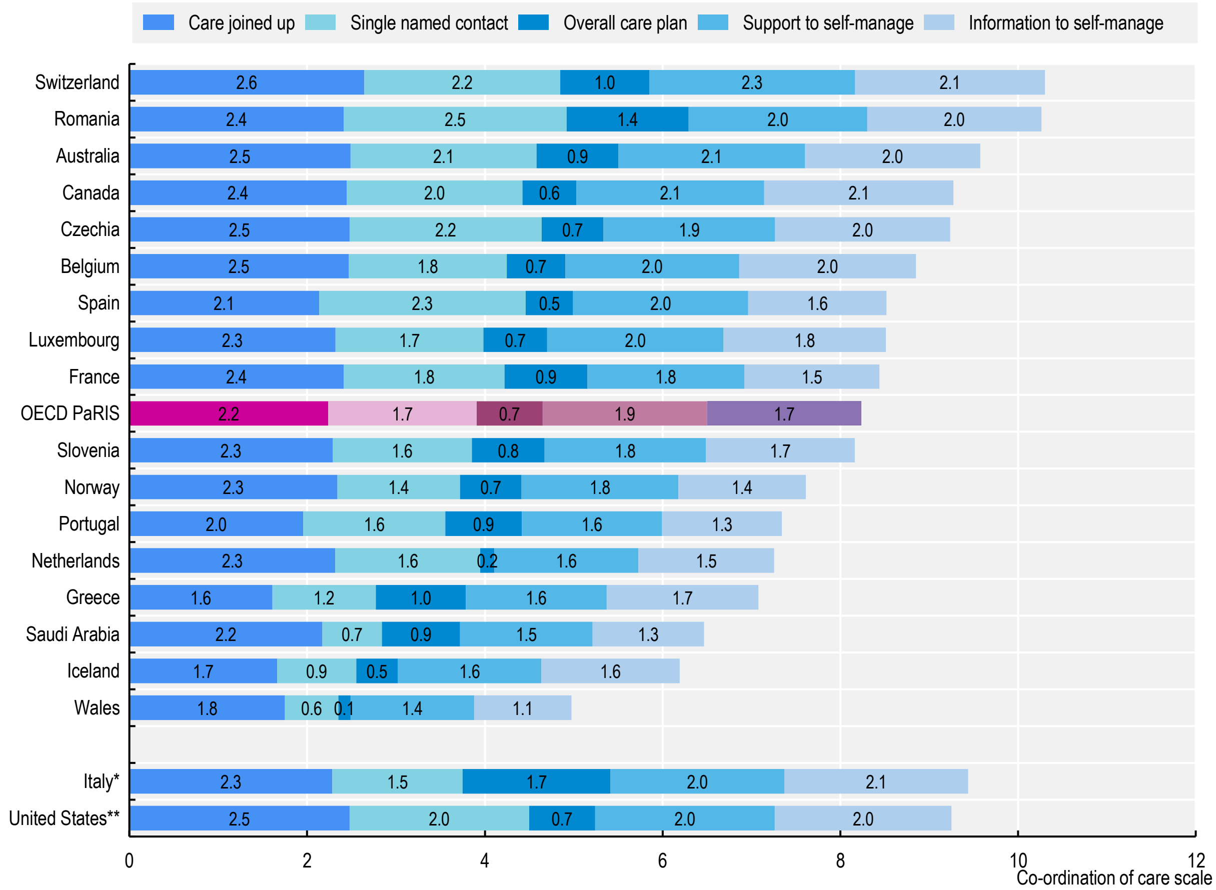
Component	Description
Care joined up	Response to the question: "Is your healthcare organised in a way that works for you?"
Single named contact	Response to the question: "Do you have a single professional who takes responsibility for co-ordinating your care across the services that you use?"
Overall care planning	An average of the responses to four questions: - "Do you have a care plan that take into account all your health and well-being needs?" - "Is this care plan available to you?" - "To what extent have you found your care plan useful for you to manage your health and well-being?" - "To what extent do all professionals involved in your care appear to be following the same care plan?"
Support to self-manage	Response to the question: "Do you receive enough support from their healthcare professionals to help you manage their own health and well-being?"
Information to self-manage	Response to the question: "To what extent have you received useful information at the time you need it to help you manage your own health and well-being?"

Source: Lloyd, H. et al. (2019[28]), "Validation of the person-centred co-ordinated care experience questionnaire (P3CEQ)", https://doi.org/10.1093/intqhc/mzy212.

4.5.1. Insufficient use of care planning hurts the experience of co-ordination of care

PaRIS data shows that out of the five components of co-ordination of care, insufficient use of care planning is clearly the one that contributes the most to lowering patient's overall experience of co-ordination of care, as indicated in Figure 4.9 below. Moreover, on average countries are achieving just above half (55%) of the maximum level of co-ordinated care (8.2 out of 15 points), and the best performer achieves 69% of highest possible score (10.3 out of 15 points).

Figure 4.9 Composition of care co-ordination scores (EC)



Note: P3CEQ Questionnaire. Response to five questions measuring care co-ordination. Scale ranges from 0 to 15, higher scores represent better care co-ordination. Description of the components of the experienced co-ordination scale (EC) in table 4.2. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Results are age and sex-standardised across countries.
Source: OECD PaRIS 2024 Database.

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The area in which most countries achieve the highest score is “care joined up”, with scores ranging from 1.6 to 2.6 out of a maximum of 3 points. The area where most countries rate the lowest score is overall care planning, which ranges from 0.1 to 1.7 out of a total of 3 points. These results point to insufficient use of care planning for patients with chronic conditions. It further highlights that some of the largest opportunities to improve co-ordination scores are in increasing the use of care planning.

4.5.2. Communication between patients and providers about the use of care plans needs to improve

Some of the challenges of developing and implementing care plans are made evident by crossing information reported by the patients and information reported by their healthcare professionals. On average for OECD PaRIS patients with chronic conditions, 24% report that they have a care plan available to them, while 45% of their corresponding primary care practices report that they use care plans for their chronic patients (Table 4.4). However, this average result masks a more nuanced distribution across countries.

For a group of countries, including Australia, the Netherlands, Saudi Arabia, Portugal, Spain and Wales primary care practices report higher usage of care plans than their patients. For another group of countries, including France, Luxembourg, Romania, Greece and Czechia, patients with chronic conditions report higher usage of care plan their corresponding primary care practices.

Table 4.4. Use and availability of care plans reported by primary care practices is twice as high as reported by patients with chronic conditions

Percentage of patients and primary care practices reporting use of care plans

Country	Practices' reporting that care plans are used and corresponding patients with chronic conditions reporting that care plans are used and available to them (% of patients in each group)						
	n	Practice no, patient no (1)	Practice yes, patient no (2)	Practice no, patient yes (3)	Practice yes, patient yes (4)	Yes reported by practices (2+4)	Yes reported by patients (3+4)
OECD PaRIS**	**69 907**	**41.2**	**34.7**	**14.1**	**10.0**	**44.7**	**24.1**
Australia	1 828	3.6	60.2	0.9	35.3	95.5	36.2
Belgium	3 182	57.4	20.2	17.0	5.4	25.6	22.4
Canada	2 908	59.4	18.1	16.6	5.9	24.0	22.5
Czechia	3 201	60.8	13.3	20.9	5.0	18.3	25.9
France	9 132	59.8	6.3	30.2	3.7	9.9	33.9
Greece	1 332	44.9	17.2	25.7	12.2	29.4	37.9
Iceland	1 211	68.8	14.0	14.5	2.7	16.8	17.2
Luxembourg	1 137	64.3	9.1	23.5	3.2	12.2	26.6
Netherlands	3 541	56.3	36.4	4.2	3.1	39.5	7.4
Norway	6 615	56.3	16.7	20.1	6.8	23.6	26.9
Portugal	7 792	30.3	38.0	12.4	19.3	57.3	31.7
Romania	1 073	25.6	19.5	32.0	22.9	42.4	54.9
Saudi Arabia	6 152	23.2	44.8	9.9	22.1	66.9	31.9
Slovenia	2 034	52.0	18.9	21.0	8.1	27.0	29.1
Spain	15 729	14.3	67.6	3.1	15.0	82.6	18.1
Switzerland	2 951	45.6	19.1	25.1	10.1	29.2	35.2
Wales	6 372	40.7	53.5	2.5	3.2	56.8	5.8
Italy[1]	942	29.6	11.5	38.1	20.8	32.3	58.9
United States[2]	3 987	NA	NA	NA	NA	NA	29.0

Note: Matched practices and patient results for all countries are shown for patients with valid practice data only, except for the United States which did not collect practice data. Unstandardised data. OECD PaRIS average does not include the United States. Practice-reported results corresponding to each patient include those that reported using care plans for patients with any chronic conditions, or those who reported using care plans for patients with specific chronic conditions or specific complex care needs, when their patients reported at least one of the following conditions (chosen due to their complexity or higher need for co-ordination of care): cardiovascular or heart condition, diabetes (type 1 or 2), Alzheimer's disease or other cause of dementia, chronic kidney disease, chronic liver disease, or cancer.

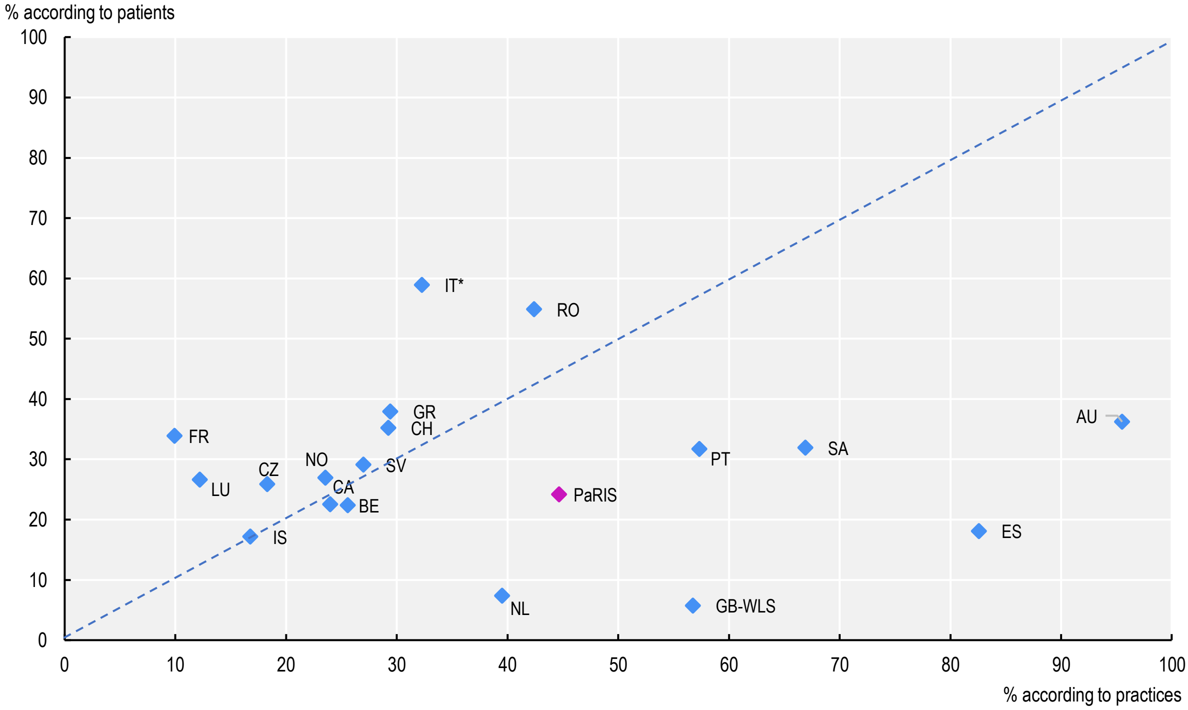
1. Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions.
2. United States sample only includes people aged 65 years or older.

Source: OECD PaRIS 2024 Database.

The two columns on the right of Table 4.4 are graphically shown in Figure 4.10. For countries above the 45 degrees line, use of care plans reported by patients is higher than that reported by practices, while for countries below the line, use of care plans reported by practices is higher than that reported by patients.

Figure 4.10. In most countries, there is a disconnect between the usage of care plans reported by practices and their patients

Share of practices who report using care plans for patients with chronic conditions and corresponding patients who report having a with chronic conditions who report having a care plan available to them (unstandardised data)



Note: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Matched practices and patient results for all countries are shown for patients with valid practice data only, except for the United States which did not collect practice data. OECD PaRIS average does not include the United States.
Source: OECD PaRIS 2024 Database.

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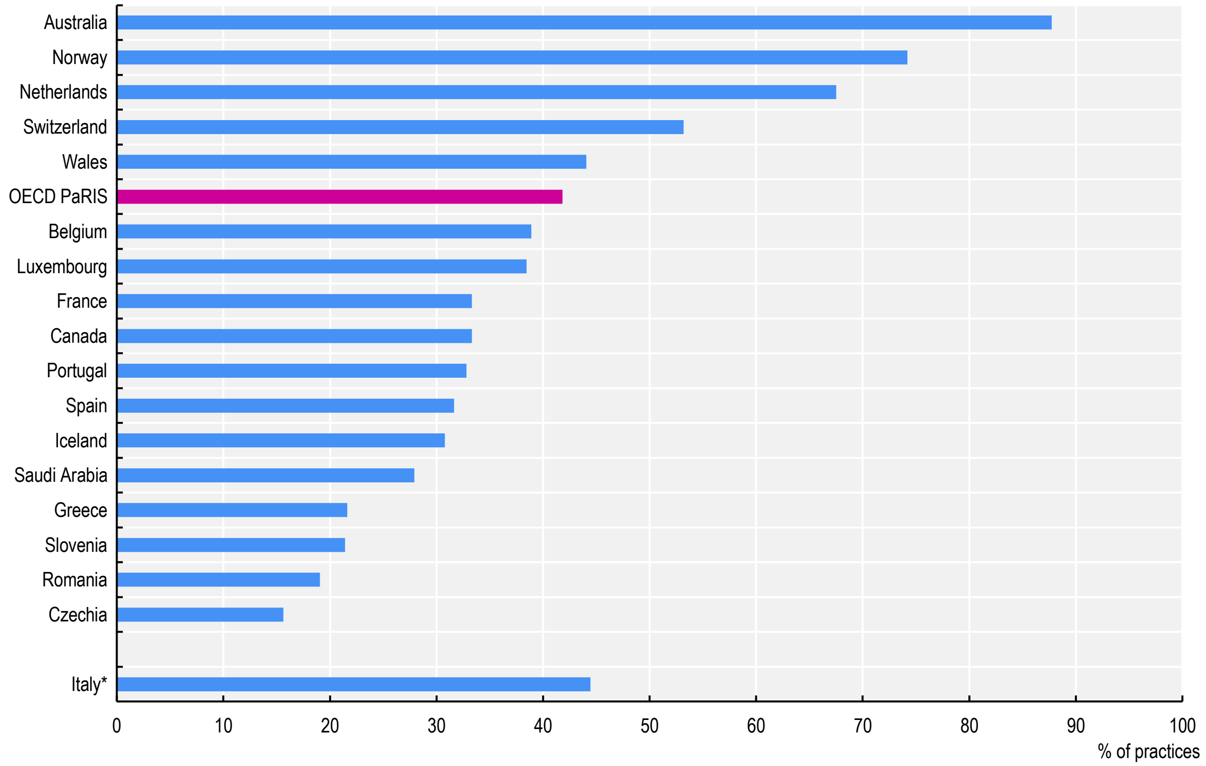
Communication challenges go beyond the interaction between patients and their primary care professionals, especially for patients with complex needs who must engage with multiple healthcare providers. Among practices that report developing care plans for their patients, only two-fifths indicate that they share these care plans with healthcare professionals working outside their practice (Figure 4.11).

Figure 4.11. Two-fifths of primary care practices that develop patient care plans shared them with healthcare professionals working outside their practice

Percentage of primary care practices who share care plans with professionals outside their practice, out of those who report using care plans (out of a total of 911 practices that use some form of care plan)



Note: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. The United States is not represented because it did not administer the provider questionnaire.
Source: OECD PaRIS 2024 Database.

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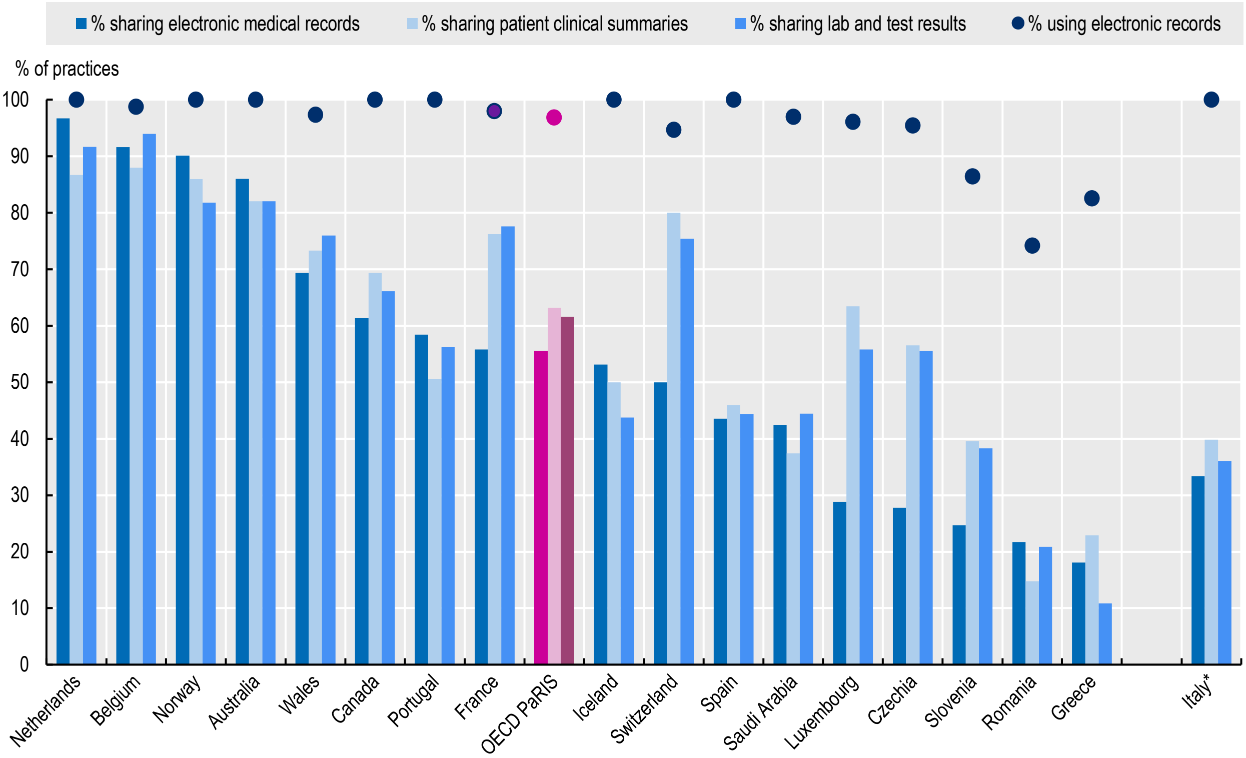
4.5.3. Almost all primary care practices in PaRIS use electronic health records, but just half can share them with other practices

According to PaRIS data, almost all (95%) patients have sought care in practices that report the use of electronic medical records. This number is slightly higher than the average reported in Health at Glance 2023 (93%), which used 2021 data (OECD, 2023[29]). PaRIS data further shows that in 14 out of the 19 countries 95% or more of the patients are managed in practices using electronic medical records. However, as Figure 4.12 shows, only three countries (Belgium, the Netherlands and Norway) have more than 90% of primary care practices that are able to exchange medical records electronically with other practices.

Figure 4.12. More than 95% of primary care practices in PaRIS use electronic records, but fewer than half can exchange medical information with other practices

Percentage of practices that can exchange information with other practices, and percentage using electronic records



Note: *Data for Italy refer to practices serving patients enrolled in outpatient settings for specialist visits in selected regions. The United States is not represented because it did not administer the primary care practice questionnaire. ***In Wales, a very small number of practices indicated that they do not have electronic medical records even though by national policy the national record is available for all practices to view.
Source: OECD PaRIS 2024 Database.

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> *"Since the healthcare system [in my country] is not fully digitalized, each visit to a healthcare professional requires me to share my paper health records with at least three specialists –my GP, my HIV physician, and my cardiologist. I take on this responsibility to prevent duplicate blood tests and other exams. However, with multiple appointments each year, this process takes up a lot of unnecessary time."*
>
> *Robert, 54 years old, male, living with HIV and chronic heart disease*

The inability to exchange information suggests a challenge in what has been described in the literature as “continuity of information”, or the systematic flow of relevant patient information across different healthcare providers and services over time (Berta et al., 2009[30]; Gardner et al., 2014[31]). Only 28% of primary care practices report receiving medical records from previous practice without directly requesting them; 56% reported receiving them if requested from the previous practice and 41% reported if patient brings them (Chapter 3). The limited ability to exchange electronic information as shown in Figure 4.12 can reflect technological limitations (e.g. there are no systems in place for data sharing), regulatory limitations (e.g. regulations in place prevent data sharing), or lack of awareness of primary care practices about the data sharing capabilities. For example, Wales reports having a national care record for each patient that both primary and secondary care professionals can access and update (see Box 4.4). However, while secondary care professionals can see all information, primary care professionals cannot automatically access information entered by secondary care (Welsh Government, 2023[32]). In Spain, electronic health records are present in all practices. Moreover, there are national interoperability systems in place that technically allow for data sharing across regions of its decentralised healthcare system. Box 4.5 provides further details on Spain’s approach to integrating patient clinical information.

Box 4.4. Integrating patient records across multiple systems in Wales

Efforts to improve healthcare in Wales focus on creating integrated digital systems that enhance access to patient information and support co-ordinated care across services.

The Welsh Clinical Portal (WCP) integrates patient information from various systems across Wales, enabling hospital staff to access personalised workspaces, order tests, and view results. Many hospitals now use features such as medicine transcribing, e-Discharge, and access to the Welsh General Practice Record.

GP practice systems, provided by two suppliers in Wales, allow GPs to view local patient records alongside hospital test results and discharge notes. The Welsh GP Record (WGPR), a summary of key information from GP records, is accessible via the WCP with patient consent, and every access is logged for security.

The Welsh Community Care Information System (WCCIS) supports information sharing between health and social services, enabling co-ordinated care through shared electronic records. While improving integration, work continues on defining access levels for social care workers and ensuring robust data governance.

My Health Online allows patients to book appointments and order prescriptions online. Future upgrades will provide patients with direct access to parts of their GP records, promoting more active engagement in their care.

Source: The Wales Audit Office (2018[33]), *Informatics systems in NHS Wales*, Auditor General for Wales.

Box 4.5. Enabling interoperability in Spain's decentralised healthcare system

The Spanish healthcare system is decentralised in 17 autonomous regions. The Regional Health Services form part of the National Health System (*SNS*), and all of them have electronic health record (EHR) systems, which are widely used by healthcare professionals. Within each region, primary care centres exchange information either through a single patient record or via viewing platforms that allow access to various reports generated in different systems.

In primary care, the electronic health record is the standard working tool for professionals and has a longitudinal nature, documenting the patient's health history. The SNS has a common clinical information interoperability service (*SNS* Digital Health Record – *HCDSNS*), co-ordinated by the Ministry of Health, which integrates:

- A unique patient identification system: the SNS Protected Population common database.
- Access for healthcare professionals to the patient's HCDSNS, generated in any healthcare centre, from any point within the system.
- Online access for citizens to their interoperable HCDSNS.
- The interoperable electronic prescription system, which allows dispensing from any pharmacy in Spain, regardless of where it was prescribed within the SNS.

Spain also has interoperability services for Health Records and Electronic Prescriptions with other European countries through **MyHealth@EU**.

Source: Spanish Ministry of Health https://www.sanidad.gob.es/areas/saludDigital/home.htm

4.5.4. Regular medication reviews can help improve care co-ordination

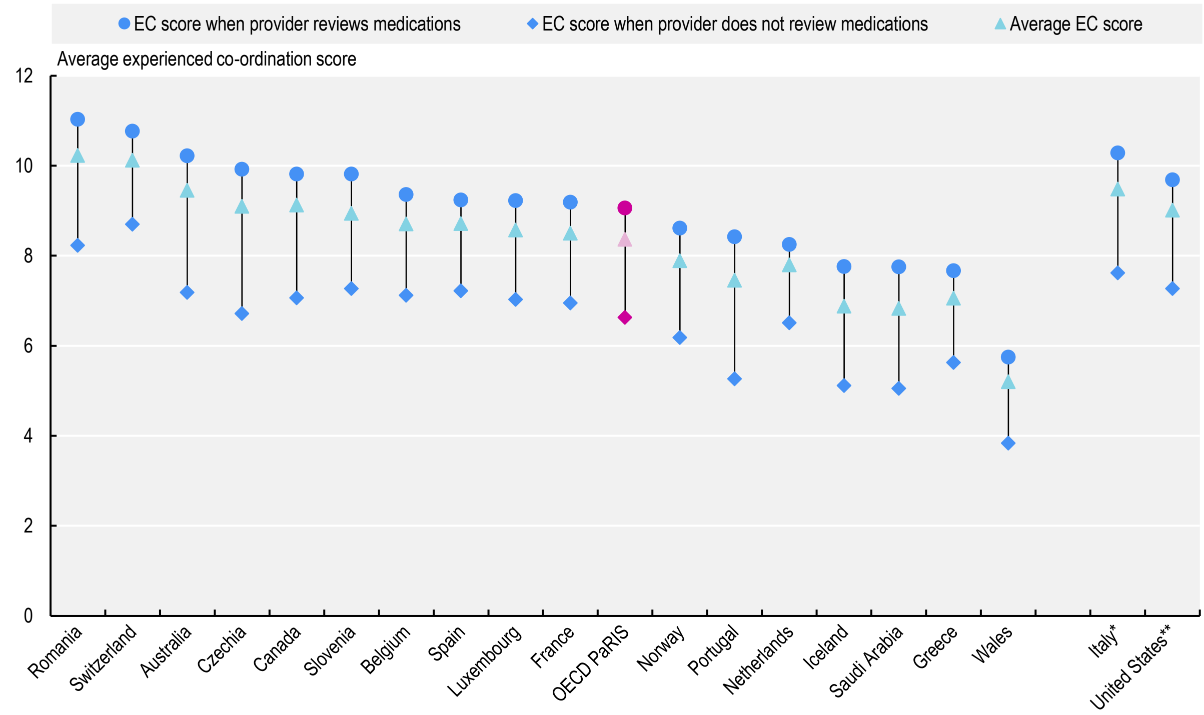
Patients who report that their primary care professional has reviewed their medication are more likely to report higher co-ordination of care scores (Figure 4.13). This is even more prominent among those with two or more chronic conditions (Chapter 3). Improving co-ordination of care may sometimes require complex interventions such as improving the interoperability of health information systems, mechanisms for healthcare payment systems and regulations related to the scope of practice of different health professionals (Khatri et al., 2023[34]).

Yet, PaRIS data show that on average, about 70% of people living with multiple chronic conditions had their medication reviewed by a healthcare professional in the last six months (Chapter 3). While about 90% of people with three of more chronic conditions have medication reviews in Czechia, Switzerland and Australia, the share is lower than 50% in Iceland and Slovenia.

Reviewing all the medications their patients are taking can provide healthcare professionals with an opportunity to inquire about the care provided by other professionals involved in the patient's treatment. Systematic medication reviews can be complex and time-consuming, involving the patient and multiple healthcare professionals, and often requiring follow-up visits to fully optimise medications. Digital tools, such as support systems can assist in quickly identifying and prioritising key issues, reducing the time spent navigating extensive electronic health records while ensuring a clear understanding of the patient's treatment (Abuzour et al., 2024[35]).

Figure 4.13. A systematic medication review can contribute to better care co-ordination

Experienced care co-ordination and healthcare professional reviewing medication



Note: P3CEQ Questionnaire. Response to five questions measuring care co-ordination. Scale ranges from 0 to 15, higher scores represent better care co-ordination. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Differences between groups are statistically significant (p<0.05) for all countries.
Source: OECD PaRIS 2024 Database.

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4.6. Putting it together: Improving the overall experience of person-centred care

If person-centred care is understood as an overall measure of how people experience the people-centredness of a healthcare system, it must reflect the specific model of care a person receives from their healthcare professional.

In PaRIS, a patient's experience of the person-centred care ideally refers to care that prioritises the individual's unique needs, values, and preferences; ensures meaningful involvement in decision-making, recognises as whole individuals, rather than focusing solely on their conditions; minimises the need to repeat information; is organised in a way that works for patients, and offers support and information needed to help the patients to self-manage their health (see Box 4.6).

Box 4.6. Person-centred care scale

Person-centred care was measured with the P3CEQ scale, existing of eight items that are equally weighted from 0 to 3 (the higher the score, the higher the person-centredness). The scale ranges from 0 to 24. The description of the components is presented in Table 4.5.

Table 4.5. Description of the components of the person-centred care scale (PC).

Component	Description
Discuss what is important	Response to the question: “Do you discuss with the healthcare professionals involved in your care what is most important for you in managing your own health and well-being?”
Involved in decisions	Response to the question: “Are you involved as much as you want to be in decisions about your care?”
Considered whole person	Response to the question: “Are you considered as a ‘whole person’ rather than just a disease/condition in relation to your care?”
Need to repeat information	Response to the question: “Were there times when you had to repeat information that should have been in your care records?”. The positive item is when the patient indicates that there is no need to repeat information.
Care joined up	Response to the question: “Is your healthcare organised in a way that works for you?”
Support to self-manage	Response to the question: “Do you receive enough support from their healthcare professionals to help you manage their own health and well-being?”
Information to self-manage	Response to the question: “To what extent have you received useful information at the time you need it to help you manage your own health and well-being?”
Confidence to self-manage	Response to the question: “How confident are you that you can manage your own health and well-being?”

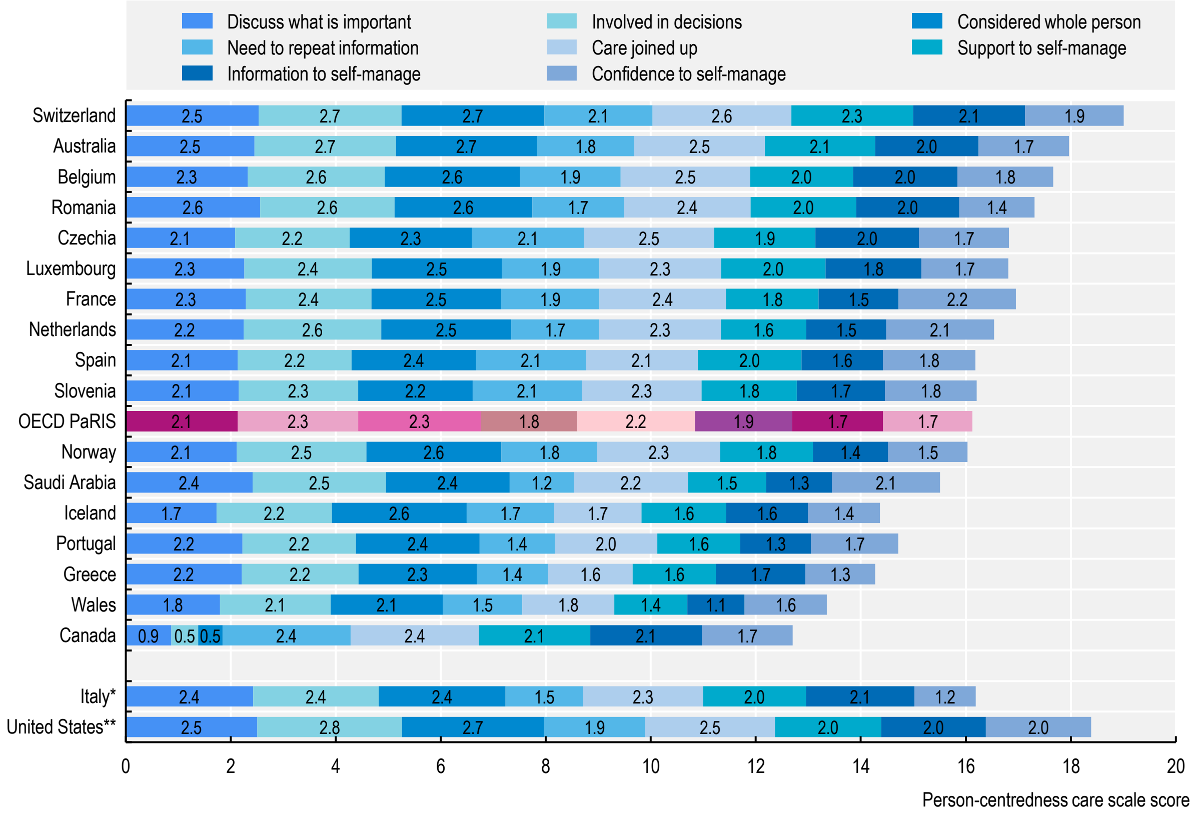
Source: Lloyd, H. et al. (2019[28]), “Validation of the person-centred co-ordinated care experience questionnaire (P3CEQ)”, https://doi.org/10.1093/intqhc/mzy212.

> *“When it comes to my health and decisions related to it, I would like to have a much more active, proactive, and informed role, where I can effectively decide on my treatment and options, with all available information and the current state of things on the table. I have not had this experience, and I have educated myself in health matters independently and through peer support, greatly missing a much more active role within the healthcare system”*
>
> *Lucía, 42 years old, female, living with multiple chronic conditions*

4.6.1. Person-centred care is most often hindered by poorly organised care that fails to meet patients’ needs and a lack of sufficient information to support self-management

Among the eight components of the person-centred care scale, insufficient provision of useful information for self-management and low confidence in self-management are the two components that contribute the most to lowering patients’ overall experience of person-centred care, as indicated in Figure 4.14 below. However, the distribution of scores across indicators was more balanced for the person-centred care score as opposed to the experienced co-ordination of care, where the availability of care planning indicator stands out as having the lowest scores.

Figure 4.14. Composition of person-centred care scores (PC) by country



Note: P3CEQ Questionnaire. Response to eight questions measuring if care is person-centred. Scale ranges from 0 to 24, higher scores represent better person-centred care. Description of the components of the person-centred care scale in Table 4.5. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Results are age and sex-standardised across countries.
Source: OECD PaRIS 2024 Database.

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The areas in which most countries achieve the highest score are “involved in decisions” and “considered whole person”, with scores ranging from 2.1 to 2.7 (except for Canada, which scored 0.5 in both items) out of a maximum of 3 points. Most countries scored the lowest for “need to repeat information”, with scores ranging from 1.2 to 2.1; “information to self-manage”, with scores ranging from 1.1 to 2.1, and for “confidence to self-manage”, with scores ranging from 1.2 to 2.2. The average person-centred care score across OECD countries in the PaRIS survey is two-thirds of the maximum possible score (16.1 out of 24), suggesting room for improvement towards person-centred care. Canada deviates from most countries by having relatively high scores for care being organised in a way that works for patients (1.8 out of 3.0), while having low scores for interpersonal doctor-patient experience, such as health professionals discussing what is important for patients, involving them in decisions, and patients considering that they are treated as a whole person.

> *“I think that the most characteristic example is when I went to the doctor for one of my chronic diseases. He never asked me if I was able to make an injection to myself on my own. When I discovered that I had to do this all by myself, I found it really difficult. So, I wish we had talked about this in advance.”*
>
> *Zoe, 67 years old, divorced woman, living with severe osteoporosis, asthma and Paget disease*

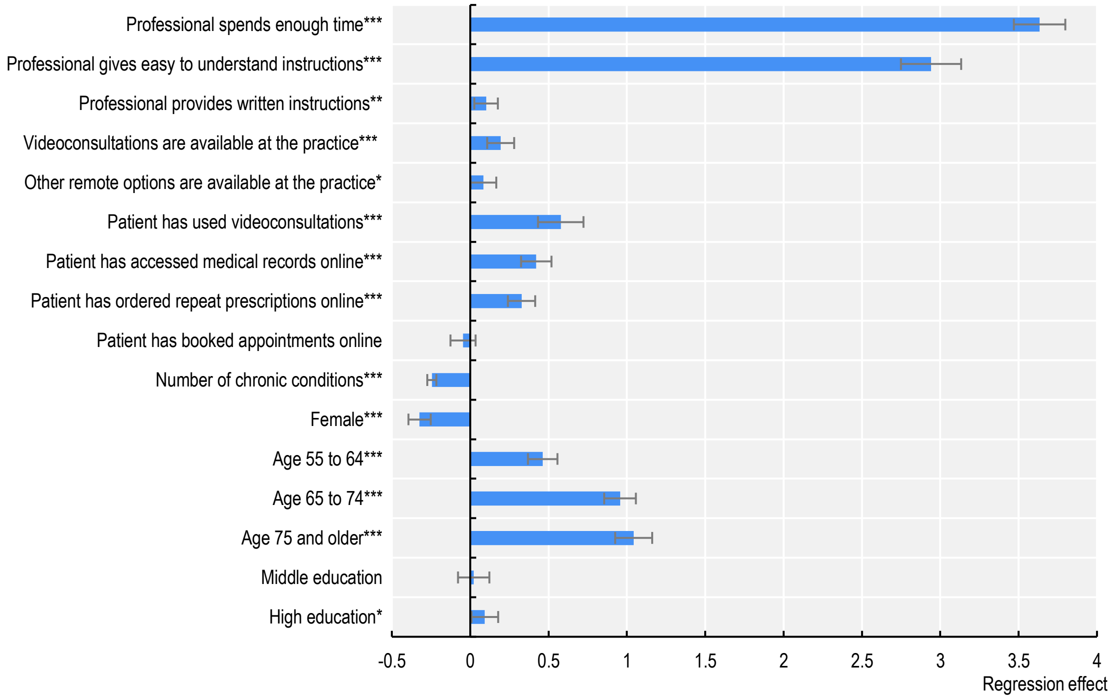
4.6.2. Sufficient consultation time, effective and accessible doctor-patient communication, and use of digital tools and are all associated with more person-centred care

Figure 4.15 presents the results from an analysis of characteristics of primary care that support person centred-care, that accounts for patient characteristics – gender, education, multimorbidity.

The results indicate that when healthcare professionals provide easy to understand information and spend enough time with patients, it has a positive impact on person-centred care scores. The provision of written information shows a smaller, but still statistically significant effect. The size of this effect comparable to the difference in person-centred care scores between people with middle and high levels of education, or between middle and low levels of education. The results also show that offering video consultations or other remote options is associated with higher person-centred scores compared to providing only telephone consultations. These results reflect the overall PaRIS population except the United States, which does not have provider-level data), but results may differ by country. This analysis builds on the findings in Chapter 3, which showed a 21% improvement in experienced care quality among people with multiple chronic conditions when more time was allocated for regular or follow-up consultations. Despite this, less than half of primary care practices (38%) report scheduling consultations that last 15 minutes or more.

Figure 4.15. Sufficient consultation time, effective and accessible communication, and use of digital tools are all associated with more person-centred care

Estimated effects and 95% confidence intervals of practices' and patients' characteristics on person-centred care



Note: Analysis includes 52 729 patients in 18 countries, only those with at least one chronic condition was included. The United States was not included for not having information at the practice level for provision. Statistical significance: *** P ≤ 0.001;:** P ≤ 0.01;:* P ≤ 0.05. Video consultations and remote options compared to having telephone only. Female compared to Male; Age groups compared to people from 45 to 54 years old; Education high and middle compared to people with low education. Random intercept models with patient, practice and country level.
Source: Author's estimations with data form the OECD PaRIS 2024 Database.

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> *“When I had some complications with my thyroid/hasimoto problem, my doctor explained to me my condition using simple words. He explained the available treatment options, in order to decide together which one would be more appropriate and more efficient for me. I found it really helpful, since I managed to adjust easier.“*
>
> *Lucy, 55 years old, divorced woman with osteoporosis, Hashimoto/thyroid, hypertension*

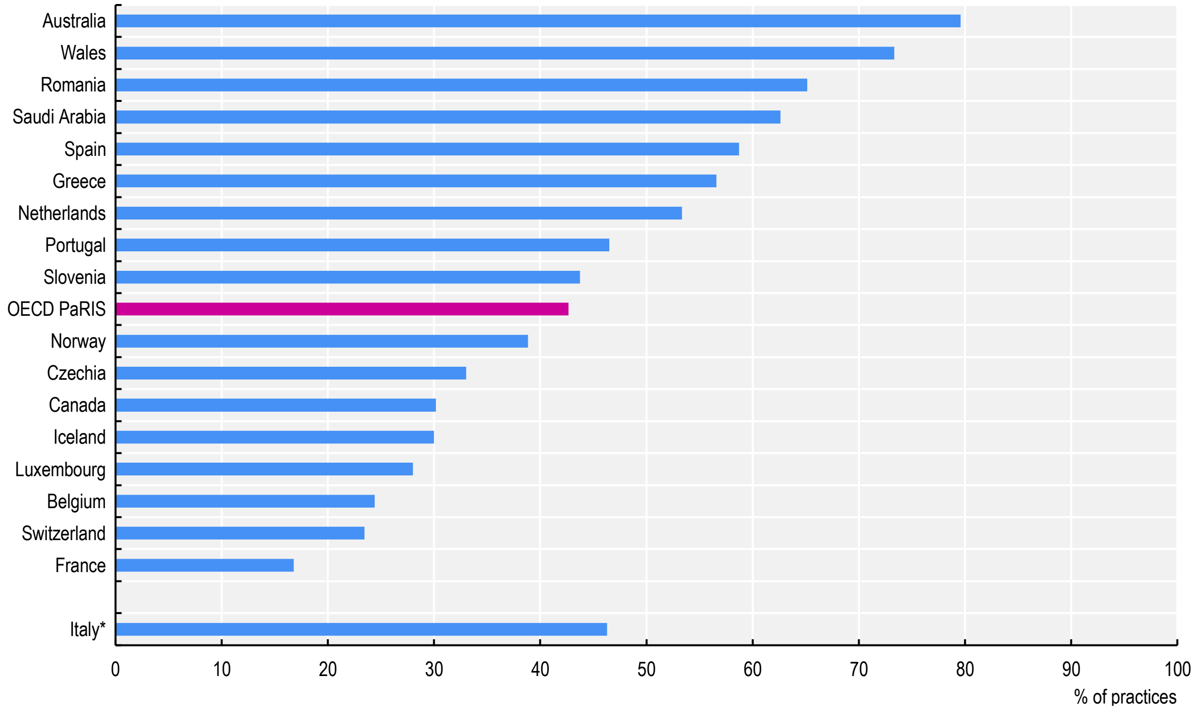
Subsequent statistical analysis similar to the one just presented in Figure 4.15 was conducted for all forms of self-management support reported by practices shown earlier in Figure 4.3, which includes: provision of verbal information during or after the consultation; distribution of information such as pamphlets, booklets, internet/web based information; referral to self-management classes or educators; explicit goal setting and action planning with members of practice team; and support provided by member so the practice team trained in patient empowerment and problem-solving methodologies. Results were statistically significant only for distribution of information such as pamphlets, booklets, internet/web-based information, which was positively associated with person-centred care.

This finding underscores the importance of ensuring that primary care practice websites are easy to understand and accessible, alongside promoting adequate health literacy. Written information appears to play a key role in supporting patients, particularly for this population, where consultations may often be lengthy and cover multiple health issues. This can leave patients struggling to absorb and effectively use all the information provided during the consultation to make informed decisions about their care. Providing written information, in combination with other self-management support options, can enhance patients’ ability to manage their own health and maximise the effectiveness of primary care.

The results shown in Figure 4.16 confirm that effective and accessible communication could improve experience of person-centred care. Fewer than half of all PaRIS practices regularly provide written instructions, either electronically or on paper, about how patients can manage their own care at home. such instructions may concern what to do to control symptoms, prevent flare-ups, or monitor conditions at home.

Figure 4.16. Fewer than half of PaRIS practices regularly provide written instructions (electronically or on paper) to patients with chronic conditions about how to manage their own care at home

Percentage of practices who always or often provide written instructions to chronic patients



Note: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. The United States is not represented because it did not administer the provider questionnaire.
Source: OECD PaRIS 2024 Database.

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4.6.3. Video consultations are rarely used in primary care, and in most countries patients report much lower availability than practices do

The availability of videoconference services in primary care practices is not only low, but there also appears to be a communication gap between practices and their patients regarding the availability of these services. According to practices, 28.3% of patients with chronic conditions are with practices that offer videoconference services. However, only 10.8% of these patients are aware that their primary care practice offers such services (see Table 4.6). In several countries, such as Romania, Wales, France and the Netherlands, practices report substantially higher numbers than patients. In some countries, such as Spain, Luxembourg, Greece and Slovenia, practices and patients provide quite similar numbers. Only in Spain patients reported higher numbers than their practices.

Table 4.6. Availability of videoconference services reported by primary care practices is higher than reported by patients in nearly all countries

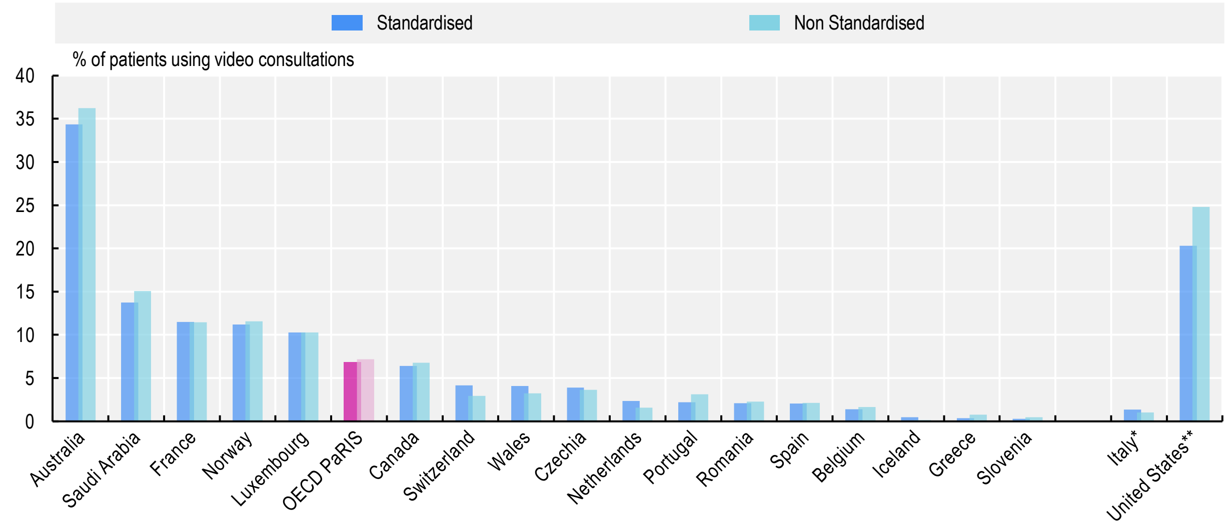
Offer of videoconference services as reported by primary care practices and their patients (unstandardised data)

Country	Practices’ and corresponding patients’ reporting that videoconferences services are offered by the primary care practice (% of patients in each group)						
	n	Practice no, patient no (1)	Practice yes, patient no (2)	Practice no, patient yes (3)	Practice yes, patient yes (4)	Yes reported by practices (2+4)	Yes reported by patients (3+4)
OECD PaRIS	**70 281**	**66.6**	**22.7**	**5.2**	**5.6**	**28.3**	**10.8**
Australia	1 770	17.0	42.3	10.2	30.6	72.8	40.7
Belgium	3 171	80.0	16.7	1.5	1.8	18.4	3.3
Canada	2 893	58.1	31.2	5.5	5.2	36.4	10.7
Czechia	3 163	84.4	10.6	4.2	0.8	11.3	5.0
France	9 249	43.8	38.8	1.8	15.6	54.4	17.4
Greece	1 259	94.8	3.3	1.7	0.2	3.4	1.9
Iceland	1 370	80.6	18.5	0.9	0.1	18.5	0.9
Luxembourg	1 142	87.7	5.7	6.1	0.5	6.2	6.7
Netherlands	3 538	55.4	38.4	1.7	4.5	42.9	6.1
Norway	6 670	40.2	37.6	7.0	15.1	52.7	22.1
Portugal	7 631	77.0	14.7	7.0	1.3	16.0	8.3
Romania	1 058	8.9	89.3	0.1	1.7	91.0	1.8
Saudi Arabia	6 198	47.9	28.2	13.7	10.2	38.5	23.9
Slovenia	2 007	93.2	4.5	1.7	0.5	5.0	2.2
Spain	15 824	81.3	8.4	9.3	1.1	9.4	10.4
Switzerland	3 016	91.3	6.5	1.7	0.5	7.0	2.2
Wales	6 465	49.7	43.1	3.0	4.1	47.3	7.2
Italy*	1 113	92.5	5.7	1.7	0.1	5.8	1.8
United States**	NA	NA	NA	NA	NA	NA	46.0**

Note: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Matched practices and patient results for all countries are shown for patients with valid practice data only, except for the United States which did not collect practice data.
Source: OECD PaRIS 2024 Database.

Given the low availability of video consultations in primary care, it is unsurprising that their usage reported by patients is even lower. Approximately 7% of patients with chronic conditions reports having used video consultation in primary care, as shown in Figure 4.17.

Figure 4.17. Fewer than one in ten patients with chronic conditions report having used video consultation services with their primary care practices



Note: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people aged 65 years or older. Standardised results are adjusted for age and sex across countries.
Source: OECD PaRIS 2024 Database.

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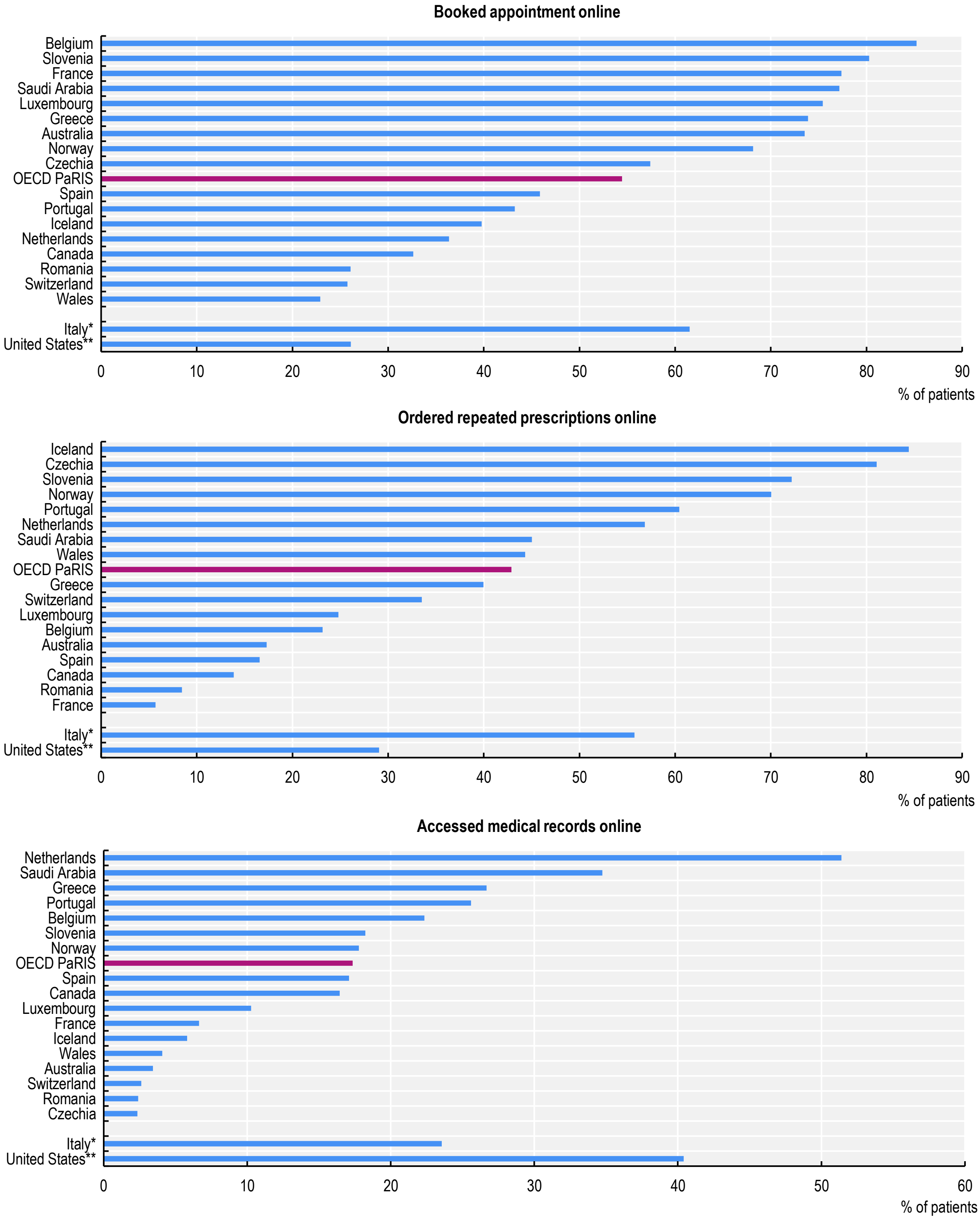
Despite the rise of video consultations following the COVID-19 pandemic, aggregated data about video consultations show that this concerned on average 18% of all consultations around 2021 as reported in *Health at a Glance 2023* (OECD, 2023[29]). While the PaRIS data refer to a different population, this may be an indication that usage of video consultation in primary care may be lower than in other areas of care.

> *In my experience, video consultations have been incredibly helpful for receiving more timely care. Accessing healthcare from home eliminated travel time and waiting in crowded clinics, allowing me to schedule appointments more easily around my daily responsibilities. This accessibility enabled me to connect quickly with my primary care professional for follow-up questions or urgent concerns.*
>
> *Betsy, 68 years old, female, living with multiple chronic conditions, including obesity, dedicated caregiver for her husband, who is battling cancer, and for her daughter, who has Type 1 diabetes and chronic kidney disease*

4.6.4. In several countries, patients have booked primary care appointments or ordered repeat prescriptions online, but access to electronic medical records remains limited

PaRIS data indicate a need to improve the digitalisation of the primary care experience (see Figure 4.18). On average, 54% of patients with chronic conditions have booked primary care appointments online and 43% have ordered repeat prescriptions with their primary care practice online. However, only 17% have accessed their primary care medical records online.

Figure 4.18. While most people use online services to book appointments and repeat their prescriptions, few access their electronic health records



Note: *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. The United States is not represented because it did not administer the provider questionnaire. **United States sample only includes people aged 65 years or older.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/15vayl

Progress for the different types of digital services in primary care – booking appointments online, ordering repeated prescriptions online, accessing electronic medical records online, and using video consultations – varies substantially across countries. Notably, the countries reporting the highest usage in some areas are not the same in others. This suggests that all countries have room for improvement in the digitalisation of the primary care experience. Considering the role of these tools in promoting more people-centred care, accelerating the digitalisation of primary care should be a policy priority.

4.7. Conclusion

This chapter highlights the critical role of people-centred care in improving health outcomes, patient confidence, and the overall efficiency of healthcare systems. The analysis of PaRIS data demonstrates that when care is designed around the health needs, preferences, and capacities of the people, it leads to better physical and mental health and enhanced well-being, particularly for patients with chronic conditions. However, important gaps persist in the adoption of key practices, such as care planning, self-management support, effective and accessible communication, and the deployment of digital tools in primary care. The PaRIS findings underscore the urgent need for targeted health policies that address structural barriers, promote equitable access to resources, and enhance health literacy and digital health literacy, especially among older and less educated populations.

There are significant opportunities to enhance primary care by expanding the use of care plans, improving care co-ordination, promoting digital literacy, and offering more accessible digital tools. Strengthening these areas can lead to more seamless integration of healthcare services and empower patients to play a more active role in their care process. Additionally, improving the interoperability of electronic health records can help unlocking the full potential of digital systems, making healthcare more efficient and connected. Improving co-ordination of care requires more robust mechanisms for communication across providers, alongside investments in training for healthcare professionals to deliver person-centred care effectively. Policy makers must also prioritise digital inclusion to ensure that all patients, regardless of age or education level, can benefit from advancements in health technologies.

Box 4.7. Key policy recommendations emerging from the PaRIS data to enhance people-centred care

Improve access to health information and empower patients through shared decision-making

Accessible health information is essential for a more person-centred experience. PaRIS findings show a reliance on basic forms of self-management support, such as verbal instructions, while interventions like providing written instructions or referrals to self-management classes are underutilised. Countries should prioritise the provision of written health materials – both digital and printed – tailored to diverse literacy levels and cultural contexts. In addition, they should expand funding and training for healthcare providers to deliver comprehensive self-management programmes, including the provision of curated and high-quality health information.

Patient involvement in decision-making leads to better health outcomes and greater confidence in managing chronic conditions. Policy makers should mandate training for primary care providers on shared decision-making techniques, focusing on engaging patients in their own care. Financial incentives can encourage practices to prioritise patient-centred approaches, ensuring that care plans reflect patient preferences and promote active participation in health management. Integrating such practices into primary care models will empower patients, particularly those with chronic conditions, to manage their health more effectively.

Strengthen the use and communication of care plans and enhance interoperability of electronic health records to improve continuity of care

PaRIS data show low utilisation and inconsistent communication regarding care plans, with significant gaps between patient and provider reports. Healthcare systems should mandate the development and use of personalised care plans for patients with chronic conditions, and policies should promote clear communication about care plans to ensure that patients understand and value their purpose. Countries should develop national guidelines for care planning, ensuring that all primary care practices implement and communicate plans clearly to patients. Regular surveys of patients and providers can help identify gaps in care planning and facilitate targeted improvements to bridge the communication divide.

Continuity of care and care co-ordination relies on seamless information exchange between healthcare professionals. Despite the high usage of electronic health records, PaRIS data highlight limited interoperability across practices, restricting the seamless exchange of information. Policy makers should prioritise the development of national standards and frameworks for interoperable electronic health record systems (OECD, 2024[36]) to streamline patient care, reduce duplication, and improve care co-ordination.

Invest in digital health literacy and expand patients’ access to digital tools in primary care

The disparities in digital health literacy, especially among older and less educated populations, hinder equitable access to healthcare services. Investments in user-friendly technologies, such as online booking systems and electronic medical record portals, are essential. Policy makers must also address digital exclusion by offering training programmes for older individuals and less educated groups, equipping them with the skills to navigate digital health tools confidently.

PaRIS data highlights the need to accelerate the digitalisation of primary care to achieve more people-centred healthcare systems. Progress is uneven at best in the deployment of tools such as videoconferencing, booking appointments online, ordering repeat prescriptions online, and allowing patients access to their electronic medical records.

To advance people-centred care, healthcare systems must adopt a multi-pronged approach that includes enhancing care co-ordination, strengthening patient-provider communication, and leveraging digital tools to empower patients. Policies should prioritise co-developing care models in collaboration with patients, integrating their feedback to enhance the co-production of health, and ensuring equitable access to resources, particularly for vulnerable groups. Furthermore, systematic evaluations of patient experiences, aligned with robust data collection initiatives like PaRIS, can guide the design of policies that not only improve care delivery but also foster trust and engagement in healthcare systems. These efforts will be essential to achieving a more inclusive, resilient, responsive, and sustainable approach to healthcare.

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5

Gender and socio-economic gaps in patient-reported outcomes and experiences

Inequalities in traditional health metrics, such as life expectancy, mortality and morbidity are well documented in the literature, but less is known about disparities in outcomes and experiences as reported by patients. This chapter describes how health outcomes and experiences of people vary by factors such as education, income and gender. A better understanding of these disparities is fundamental for designing health policies that deliver equitable results. The results show that inequalities between men and women are persistent; men report better health outcomes and well-being even when other relevant factors such as multimorbidity, age and socio-economic factors are considered. Men also trust the healthcare system more than women. People with a lower socio-economic status face a double disadvantage: not only do they fall ill earlier in their lives, but once sick, they also experience worse outcomes compared to their higher earning or higher educated counterparts. International comparisons show an opportunity for international learning as gender and socio-economic gaps are much larger in some countries than in others.

In Brief

What PaRIS tell us about gender- and socio-economic inequalities

- The PaRIS data confirm the gender health paradox: **women live longer than men but consistently report poorer physical and mental health.** This pattern is evident in most of the countries surveyed, with the gap consistently in favour of men. In addition, women report lower levels of well-being in almost all countries, with scores typically between 3% and 5% lower than men, and in some cases the gap is as high as 9%. The gender gaps are persistent and remain after controlling for socio-economic factors, age and multimorbidity.
- Among the PaRIS population with one or more chronic condition, **gender differences in disease prevalence highlight the need for gender-sensitive health policies.** Men are significantly more likely to report high blood pressure, cardiovascular conditions, and diabetes, while, women more often report arthritis, anxiety and depression, and neurological conditions such as epilepsy or migraine.
- **Men have more confidence in the healthcare system than women.** Gender differences in access to services and gender bias in treatment contribute to the trust gap between men and women. In a third of countries, the gender gap was more than 10%, and in all but two countries it was more than 5%.
- **People with lower education and incomes face a double disadvantage: not only do they fall ill earlier, but once sick, they also experience worse outcomes compared to their higher earning or higher educated counterparts.**
- All countries show health inequalities between socio-economic groups. Mental health, for example, shows a clear income gradient: **the bottom third of the income distribution scores between 5 and 10 percentage points lower on the mental health scale than those in the top third.** In addition, well-being and social functioning – key dimensions of health – are consistently better for those with higher levels of education and income. Although these patterns are generally consistent across countries, there are notable international differences. Switzerland, for example, shows very small or no gaps in all health indicators.
- In most countries, **people with higher incomes have more trust in the healthcare system than people with lower incomes.** This gap is considerable with a difference of 10 percentage points or more in the proportion of people who say they trust the healthcare system. There are some countries like Spain and Romania with no or minor trust gaps.
- Despite socio-economic disparities in health outcomes, **PaRIS reveals surprisingly small differences in how different socio-economic groups experience healthcare.** Experiences of the quality, co-ordination and person-centredness of care were broadly consistent across income and education levels. The notable exception was confidence in managing one's own health, where people with higher incomes and better education felt significantly more confident. The minimal differences in healthcare experiences may be partly explained by the fact that PaRIS patients report on their experiences of primary care, which is relatively accessible and affordable.

- **To address gender and socio-economic health disparities, healthcare systems should collect and report disaggregated data across diverse demographics, including underrepresented groups such as non-binary individuals, people facing financial hardship and those facing overlapping disadvantages.** Standardising tools and integrating these metrics into performance monitoring frameworks will reveal inequities, guide targeted interventions, and enhance accountability. International initiatives like PaRIS can support shared learning and measurable progress toward equity for all.

5.1. Inequalities in outcomes and experiences

Inequalities in healthcare outcomes, experiences, and trust in healthcare systems persist as a significant challenge. This chapter explores how healthcare outcomes and experiences as reported by people with chronic conditions vary by factors such as education, income and gender, due to their direct relevance to shaping effective health policy.

While disparities in traditional health metrics, such as life expectancy, mortality and morbidity are well documented, less is known about disparities in outcomes and experiences as reported by patients. A better understanding of these disparities is fundamental for designing health policies that deliver equitable results. This chapter focuses mainly on gender and socio-economic inequalities.

When interpreting the results, it should be considered that PaRIS focuses specifically on primary care users – those who had contact with their primary care practices within six months prior to sampling. This means that any observed inequalities between groups could reflect differences in access to care. As PaRIS is a survey of primary care users rather than a population-based survey, it is possible that people who face significant barriers to accessing primary care may be under-represented in some countries. However, it seems plausible that many people with access problems are still included, as one contact with primary care within six months is enough for them to be part of the sample, and even those with access barriers may manage to have at least this level of contact in most countries.

To address this potential limitation, the survey included questions on access barriers, allowing for comparisons between PaRIS results and data from population-based surveys at the country level. This comparison shows a strong correlation between PaRIS results and those of population-based surveys, suggesting that a sizeable proportion of people experiencing access problems are, in fact, covered by the PaRIS sample. Although the potential impact of “access bias” cannot be completely ruled out, the analysis suggests that it is likely to be minimal. A more detailed explanation of this analysis can be found in Annex 5.A and Chapter 7.

5.2. Gender inequalities

Across the OECD, gender gaps persist in all spheres of public and social life (OECD, 2023[1]). Understanding gender differences is also paramount in dissecting inequalities in health outcomes and experiences. Gender, extending beyond biological distinctions, plays a significant role in shaping health disparities. Discrepancies in disease prevalence, healthcare access, and treatment experiences underscore the relevance of scrutinizing gender dynamics in healthcare (Alcalde-Rubio et al., 2020[2]) (Crespí-Lloréns, Hernández-Aguado and Chilet-Rosell, 2021[3]).

Health outcomes as well as experiences with healthcare are affected by biological factors, social roles, attributes, behaviours and expectations related to gender.

Women generally live longer than men. This gender gap averaged 5.4 years across OECD countries in 2022: life expectancy at birth for women was 83 years, compared to 77.6 years for men (OECD, 2023[4]).

Despite women's longevity, women also report worse health and higher morbidity than men, a phenomenon known as the gender-health paradox (Phillips, O'Connor and Vafaei, 2023[5]). Multiple factors may contribute to this paradox, including biological, behavioural, social, lifestyle and socio-economic factors. This section describes how outcomes and experiences with care as reported by patients differ between men and women with chronic conditions.

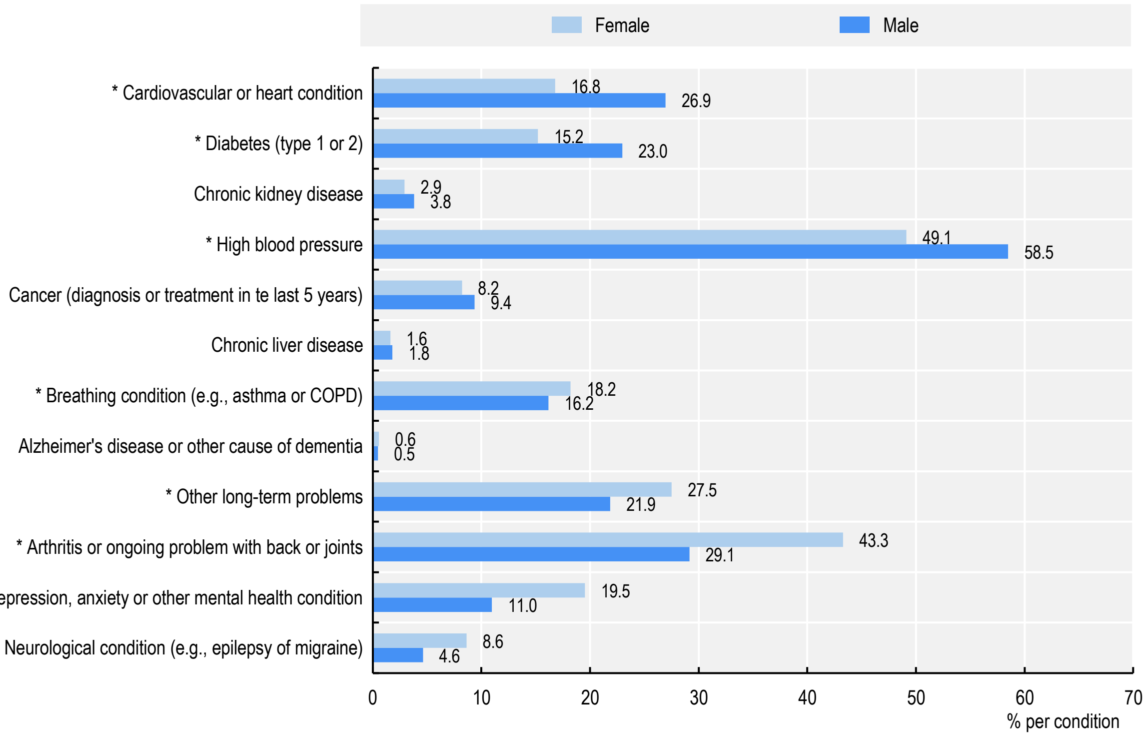
In PaRIS, gender was measured with the question *"which of the following best describes you?"* with answering categories "female", "male", "other", "prefer not to say".

People who do not identify as male or female, intersex individuals and transgender people face significant challenges in healthcare (Zeeman and Aranda, 2020[6]; Hsieh and Shuster, 2021[7]; Allory et al., 2020[8]). Despite progress in understanding gender diversity, disparities persist, and require attention within healthcare policy. However, the numbers within the "other" category, are often too small to allow meaningful analyses or reliable conclusions when it comes to international comparisons. This limits our ability to capture and address the unique healthcare outcomes of these populations. For this reason, analyses referring to people of other or undisclosed genders were carried out for the total sample rather than by country.

While the overall number of chronic conditions was comparable between men and women, there were significant gender differences for certain conditions. Men were more likely to report high blood pressure (58.5% of men versus 49.1% of women), as were cardiovascular or heart conditions (26.9% versus 16.8% of women) and diabetes (23.0% versus 15.2% of women). On the other hand, women were more likely to report arthritis or ongoing joint problems (43.3% versus 29.1% of men) and depression or other mental health conditions (19.5% versus 11.0% of men). Neurological conditions such as epilepsy or migraine were also more prevalent among women (8.6% versus 4.6% of men). Other long-term health problems, not included in the list, were reported more frequently by women (27.5%) than by men (21.9%) (Figure 5.1).

Figure 5.1. Women more often report arthritis and mental health conditions, while men lead in hypertension and cardiovascular and heart conditions

Percentage of people per chronic conditions (only people with one or more chronic conditions included)



Note: * Difference is statistically significant (p<0.05). Conditions are sorted by the relative difference calculated by dividing the prevalence in men by the prevalence in women.
Source: OECD PaRIS 2024 Database.

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5.2.1. There are considerable gender gaps in health and well-being favouring men across all countries

For general health, a slight gender gap was observed in the total PaRIS population with chronic conditions: on average, 68% of men and 64% of women rated their health as good, very good, or excellent. Although there was a slight advantage for men in all but one country, the differences were not statistically significant. Nevertheless, breaking down health into its individual dimensions helps to shed more light on gender inequalities.

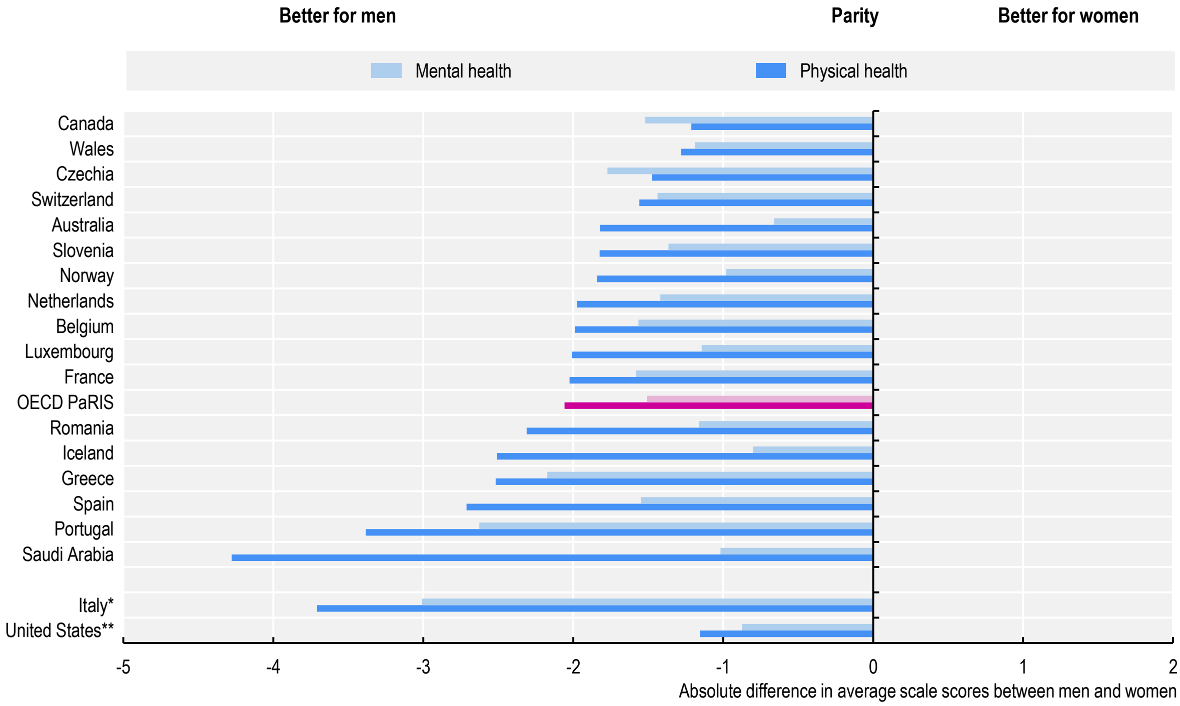
Physical and mental health gaps

Gender gaps become more visible when focusing on specific dimensions of health. Figure 5.2 shows the differences in aggregated country scores for physical and mental health between men and women. Women report less favourable scores than men in all countries. Women report a score 2 points lower on physical health and 1.5 points lower for mental health. While these gaps appear relatively small (10 points correspond with around 1 standard deviation in a standard population), there is considerable variation in the size of these inequalities between countries. For example, gaps in physical health of less than

1.5 points are found in the Czechia, Wales and Canada, while Saudi Arabia has a gap of more than 4 points. Gaps in mental health were less than 1 point in Australia, Iceland, the United States and Norway, but more than 2 points in, for example, Portugal and Greece.

Figure 5.2. Men report better physical and mental health than women in all countries

Absolute differences in average scores per country for men and women with at least one chronic condition on PROMIS scales for physical and mental health



Note: People with one or more chronic conditions. Physical health: PROMIS® Scale v1.2 – Global Health component for physical health and mental are T-score metrics, higher values represent better physical health. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample: only includes people of 65 years and older. Physical health: all gaps statistically significant (p<0.05) except for Canada and the United States. Mental health: all gaps statistically significant (p<0.05) except for Australia, Iceland, Luxembourg, Romania and the United States.
Source: OECD PaRIS 2024 Database.

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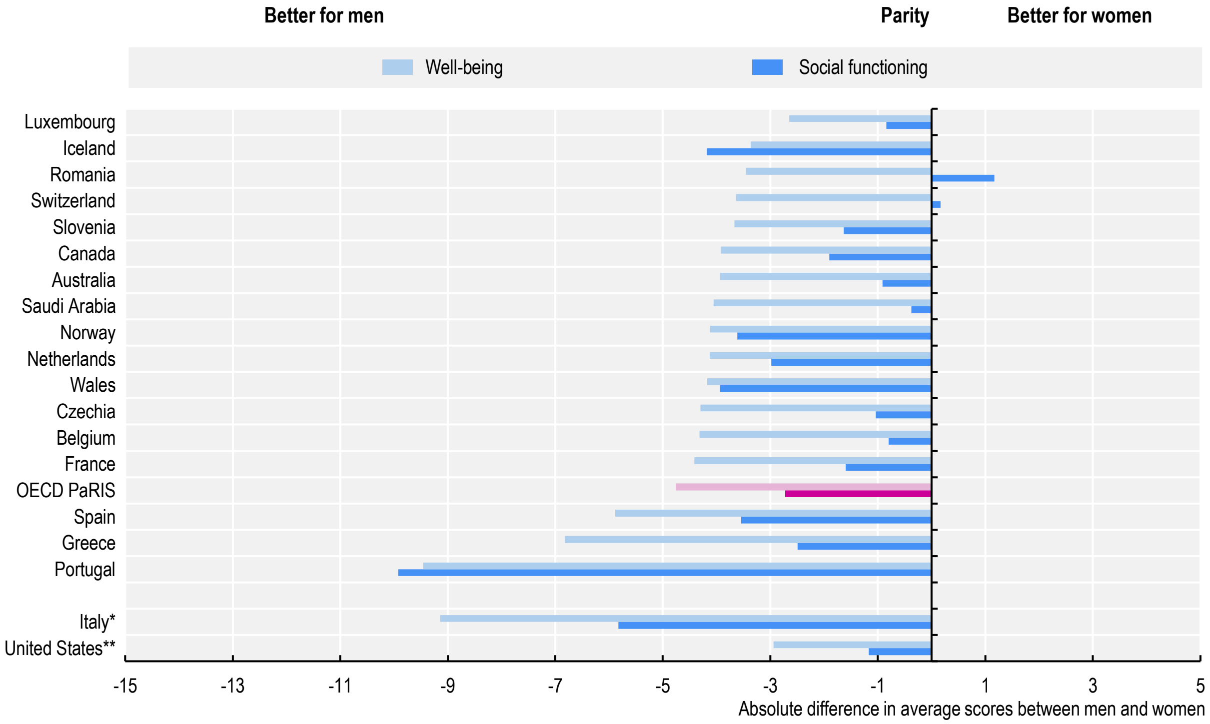
Men report better well-being and social functioning

Figure 5.3 illustrates the differences between men and women per country in terms of well-being and social functioning. There are significant differences in well-being, in all cases in favour of men. On average, the difference on the WHO-5 well-being scale is 4.7 points (on a scale of 0-100). In all countries, the gap is greater than 3 points, except in Luxembourg and the United States, where there are no statistically significant differences.

While gender differences are also found for social functioning in most countries, the difference is only statistically significant in Portugal, where almost 10% more men than women are positive about their social activities and roles.

Figure 5.3. Women report lower levels of well-being compared to men in most countries

Absolute differences in average scores for men and women on the WHO-5 well-being index and differences in percentages of men and women who are positive about how they carry out usual social activities and roles



Note: People with one or more chronic conditions. Well-being: WHO-5 well-being index. Response to five questions measuring well-being. Raw scale 0-25 converted to 0-100 scale with 0 being the lowest possible well-being and 100 the highest. Social functioning: PROMIS® Scale v1.2 – Global Health. Answer to the question: "In general, please rate how well you carry out your usual social activities and roles [further specified in questionnaire]", "good, very good or excellent" versus "fair or poor". * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample: only includes people of 65 years and older. Well-being: gaps not statistically significant (p>0.05) for Luxembourg and the United States. Social functioning: gap only statistically significant in Portugal (p<0.05).
Source: OECD PaRIS 2024 Database.

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5.2.2. Gender differences in experiences with care: Fewer women than men trust the healthcare system

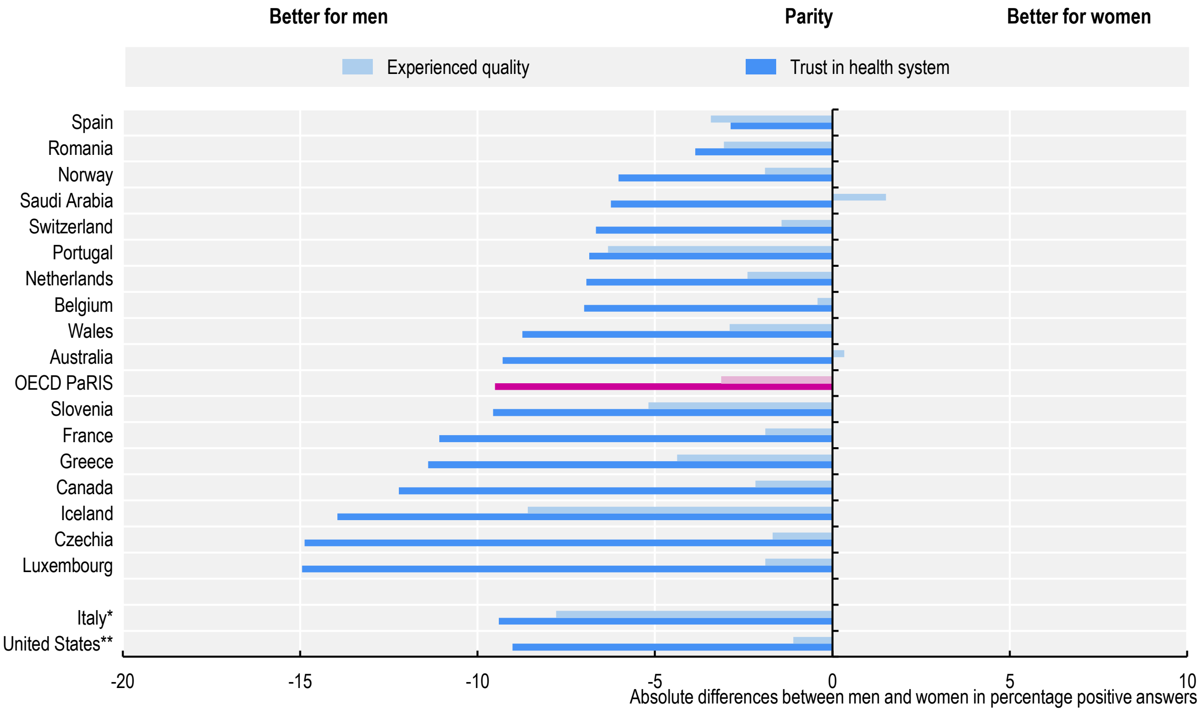
Men and women also differ in how they experience healthcare.

Figure 5.4 shows gender gaps in the overall experienced quality of care and trust in the healthcare system. In most countries, men are more likely to report positive experiences of the quality of care received, although the differences are not statistically significant, except in Slovenia.

There are much larger gender differences in trust in the healthcare system, with men more likely to express trust. In a third of countries, the gender gap is over 10% and in all but two countries it is over 5%. Chapter 6 looks in more detail at the differences in trust in the healthcare system.

Figure 5.4. While difference between genders in experiences with quality of care are small, fewer women than men have trust in the healthcare system

Absolute differences in percentage of women and men who reported positive experiences regarding quality of primary care, and trust in the healthcare system



Note: People with one or more chronic conditions. Experienced quality: Response to question: "When taking all things into consideration in relation to the care you have received, overall, how do you rate the medical care that you have received in the past 12 months from your primary care centre?", "good, very good or excellent" versus "fair or poor". Trust in healthcare system: Response to question: "How strongly do you agree or disagree that the healthcare system can be trusted?", "strongly agree, agree", "neither agree nor disagree, disagree, strongly disagree". * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample: only includes people of 65 years and older. Experienced quality: gaps not statistically significant, except for Slovenia ($p<0.05$). Trust: gaps statistically significant except for Portugal, Romania, Spain and the United states ($p<0.05$).
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/a7p5f4

> *I believe my gender plays a role; as a Latina woman, I've felt my concerns are sometimes not taken seriously due to stereotypes about women's health. While my education empowers me to navigate the system, it also highlights gaps in care for those who lack similar knowledge*
>
> *Betsy, 68 years old, female, living with multiple chronic conditions, including obesity, dedicated caregiver for her husband, who lives with cancer, and for her daughter, who has Type 1 diabetes and chronic kidney disease*

Gender inequalities are prevalent across many sectors, including healthcare, where disparities manifest in access to services and gender biases in treatment. This imbalance may contribute to the trust gap we identified in our data, where women express less confidence in healthcare systems. Although we cannot draw definitive conclusions about the factors driving this trust gap, OECD studies suggests that gender biases – such as limited access to gender-specific healthcare – are likely contributing factors (OECD, 2023[9]). Women's concerns, particularly around chronic conditions, are often under-represented in research and decision-making, which can lead to experiences of neglect or inadequate care (Foo, Sundram and Legido-Quigley, 2020[10]).

Although our data are inconclusive, investing in gender-sensitive policies could be a valuable step towards closing this trust gap. Measures such as increasing women's representation in health leadership positions, ensuring equitable access to services, and training health professionals to address gender-specific needs can all help build trust in healthcare systems. Such initiatives would not only improve trust but also lead to more inclusive, responsive and effective healthcare systems.

5.2.3. Other experiences with care

Gender gaps for several other PREMs were analysed: confidence in managing own health and well-being, co-ordination and person-centredness. These gaps are not shown in this chapter, as they are not statistically significant. For co-ordination and person-centredness the gaps are favouring men in almost all cases. Confidence in self-management is the only PREM that provides a more mixed picture, with gender differences in both directions.

5.2.4. Other or non-disclosed genders

The proportion of respondents who identified as a non-binary (other) gender, or chose to not disclose their gender, was 0.7% of the total survey population, with notable variations between countries.[1] These small numbers make country-level comparisons challenging, therefore only results for the total PaRIS population can be reported. The reasons why people may choose not to report their gender are unknown, and some within this group may still identify as either a man or a woman.

Although these limitations prevent drawing firm conclusions, the results, as shown in Figure 5.5, indicate that this group scores significantly lower on all PaRIS key indicators compared to men and women. This suggests that gender-related issues extend beyond the binary framework of men versus women.

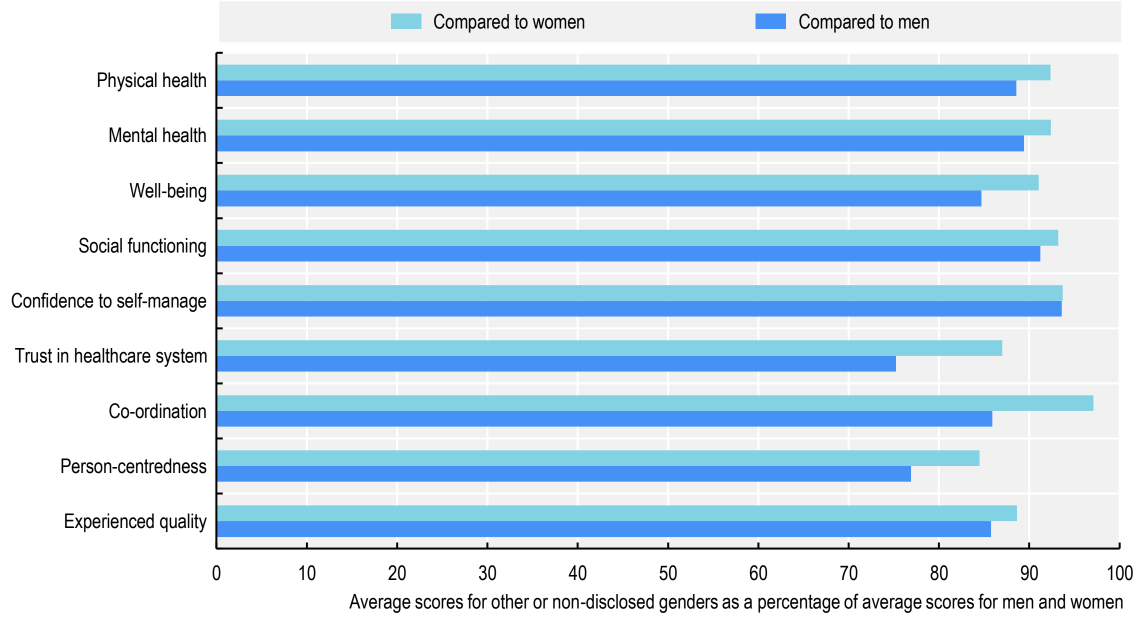
Physical health is reported as approximately 11.4% lower than that of men and 7.4% lower than that of women. Mental health scores are around 10.6% lower than men and 7.6% lower than women. Well-being is rated 15.3% lower than men and 8.9% lower than women. Social functioning follows a similar pattern, with scores approximately 8.8% lower than men and 6.8% lower than women. Confidence in self-management shows a slight difference of 6.4% lower than men and 6.3% lower than women. People with other or non-disclosed genders are also less likely to trust the healthcare system: 24.7% lower than men and 13.0% lower than women. Co-ordination is 14.1% lower than men and 2.9% lower than women. Person-centredness is 23.1% lower than men and 15.5% lower than women.

Particularly the low trust levels likely reflect the challenges that non-binary people face in navigating healthcare systems that are predominantly designed around binary gender models (Teti et al., 2021[11]). The disparities experienced by those of other or non-disclosed genders may be compounded by a lack of visibility and tailored support within healthcare policies. Often, healthcare systems are structured around binary gender models, neglecting the specific needs of non-binary or gender-nonconforming individuals. This invisibility can exacerbate existing barriers, contributing to feelings of exclusion and mistrust towards healthcare services.

Literature shows that people who do not identify as man or woman report feeling invisible or marginalised within the healthcare system and feel that they "did not exist for the health system" due to the absence of inclusive documentation and practices (Gómez-Ibáñez et al., 2024[12]). These limitations in data collection and healthcare engagement underscore the need for more inclusive strategies and education for healthcare workers to address the specific health and support needs of non-binary and gender-nonconforming populations, thereby fostering greater equity and trust in healthcare services.

Figure 5.5. People with other or non-disclosed genders report lower scores on most outcomes and experiences compared to men and women

Scores on nine indicators of people with non-binary or non-disclosed genders as a percentage of the scores or men and women



Note: Percentages were calculated by dividing scores of other or non-disclosed gender by men and other or non-disclosed gender by women.
Source: OECD PaRIS 2024 Database. See Chapter 2 for a detailed description of the indicators.

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5.3. Socio-economic inequalities: Education and income groups

Socio-economic factors, such as income, education, and employment status, play a pivotal role in shaping classic health indicators like life expectancy and healthy life expectancy. These disparities are well-documented, revealing pronounced gaps in access to healthcare services and overall health outcomes.

Socio-economic disparities in health outcomes are influenced by various interconnected factors. Firstly, social determinants of health, including housing conditions, labour circumstances, and employment opportunities, significantly impact peoples' overall well-being (Belloni, Carrino and Meschi, 2022[13]). Poor housing conditions, precarious employment, and limited access to resources exacerbate health inequities among socio-economically disadvantaged populations (Rolfe et al., 2020[14]). Secondly, socio-economically disadvantaged groups may face barriers in accessing good quality healthcare services, including affordability, geographical proximity, and cultural competence (Khatri and Assefa, 2022[15]). Additionally, disparities in healthcare capabilities and health literacy further compound these challenges, with education levels correlating with people's understanding of health information and their ability to navigate the healthcare system effectively. Finally, health behaviours such as smoking, alcohol consumption, diet, and physical activity patterns often correlate with socio-economic factors (de Boer et al., 2020[16]).

Countries' policies can influence such inequalities. Some countries' policies may better address the needs of deprived groups, leading to more equitable outcomes. This may include supporting people in accessing good quality care and reducing complexity in the healthcare system, and targeted programmes to promote better health outcomes for socio-economically disadvantaged populations.

While the provision of an extensive explanatory model goes beyond the scope of this report, this section describes socio-economic gaps in reported outcomes, experiences and trust and on how this varies across different countries.

Box 5.1. Socio-economic status in PaRIS

Indicators for socio-economic status focus on education and income.

- **Income** is measured in three categories, high, median and low household income. The categories are relative to the income distributions in specific countries.
- **Educational level** was measured with the ISCED-11 scale, which distinguishes 9 levels, varying from early childhood education to doctoral or equivalent. In some figures, the classification will be simplified to "low, middle and high").
- A special category has been defined of people who face **financial hardship**. These people answered "always or often" to at least one of the following questions: *How often in the past 12 months would you say you were worried or stressed about the following things? 1) having enough money to buy healthy meals? 2)* Having enough money to pay your rent or mortgage? 3) Having enough money to pay for other monthly bills, like electricity, heat, and your telephone? The size of this group varied from 4% to 30% of the population in a country.

Source: PaRIS Patient Questionnaire; International Labour Organization (ISCED); The Commonwealth Fund (2017), International Health Policy Survey.

5.3.1. Income and educational gaps

Income and education are key social determinants of health outcomes, often closely linked but also having distinct and interconnected effects on people's health and well-being.

Higher income generally provides better access to healthcare, healthier living conditions, and improved nutrition (McMaughan, Oloruntoba and Smith, 2020[17]). In many countries, those with higher incomes also benefit from resources that contribute to overall better health. Additionally, financial stability reduces stress, positively impacting mental health.

Education plays a crucial role in equipping people with the knowledge and skills necessary for healthy behaviours, managing health conditions and effective navigation of healthcare systems (Conti, Heckman and Urzua, 2010[18]). Higher education levels correlate with better health literacy, enabling individuals to make informed health decisions (Chapter 4).

Therefore, it is also plausible that education and income may influence how people experience healthcare. For instance, those with higher education and income levels may be better equipped to navigate within healthcare settings, potentially leading to different healthcare experiences and outcomes (Hahn and Truman, 2015[19]; Andermann, 2016[20]).

Other social determinants, such as access to safe housing, employment opportunities, and community resources, further influence health outcomes and often intersect with income and education levels. Understanding these complex interactions is essential for developing strategies to improve people-centredness of healthcare systems and reduce health inequalities.

Because of the close relationship between education and income, outcomes and experiences in this section are presented by both factors, with comparisons of income groups controlled for education.

People with a lower socio-economic status get sick earlier in their lives

While results in this section are age and sex-standardised it is important to realise that people with lower education and income on average get chronic conditions at a younger age. This has been shown extensively in the literature and was also confirmed by the PaRIS data. Figure 5.6 shows the number of chronic conditions by age groups and broken down by education within age groups.

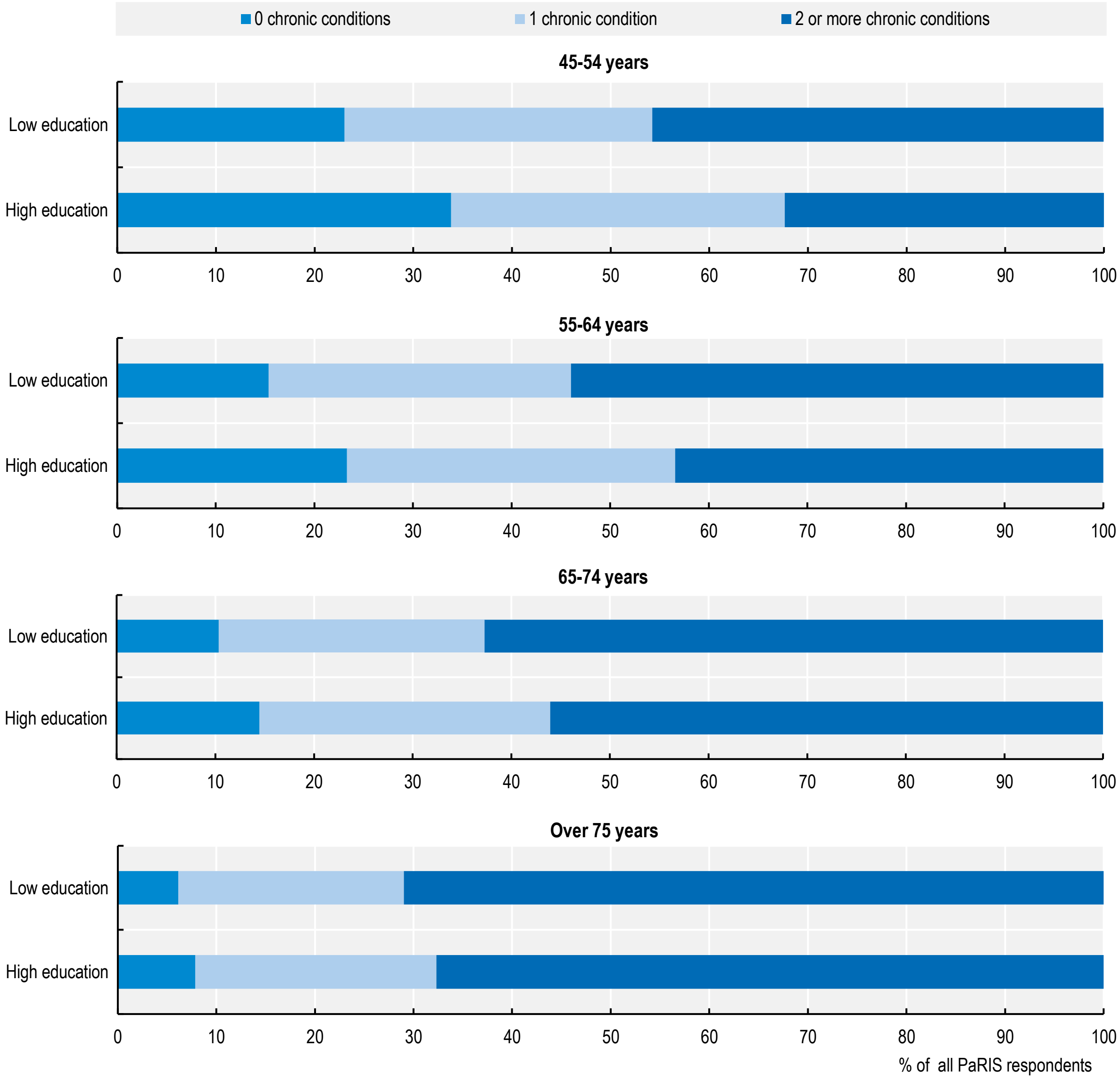
This figure illustrates that both the likelihood of having any chronic condition and the number of chronic conditions increase with age. There are notable differences between education levels: among the youngest group, 34% of higher-educated people have no chronic conditions, compared to only 23% among those with the lowest education levels. However, these differences diminish with age, and in the oldest age group, nearly the same high percentage of people have chronic conditions, around 92% for higher-educated and 94% for lower educated.

A similar pattern is observed for multimorbidity (having two or more chronic conditions). In the youngest age group, 32% of higher-educated people live with multiple chronic conditions, compared to 46% of those with lower education – a gap of 14 percentage points. As age increases, this difference narrows: among those aged 55-64, the gap reduces to 11 percentage points; for people aged 65-74, it further shrinks to 7 percentage points; and by age 75 and older, the difference is only 3 percentage points.

The absence of differences between education groups in the oldest age category may for an important part be explained by a “survival effect”; people in the highest education categories can expect to live around six years longer than those in the lowest education groups (OECD, 2017[21]). Being lower educated and having (multiple) chronic conditions may therefore be a cumulation of risk factors for dying at a younger age.

Figure 5.6. People with lower education often get chronic conditions at a younger age

Percentages of all PaRIS respondents with 0, 1 or 2 or more chronic conditions, broken down by age group and education



Note: Self-reported chronic conditions.
Source: OECD PaRIS 2024 Database.

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5.3.2. People with a high income and higher education report better physical and mental health

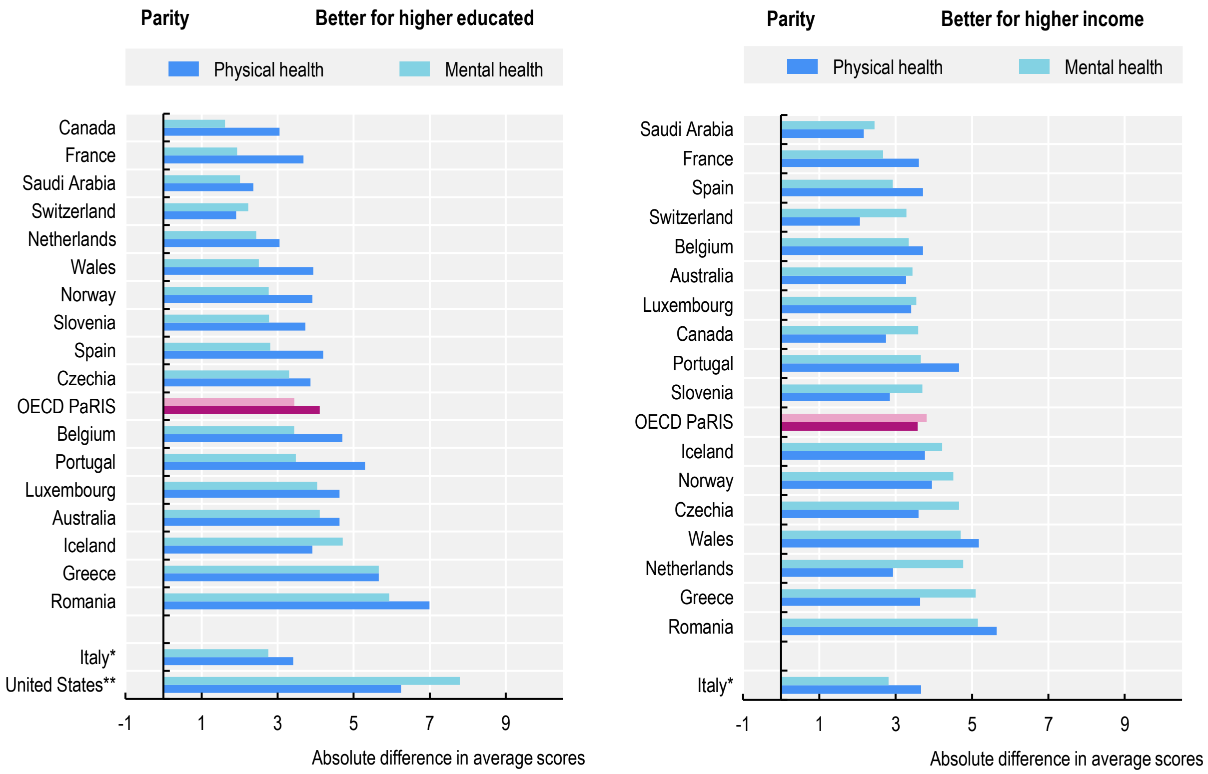
PaRIS data show that also among people who live with chronic conditions, socio-economic factors matter. Although there are exceptions on some indicators and some countries, in general, people with higher education and income show considerably more favourable scores on patient-reported outcomes.

Figure 5.7 shows the self-reported physical and mental health disparities among different education and income groups. Statistically significant gaps are observed for both indicators across all countries. This suggests that while education and income are closely linked, each has an independent effect on health outcomes.

In most countries, the size of these gaps is similar between education and income groups, typically ranging between 2 and 5 points. Notably, countries with larger gaps in health outcomes between education groups tend to also exhibit larger gaps between income groups. However, there are exceptions. For instance, in the Netherlands and Norway, the mental health disparities between education groups are relatively small, whereas the gaps between income groups are more pronounced.

Figure 5.7. Higher educated and higher income groups report better health in all countries

Mental and physical health, high and low education and high- and low-income groups compared across countries



Note: People with one or more chronic conditions. PROMIS® Scale v1.2 – Global Health component for physical health and mental are T-score metrics, higher values represent better physical health. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older; data for income groups not available. The comparison between income groups was controlled for education. All differences are statistically significant ($p<0.05$), except for Canada by education in mental health.
Source: OECD PaRIS 2024 Database.

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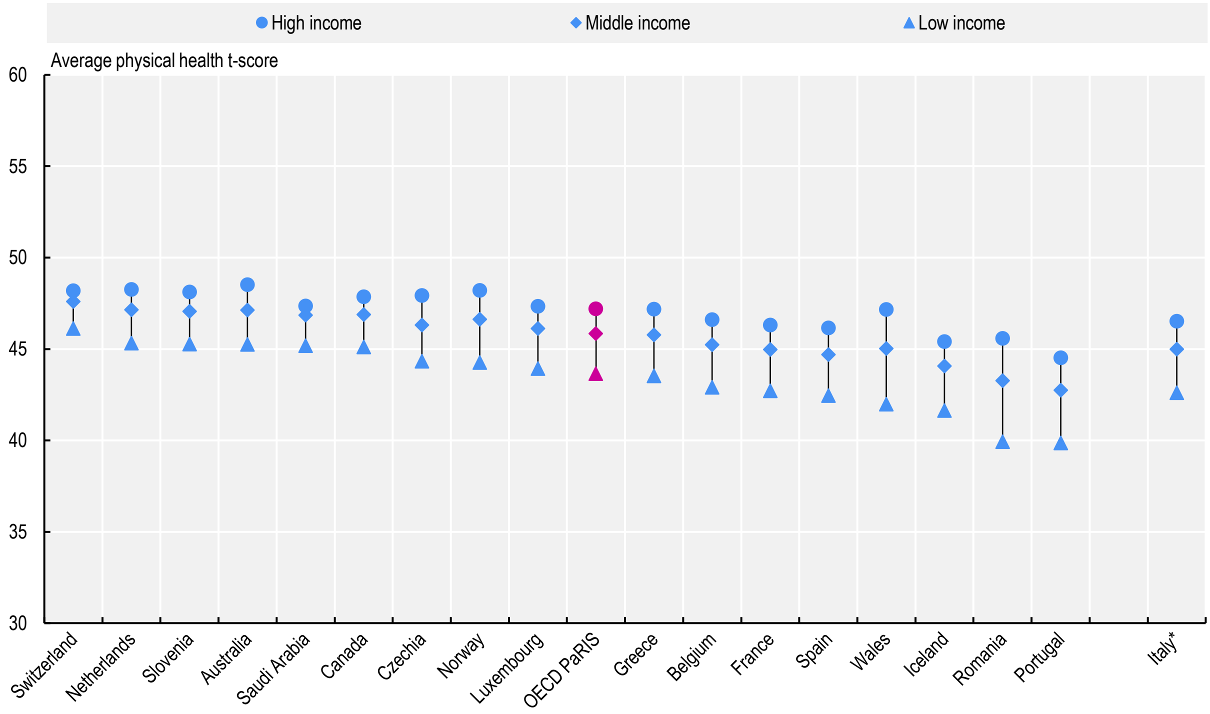
Figure 5.8 shows that countries where lower-income groups report better physical health tend to have smaller disparities between income groups. While this pattern is not entirely consistent, countries with relatively small gaps – such as Switzerland and the Netherlands – show physical health scores for the lowest income group that exceed those of the middle-income group in countries like Romania and Portugal.

Figure 5.8. Most countries with higher physical health scores overall, also have smaller gaps between income groups

PROMIS physical health scores for low-, middle- and high-income groups



Note: People with one or more chronic conditions. Physical health: PROMIS® Scale v1.2 – Global Health component for physical health is a T-score metric with a range of 16-68, and a good-fair cutoff of 42, higher values represent better physical health. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. The comparison between income groups was controlled for education.
Source: OECD PaRIS 2024 Database.

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5.3.3. Income gaps in social functioning vary by a factor of four between countries

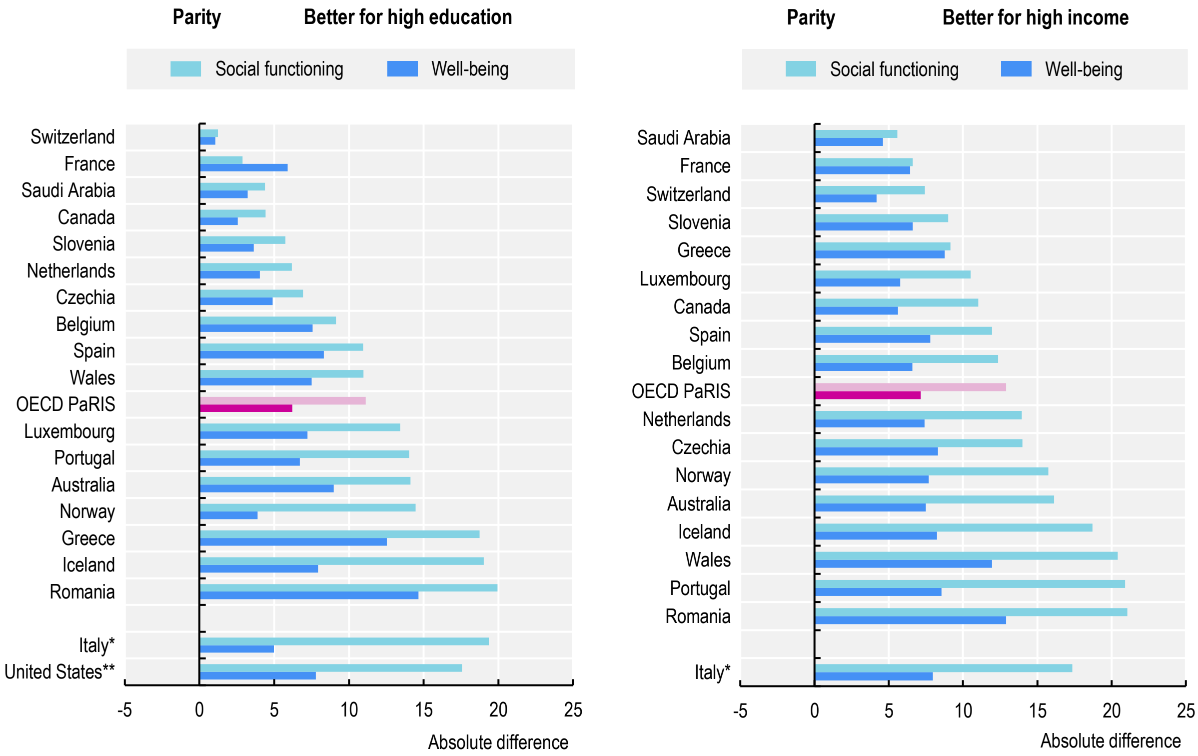
As shown in Figure 5.9, also in well-being and social functioning there are clear differences between education and income groups, in all cases in favour of the higher income and higher educated groups. Also here, both education and income have independent effects. For social functioning, the inequalities by income groups are somewhat larger in most countries.

For social functioning the differences between countries are remarkable, from almost no gap between education groups in Switzerland to gaps between 15% and 20% in e.g. Romania, Greece and Iceland. Even after controlling for education, this gap is also apparent between income groups, with a four-fold variation between countries.

For well-being, the differences between countries are somewhat smaller but also here, countries differ considerably, varying from almost no gap of more than 10 percentage points between education and income groups.

Figure 5.9. People with higher education and income are more positive about their well-being and social functioning

Absolute differences in average scores for income and education groups on the WHO-5 well-being index and differences in percentages of low and high educated and people with low and high income who are positive about how they carry out usual social activities and roles



Note: People with one or more chronic conditions. Social functioning: Answer to the question: "In general, please rate how well you carry out your usual social activities and roles [further specified in questionnaire]", "good, very good or excellent" versus "fair or poor". Well-being: WHO-5 well-being index. Response to five questions measuring well-being. Raw scale 0-25 converted to 0-100 scale with 0 being the lowest possible well-being and 100 the highest. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older; data for income groups not available. The comparison between income groups was controlled for education. All differences are statistically significant ($p<0.05$), except for education gap in well-being in Canada and Switzerland and education gap in social functioning in Canada, France and Switzerland.
Source: OECD PaRIS 2024 Database.

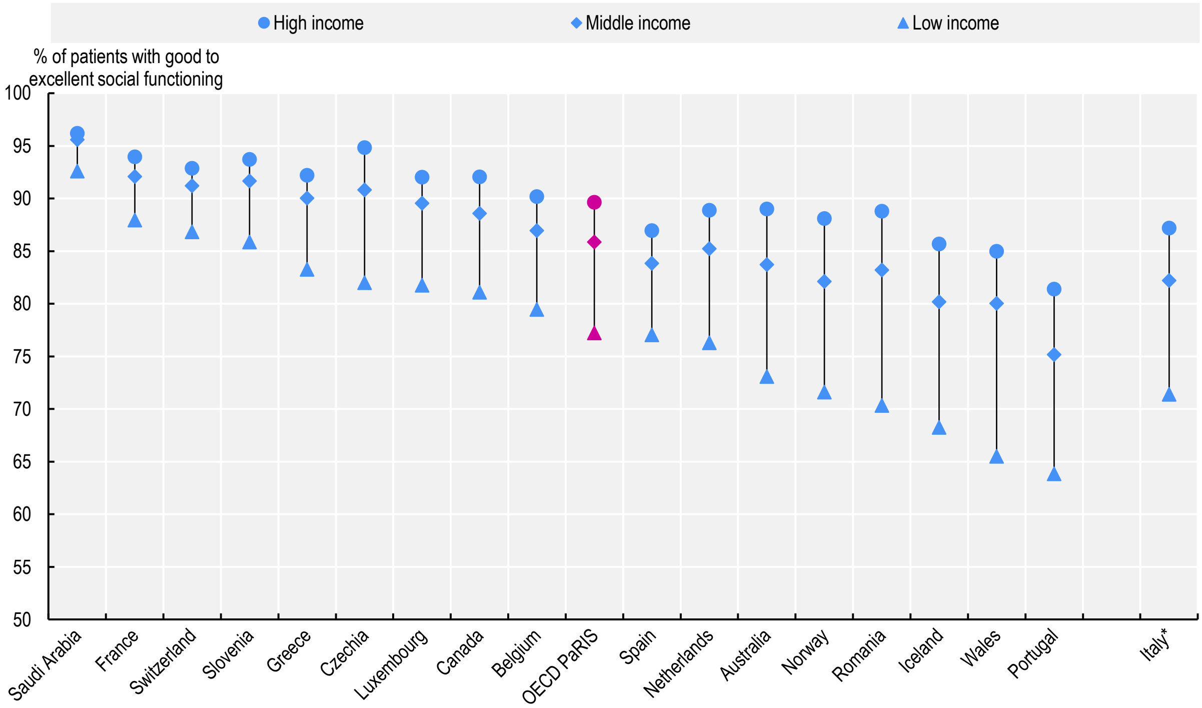
StatLink https://stat.link/neo68l

> *"As a single man with a university degree and a high income, I don't experience anxiety about healthcare or related costs. When attending a peer group with other people living with HIV, I feel privileged – I don't have to worry about my living conditions, have access to quality information about my chronic health conditions, and can take time off work if needed."*
>
> *Robert, 54 years old, living with HIV and chronic heart disease*

As shown in Figure 5.10, countries where fewer people report good social functioning show the largest gaps between income groups. A similar pattern (not shown) exists between education groups.

Figure 5.10. Countries where more people report good social functioning overall, show smaller gaps between income groups

Percentage of people reporting good, very good or excellent social functioning among people with chronic conditions in low, middle and high-income groups



Notes: People with one or more chronic conditions. Social functioning: Answer to the question: “In general, please rate how well you carry out your usual social activities and roles [further specified in questionnaire]”, “good, very good or excellent” versus “fair or poor”. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions.
Source: OECD PaRIS 2024 Database.

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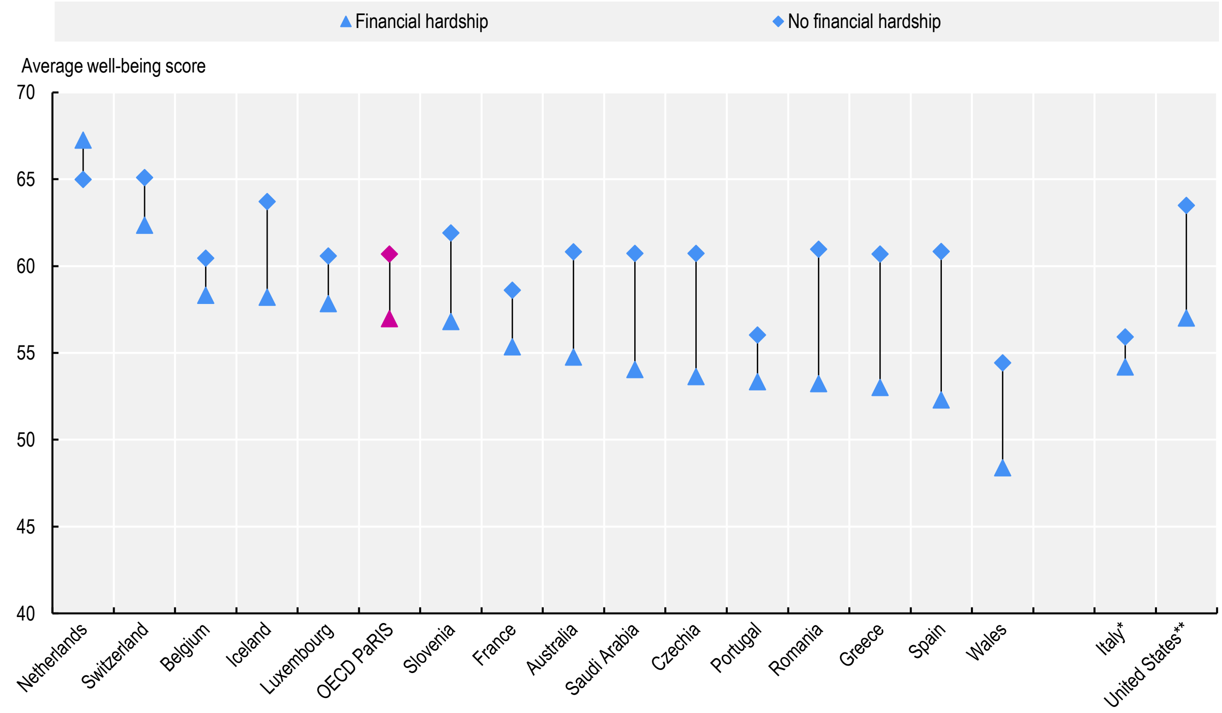
Well-being is not only related to income and education, there is also a clear negative correlation with financial hardship. In most countries, people who say they have problems paying their bills report lower levels of well-being as shown in Figure 5.11. Also here, there is a relation between the size of the gap and the overall level, meaning that countries with lower levels of well-being also have wider gaps. However, this relationship is less straightforward.

Figure 5.11. People who face financial hardship report lower levels of well-being, with gaps varying between 0 and 8 percentage points between countries

Scores on WHO-well-being scale of people with and without financial hardship



Note: WHO-5 well-being index. Response to five questions measuring well-being. Raw scale 0-25 converted to 0-100 scale with 0 being the lowest possible well-being and 100 the highest. Countries are sorted from highest score on WHO5- well-being index for financial hardship group (left) to lowest score (right). * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older; data for income groups not available. Gaps are statistically significant for: Australia, Czechia, France, Greece, Iceland, Romania, Saudi Arabia, Slovenia, Spain and Wales ($p<0.05$). No valid data were available for Norway and Canada.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/a806ls

5.3.4. People with higher incomes and education have more positive experiences with healthcare and have more trust in the healthcare system

Quality of care

Figure 5.12 shows gaps between education and income groups for experienced quality of care and confidence to manage own health. People with higher education are more often positive about the quality of the care that they receive, albeit that the differences are small and, in most countries, not significant. Only for Portugal a significant difference of 8 percentage points was found in the share of people who rated the quality of care good, very good or excellent.

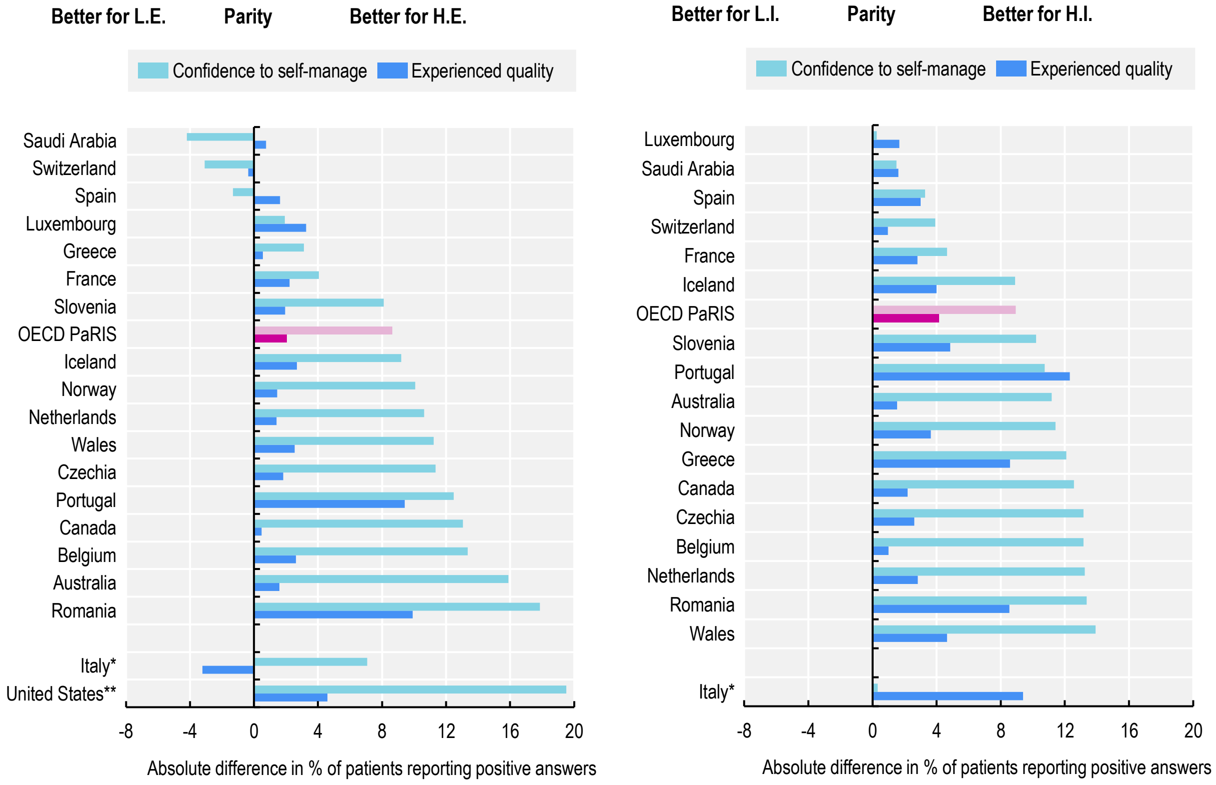
The differences between income groups are somewhat larger, with statistically significant gaps between 2 and 6 percentage points in Czechia, the Netherlands, Luxembourg, Norway and Slovenia and 11 percentage points in Portugal.

People with higher education and those who earn higher incomes are more often confident in their ability to manage their own health and well-being. Beyond the complexity of their health situation, this confidence is likely tied to the skills and health literacy that tend to be more prevalent among highly educated people.

However, even after controlling for education, the gaps between income groups remain remarkable. In half of the countries studied, the difference in confidence between education groups is 10 percentage points or more, and similar disparities exist between income groups. Nonetheless, some countries, such as Luxembourg, Spain and Saudi Arabia, show little to no significant gaps between these groups.

Figure 5.12. In most countries, people with higher education or income are more confident in managing their health, while in some countries, this difference is minimal

Gaps between education and income groups in general experienced quality of care and confidence in managing own health



Note: People with one or more chronic conditions. L.E: Low education; H.E: High education; L.I: Low income; H.I: High income. Confidence to self-manage: P3CEQ. Response to question: “How confident are you that you can manage your own health and well-being?”, “confident or very confident” versus “somewhat confident or not confident at all”. Experienced quality: Response to question: “When taking all things into consideration in relation to the care you have received, overall, how do you rate the medical care that you have received in the past 12 months from your primary care centre?”, “good, very good or excellent” versus “fair or poor”. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older; data for income groups not available. The comparison between income groups was controlled for education. Gaps between education groups for experienced quality only statistically significant for Romania ($p<0.05$). Gaps between income groups for experienced quality statistically significant for Czechia ($p<0.05$). Gaps between education groups for self-confidence statistically significant for Australia, Belgium, Czechia, France, the Netherlands, Portugal, Romania and the United States ($p<0.05$). Gaps between income groups for self-confidence statistically significant for Belgium, Czechia, France, the Netherlands and Wales ($p<0.05$).
Source: OECD PaRIS 2024 Database.

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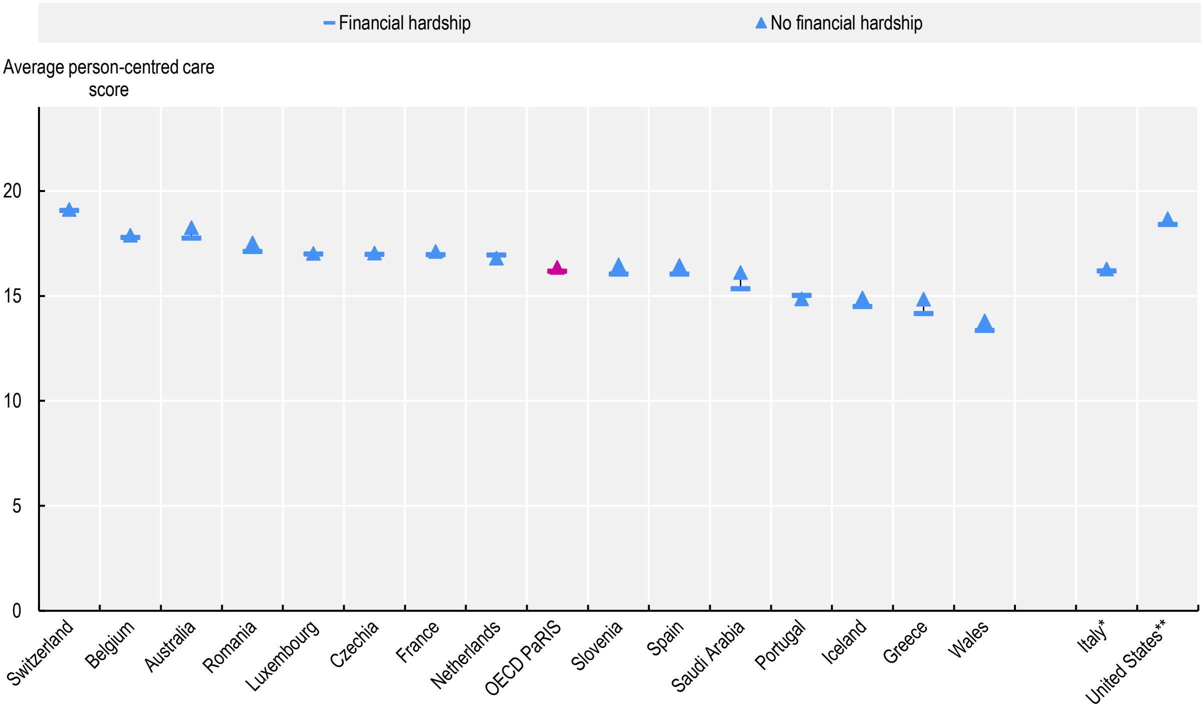
Other experiences with care show minor gaps

Analyses on indicators of co-ordination and person-centredness showed few education and income gaps. For person-centredness differences between 1 and 5 percentage points were found between income groups in the Netherlands, Norway, Portugal and Wales.

Figure 5.13 shows, for each country, how people experiencing financial hardship and those who do not experience person-centred care. As can be seen in the figure, there is no significant difference between these groups in any of the countries. This suggests that primary care professionals generally adapt to people's individual needs, regardless of their economic position.

Figure 5.13. People with and without financial hardship do not differ in their experience of person-centred care

Scores on PC3Q person-centredness scale for people facing financial hardship and those not facing financial hardship



Note: P3CEQ Questionnaire. Response to eight questions measuring if care is person-centred. Scale ranges from 0 (lowest experienced person-centredness to 24 (best experienced person-centredness). Countries are sorted from highest score on person-centredness for financial hardship group (left) to lowest score (right). * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older; data for income groups not available. None of the gaps are statistically significant ($p<0.05$). No valid data were available for Norway and Canada.
Source: OECD PaRIS 2024 Database.

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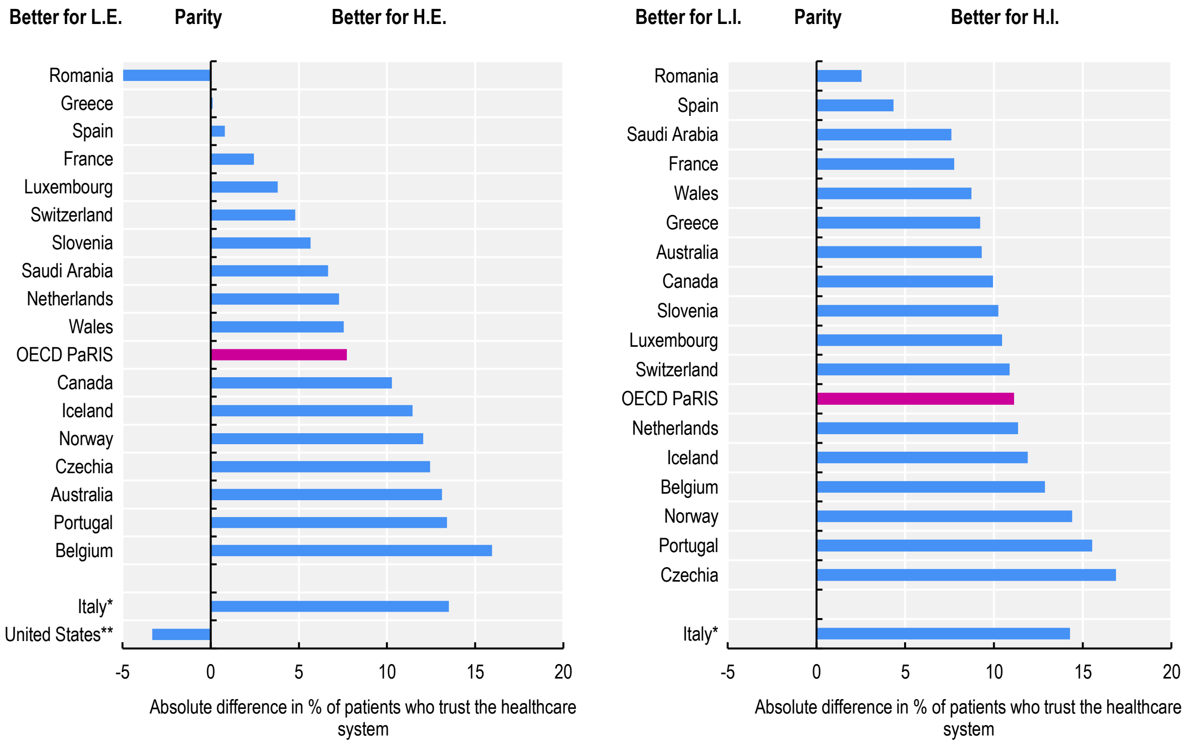
Trust in healthcare systems: Both education and income matters

In most countries higher educated people have more trust in the healthcare system. Differences between countries are considerable, varying from no or minor differences in Spain, Luxembourg, Greece and France to gaps of over 10 percentage points in Czechia, Australia, Portugal and Belgium. Gaps between income groups are even larger, with half of the countries showing gaps of 10 percentage points or more.

Figure 5.14. People with a higher education and income have more trust in the healthcare system

Gaps between education and income groups in trust in the healthcare system



Note: People with one or more chronic conditions. L.E: Low education; H.E: High education; L.I: Low income; H.I: High income. Trust in healthcare system: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older; data for income groups not available.
The comparison between income groups was controlled for education. Gaps between education groups statistically significant for Australia, Belgium, Canada, Czechia, Iceland, Italy, Norway and Portugal. (p<0.05). Gaps between income groups statistically significant for Belgium, Canada, Czechia, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Saudi Arabia, Slovenia, Spain and Switzerland (p<0.05).
Source: OECD PaRIS 2024 Database.

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5.4. Gender and socio-economic gaps remain after accounting for other factors

This chapter examines disparities in health outcomes, highlighting gaps related to specific factors such as gender and socio-economic status. However, these factors are not isolated in real life. For example, a person may be a woman with a lower income and live with multiple chronic conditions. These intersections of identity and circumstance mean that health inequalities are often the result of multiple, interrelated factors. Figure 5.15 presents results from regression analyses that account for several factors simultaneously – including gender, income, education, multimorbidity, and place of birth – to provide a more comprehensive understanding of how these elements relate independently with self-reported health outcomes.

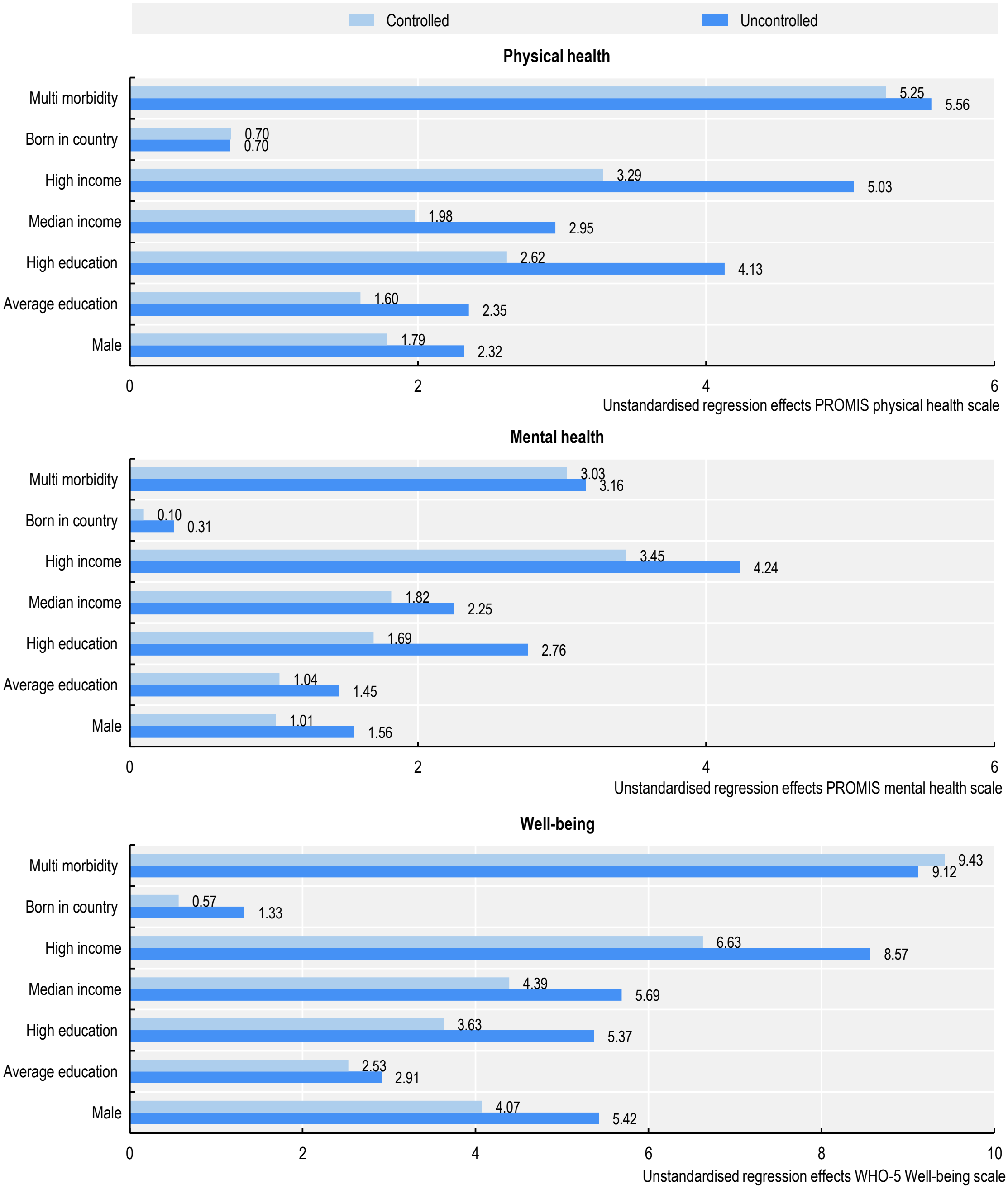
As expected, relatively strong associations were found between the three outcome measures – physical health, mental health, and well-being – and multimorbidity. In this analysis, multimorbidity primarily served as a control variable, given that it is more prevalent among lower socio-economic groups. Chapter 3 delves deeper into the specific aspects related to multimorbidity.

The results indicate persistent gender and socio-economic disparities, even after accounting for factors such as age, multimorbidity, and place of birth. The strongest effects were observed for income, particularly between the highest and lowest thirds of the income distribution. The gender effect was most pronounced for well-being, with women scoring 4 points lower on a 0-100 scale.

People born abroad reported slightly poorer health and well-being, although these effects were relatively small. For well-being, the relationship was largely explained by other factors. These small effects should be interpreted cautiously, as immigrants who do not speak the national language well are notoriously hard to reach in surveys, potentially making this group underrepresented.

Results presented in Figure 5.15 represent the overall PaRIS population, but results may differ by country. Additional analyses have been done to detect interaction effects between gender and income, gender and education and gender and place of birth. These analyses did not yield any statistically significant results.

Figure 5.15. Gender differences in health and well-being remain after controlling for other factors but gaps between income groups are more prominent



Note: Uncontrolled: relations only controlled for age; Controlled: unique regression effect controlling for all other variables shown and age. Multimorbidity effect for people with 1 chronic condition compared to people with multiple chronic conditions; Born in country: compared to people born outside the survey country; Income high and median compared to people with low income; Education high and average compared to people with low education; Male compared to female. Random intercept models with patient, practice and country level. Physical health: PROMIS® Scale v1.2 – Global Health component for physical health is a T-score metric with a range of 16-68, and a good-fair cutoff of 42, higher values represent better physical health. Mental health: PROMIS® Scale v1.2 – Global Health component for mental health is a T-score metric with a range of 21-68, and a good-fair cutoff of 40, higher values represent better mental health. Well-being: WHO-5 well-being index. Response to five questions measuring well-being. raw scale 0-25 converted to 0-100 scale with 0 being the lowest possible well-being and 100 the highest. All effects are statistically significant (p<0.05) except controlled effects for born in country and mental health and well-being.
Source: OECD PaRIS database 2024.

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5.5. Recommendations

5.5.1. Gender inequalities in health are persistent and ask for a targeted policy approach including explicit target setting

Gender inequalities persist across various domains of life, a fact widely acknowledged by experts and policy makers. In response, the OECD has been encouraging countries to adopt comprehensive, whole-of-government strategies for gender equality and mainstreaming (OECD, 2023[9]). The findings from PaRIS reaffirm the persistence of gender gaps while providing more nuanced insights, particularly in the area of health outcomes. While women live longer, they also report worse health outcomes. Moreover, these differences remain after considering age, socio-economic status and number of chronic conditions, indicating a “real” gender inequality.

The PaRIS data reveal that gender gaps are particularly pronounced in healthcare outcomes like well-being and physical health, while they are less evident in healthcare experiences. While measures of healthcare experience, such as perceived quality and person-centredness, are largely influenced by the care received, broader factors play a significant role in shaping individuals’ well-being and physical and mental health. While the data do not allow for firm conclusions about causality, it seems that factors affecting gender inequalities lie largely outside primary care.

As shown in previous OECD work on this topic, gender inequalities are not exclusive to healthcare, but are part of a much broader problem that should be addressed with comprehensive, gender-sensitive strategies that integrate gender perspectives throughout planning, implementation, and evaluation. Policies should adopt an intersectional approach, recognising how factors like age, ethnicity, and socio-economic status intersect with gender to influence health outcomes. Strengthening the collection and use of gender-disaggregated data is crucial for identifying gaps and tailoring interventions. Healthcare systems could work on capacity building through training on gender sensitivity to reduce biases and foster equitable care.

5.5.2. Targeted policy interventions should address socio-economic inequalities in outcomes and experiences

People with lower education face a dual disadvantage: they tend to fall ill earlier in their lives, and once sick, they experience worse outcomes compared to their higher-educated counterparts. While income and education are correlated, each exerts an independent influence on health outcomes and experiences. For income in particular, the relationship is bidirectional: people with lower incomes may have fewer resources to improve their health, while poor health conditions can, in turn, limit their opportunities to earn a higher income.

A similar pattern emerges as to that observed in the analysis of gender-based inequalities. While disparities in health outcomes are substantial, differences in healthcare experiences are relatively small. Primary care professionals, as the first point of contact in the healthcare system, play a critical role in addressing inequalities between socio-economic groups. The relatively small gaps in healthcare experiences suggest that primary care professionals often succeed in tailoring care to the needs of diverse socio-economic groups.

However, disparities in outcomes, such as physical and mental health and overall well-being, are shaped by a complex interplay of factors that extend beyond the healthcare system. This indicates that policy interventions focusing solely on healthcare systems are unlikely to be sufficient. Health inequalities are deeply interwoven with broader socio-economic disparities. In the domain of healthcare, policies may focus on investing in healthcare services in deprived neighbourhoods, community-based programmes to improve health literacy and training of healthcare workers to recognise and mitigate socio-economic barriers.

Trust in the healthcare system deserves particular attention. The differences in trust levels between genders, as well as between education and income groups, are significant. Healthcare systems and policy makers have a crucial role in building and maintaining trust among people with chronic conditions. This topic is further explored in Chapter 6.

5.5.3. Integrating health equity metrics into health system performance monitoring

To effectively address gender and socio-economic disparities in health, healthcare systems must commit to routinely collecting and monitoring disaggregated data across a broader range of demographic dimensions that expose disparities in health outcomes and experiences. Many healthcare systems may not be accustomed to systematically gathering such detailed data, but doing so is crucial to accurately identifying and addressing inequalities. Without this level of detail, the specific challenges faced by particularly vulnerable groups risk being overlooked (OECD, 2024[22]).

Building the capacity for routine disaggregated data collection requires a fundamental shift in how health systems operate. Standardising tools and processes for data collection is essential, alongside expanding data gathering efforts to include groups often marginalised or underrepresented in traditional health statistics – such as immigrants, non-binary individuals, and those with complex or overlapping disadvantages. This broader scope will provide a clearer understanding of health inequities and the structural barriers that perpetuate them. Such insights can then inform policy development and resource allocation, ensuring interventions are focused and effective in meeting the needs of underserved populations.

Finally, integrating this expanded data into performance monitoring frameworks also enhances accountability and transparency. Regular public reporting on disaggregated metrics, such as health outcomes and experiences by genders, would demonstrate a commitment to equity and foster trust among the populations served. Initiatives like PaRIS, which provide international benchmarking of equity metrics, can facilitate the sharing of best practices, enabling countries to learn from one another and improve outcomes for all demographic groups. Monitoring and accountability mechanisms are vital to oversee progress and enforce compliance with gender and socio-economic equality objectives.

5.6. Conclusion

This chapter highlights the persistence of structural inequalities in health outcomes and experiences across PaRIS countries, with significant gender and socio-economic disparities. While primary care systems deliver relatively equitable patient-reported experiences, gaps in outcomes – particularly for women and lower-income or less-educated groups – reflect the influence of broader societal determinants. Tackling these disparities requires a whole-of-government approach that integrates healthcare and social policies to address root causes, such as poverty, education gaps, and gender biases. Systematically measuring and reporting disparities will enable better-targeted interventions, resource allocation, and accountability, addressing these inequalities to not only improve individual well-being but also strengthen the equity and resilience of healthcare systems, fostering a fairer and more inclusive society.

Notes

[1] People were included who answered “other” or “prefer not to say” to the question “which of the following best describes you” (female, male, other, prefer not to say). People who skipped the question were excluded.

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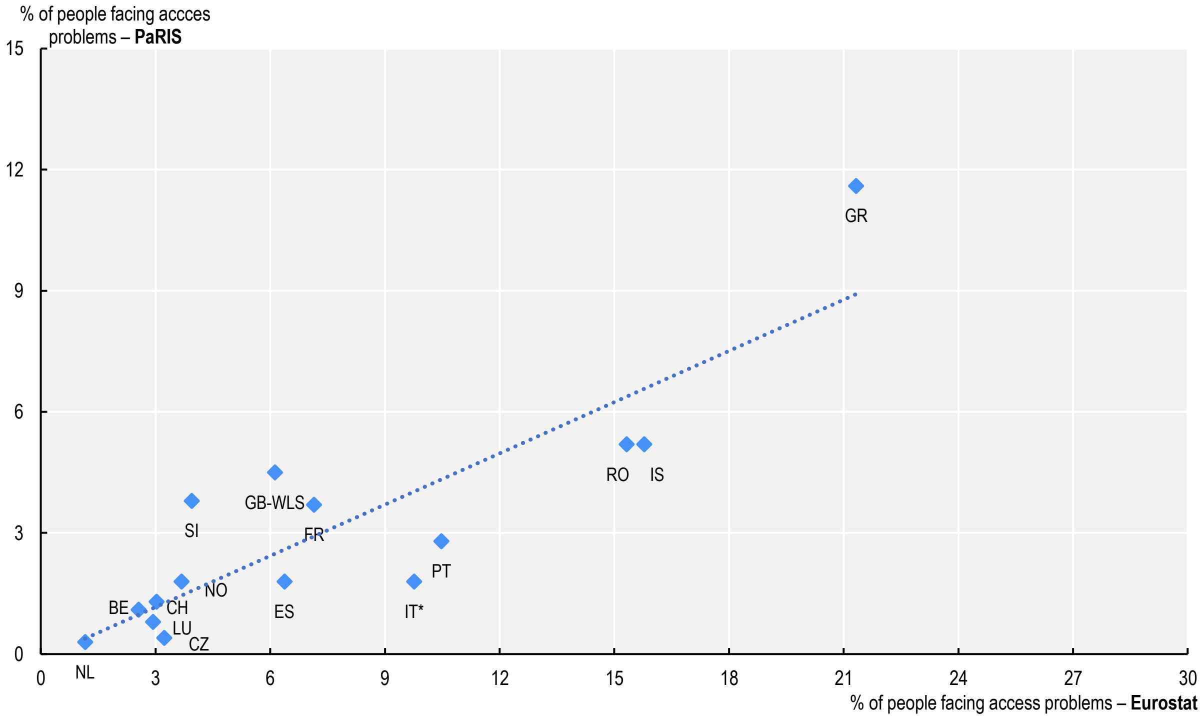
Annex 5.A. Correlation between access problems reported in PaRIS and in Eurostat survey

To explore the relation between access problems reported in population-based surveys and in PaRIS, figures from PaRIS were compared with figures from Eurostat. An important difference is that the Eurostat data refer to people 16 years and over and the PaRIS data to people 45 years and older. The percentages in the Eurostat data are consistently higher, which could partly be explained by the different age category. There is, however, a strong correlation, indicating that countries with bigger access problems also have more patients with access problems in PaRIS.

Annex Figure 5.A.1. Relation between access problems reported by Eurostat and PaRIS

Percentage of people reporting access problems



Note: To calculate the percentage for PaRIS patients, two items were combined: the percentage indicate the share of people answering 'always or often" to the following questions: How often did you have a health problem but did not seek care because of difficulties in travelling to your primary care centre? How often did you have a health problem but did not seek care, or did not take a prescription medicine because of the cost? The Eurostat item is called: self-reported unmet needs for medical examination and care with as reasons: too expensive, too far to travel or waiting list. For Wales, Eurostat data from the United Kingdom were used.

Source: OECD PaRIS 2024 Database; Eurostat (2023 or latest available year), https://ec.europa.eu/eurostat/databrowser/view/sdg_03_60__custom_13475331/default/table?lang=en.

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6

Building trustworthy 21st century healthcare systems

Trust is an important indicator of the quality and performance of healthcare systems and individual care professionals. More than half of PaRIS respondents trust the healthcare system in their country. This chapter explores empirical findings and relationships related to trust from PaRIS data linking trust related outcomes to physical and mental health, experiences of care, healthcare capabilities, individual characteristics, and primary care characteristics. Overall, higher levels of trust are associated with better health, better experiences of care, care co-ordination, and better capacity for self-management. The chapter concludes by discussing policies that and investments that can be implemented to build higher levels of trust in healthcare systems and care professionals.

In Brief

What PaRIS data tell us about trust

- **People living with chronic health conditions often depend heavily on healthcare systems to deliver their care or to provide support for managing their conditions.** In the context of this relationship, many people living with chronic health conditions may have limited ability to individually verify the quality of the services they receive. This makes trust, built over time, essential for ensuring confidence in the healthcare system.
- **More than half of the PaRIS respondents trust their country's healthcare system**. However, trust levels vary significantly across countries. In Spain[1], Saudi Arabia, Norway, the Netherlands, Switzerland and Belgium, over 70% of respondents expressed trust in the healthcare system, while in Wales (United Kingdom) and Greece, trust fell below 50%.
- **People are more likely to trust the individual healthcare professionals than the broader system.** Almost four-of-five patients living with chronic health conditions had high trust in the last care professional they saw.
- **Trust in the healthcare system goes hand in hand with better health.** Patients who report high levels of general health are almost 20% more likely to trust the health system than those who report poor health (66 and 56% of each group trust the healthcare system, respectively). Likewise, the average mental health scores of those who trust the health system are 6% higher than those who do not.
- **The connection between the individual experience of high-quality care and trust is evident.** Patient perceptions of high-quality care, having a central point of contact for health problems, having longer relationships with care professionals, and seeing care professionals that schedule longer appointments all positively impact trust across countries.
- **People who felt that their primary care professional spent enough time with them are almost 90% more likely to trust the healthcare system** compared to those who did not feel this was the case (64% compared to 34%). Likewise, **people who feel like their care professional encourages them to raise concerns are 25% more likely to trust their healthcare professional** than people who are not encouraged (90% compared to 71%).Policies to promote patient safety, better care co-ordination and continuity, and sufficiently long, higher-quality care interactions can result in outcomes that influence higher levels of trust for people living with chronic health conditions.
- **Seven percent of PaRIS respondents living with chronic conditions reported that their last consultation took place virtually** (over the telephone or video consultation), as opposed to face-to-face visits with care healthcare professionals (either in the office or at home). **Virtual care services are not necessarily less trustworthy than other, more "traditional" forms of care.** People who used virtual care were often just as likely to trust the healthcare professional they saw as those who received face-to-face care in more than two-thirds of the PaRIS participating countries. Similarly, **PaRIS patient respondents who report using at least one online service offered by their healthcare professional**, such as booking appointments online, ordering repeat prescriptions online, accessing their medical records online, or video consultations **are just as likely to trust the healthcare system** as those who do not.

- As patients gain confidence in managing their own conditions, they engage more actively in their care and may view the healthcare system more as a partner in achieving better health. **Supporting patients in self-managing their conditions helps lay the foundation for trust.** Countries with higher percentages of patients with high confidence in self-management of their chronic conditions were more likely to also have higher levels of trust in healthcare systems.

6.1. Using PaRIS to put a spotlight on trust

Can patients trust that their healthcare professional is acting in their best interest? Do they think their healthcare professionals will use the latest evidence and will provide good care? Are primary care practices safe places to seek care? These are real questions many people face as they consider their interaction with their primary care practice and the healthcare system more broadly.

6.1.1. More than half of the patients in PaRIS trust the healthcare system in their country

Trust in healthcare systems is essential for their function. Efforts to promote trust have impacts from the micro (individual) to the macro (system) level. Public trust in health systems and healthcare professionals is essential for delivering quality care, as it influences how people access services, use them, and adhere to medical advice. The other way around, the consistent, responsive delivery of high-quality care enforces and builds population trust. At the individual level, trust contributes to improved outcomes and experiences (and vice-versa). At the system-level, trust is needed to improve health system resilience and to facilitate whole-of-society responses when needed (OECD, 2023[1]). Trust can be easily eroded by low-quality care, poor communication, and a lack of continuity of care. Healthcare systems and individual healthcare professionals are required to constantly work to build a foundation for trust by providing high quality, patient-centred care, and maintain it over time.

What is trust?

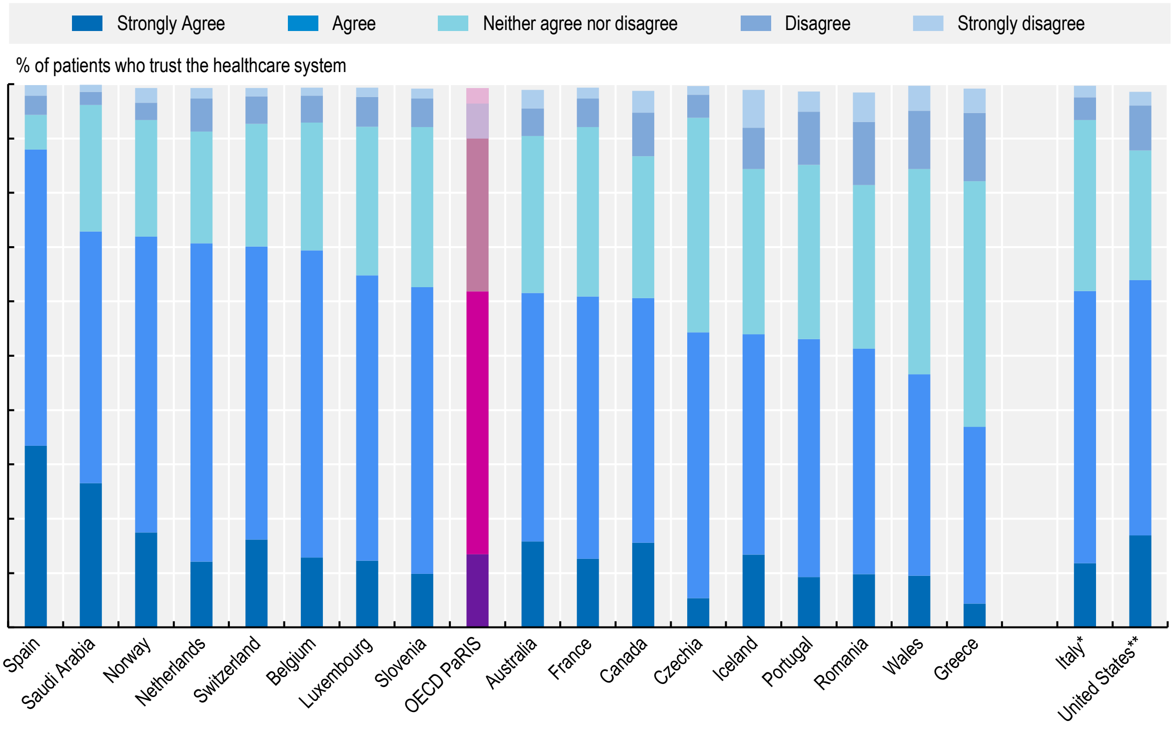
The concept of trust refers to the idea that a person's belief that **another person or institution will act consistently with their expectations of positive behaviour,** even in cases when the outcomes – or the actions to produce them – cannot be verified (McKee and Greenley, 2023[2]; OECD, 2017[3]).

PaRIS asks patients to assess their level of trust in their country's healthcare systems as well as their trust in the last healthcare professional they saw. Those that trust the healthcare system have indicated the responses "agree" or "strongly agree" to the question "*How strongly do you agree or disagree that the healthcare system can be trusted?*" Those who trust their most recent healthcare professional indicated the response "yes, definitely" to the question "*Did you have confidence and trust in the healthcare professional you saw or spoke to?*" when referring to their most recent consultation with a primary care professional (a doctor, nurse or other healthcare professional), unless otherwise indicated in the analysis.

For the purposes of this chapter, trust in healthcare systems and the care professional are discussed together, even though the construct of the items and analysis of the response categories differs. This is a limitation of the analysis, in addition to the reliance on the two items that directly capture trust. Trust is a multidimensional and nuanced construct that can also be more comprehensively assessed through a broader assessment of related domains (Meyer et al., 2024[4]; Aboueid et al., 2023[5]). In Spain, the question on trust in the healthcare system relates to trust in the primary care professionals within people's primary care practice. This variation might influence trust levels in Spain and limit comparability with other countries that refer to trust in the healthcare system more broadly.

See the PaRIS webpage for the questionnaires, https://www.oecd.org/content/dam/oecd/en/about/programmes/patient-reported-indicator-surveys/PaRIS%20patient%20questionnaire.pdf, and more on the methodology in Chapter 7.

Figure 6.1. Trust in healthcare systems: where countries stand



Note: Response to question: "How strongly do you agree or disagree that the healthcare system can be trusted?", "strongly agree, agree" versus "neither agree nor disagree, disagree, strongly disagree". *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older.
Source: OECD PaRIS 2024 Database.

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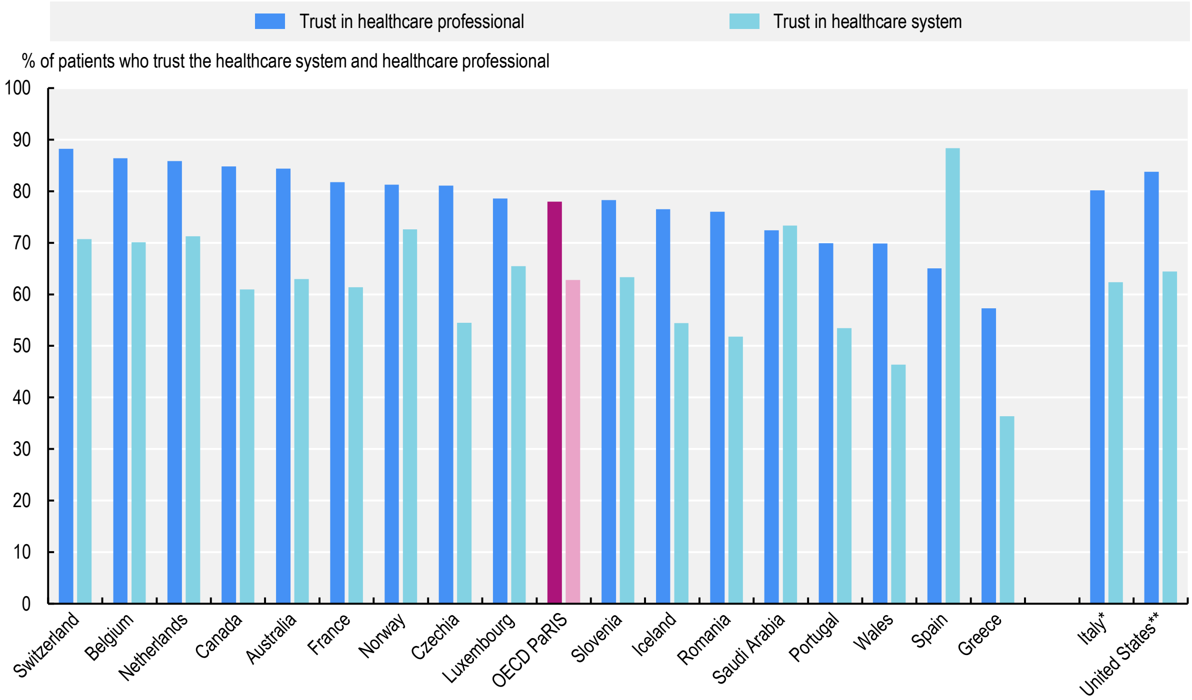
Trust in healthcare takes place at two main levels, the first being **institutional trust** (i.e. the trust in healthcare systems and health supporting institutions) and **social trust**, which relates to trust in individuals such as healthcare personnel (i.e. the trust a person has in their regular doctor). The OECD has a long history in assessing the former, and has developed a trust framework that identifies drivers for trust in public governance, such as reliability, responsiveness, openness, integrity, and fairness (Brezzi et al., 2021[6]).

On average, 62% of all PaRIS respondents living with one or more chronic health condition trust the healthcare system (Figure 6.1). Trust in healthcare systems varies considerably across countries, with patients indicating they trust their healthcare systems surpassing 70% in Spain[1], Saudi Arabia, Norway, the Netherlands, Switzerland and Belgium, and remaining below 50% in Wales and Greece. Country trust levels among the PaRIS population are relatively concurrent with findings assessing population level satisfaction with healthcare systems. Population level indicators captured via the OECD Drivers of Trust in Public Institutions Survey similarly shows satisfaction with health services among people with recent contact with the health system as being above the OECD average in Belgium, Luxembourg, the Netherlands, Norway, Spain and Switzerland, with satisfaction levels below the average in Greece, Portugal and the United Kingdom (OECD, 2024[7]). Distrust among PaRIS respondents (those who disagreed or strongly disagreed that the healthcare system can be trusted) was over 15% in Greece, Romania, Wales, Iceland and under 6% in Saudi Arabia, Spain, Czechia and Norway. On average almost one out of ten (9%) PaRIS respondents with chronic conditions do not trust the healthcare system.

On average, 78% of the patients with chronic health conditions indicated that trusted the last care professional they saw. This is 26% higher more than the percentage who trust the healthcare system (Figure 6.2.). More than 85% of PaRIS patients living with chronic health conditions trusted their most recent care professional in Switzerland, Belgium, the Netherlands and Canada. The lowest levels of trust in care professionals, below 70%, were observed in Spain and Greece. Additional discussion of country outcomes related to trust in health systems can be found in Chapter 2.

Figure 6.2. People are more likely to trust the most recent care professional they saw than the healthcare system more broadly



Note: Trust in healthcare system: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. Trust in healthcare professional: Response to question: “Did you have confidence and trust in the healthcare professional you saw or spoke to?”, “Yes, definitely;” versus “Yes, to some extent; No, not really; No, definitely not”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older.
Source: OECD PaRIS 2024 Database.

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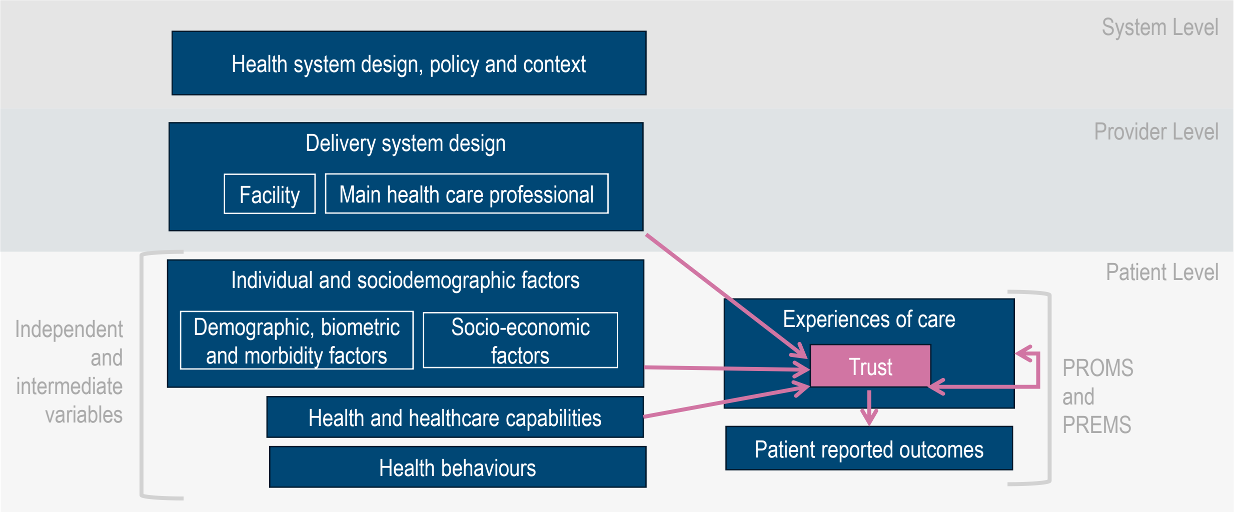
Trust can then be examined in terms of its relationship to other domains addressed in PaRIS, namely 1) health outcomes, 2) experiences of care, 3) delivery system design, 4) individual and socio-demographic factors, and 5) individuals’ health and healthcare capabilities (see Figure 6.3). Each of these relationships is explored in a proceeding section of this chapter.

Figure 6.3. Relationships involving trust explored in PaRIS explored in this chapter



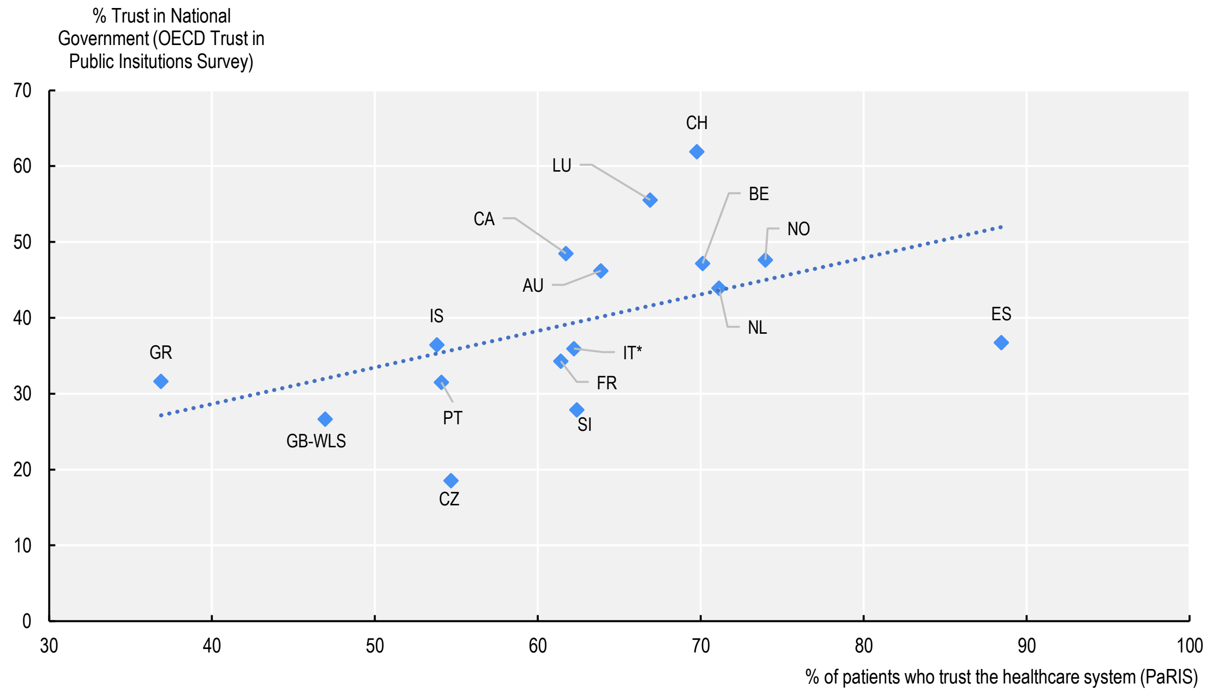
6.1.2. Trust in healthcare systems has a connection to trust in institutions more broadly

Trust in the health sector, like trust in government institutions overall, has experienced several challenges in recent years, notably those caused by the experience of the COVID-19 pandemic and related response. According to data from the COVID-19 Trends and Impact Survey, on average, only 37% of people in OECD countries said they trusted COVID-19 information from government health officials in 2021 (de Bienassis et al., 2023[8]). The 2021 OECD Survey on Drivers of Trust in Public Institutions found that, on average across countries, under half of respondents had confidence in their government's capacity to act to protect people's lives in the event of a future pandemic (OECD, 2022[9]). Moreover, countries in which most people think their government learned from the pandemic are also the countries in which more people are likely to trust that government. Levels of trust can relate to meaningful population health outcomes; for example, countries where more people had trust in institutions and interpersonal trust had on average lower reported COVID-19 and excess death rates during certain phases of the COVID-19 pandemic (OECD, 2023[1]).

Results from the OECD Survey on Drivers of Trust in Public Institutions also showed that the share of respondents who were satisfied with the healthcare system decreased in 16 of 19 countries – dropping by 8 percentage points on average between 2021 and 2023, from 63% to 55% (OECD, 2024[7]). Trends declines in satisfaction with the healthcare system in most countries during post-COVID period have been at least partially attributed to a temporary bump in satisfaction during the COVID-19 pandemic, but are also part of a longer-term trend.

As described in Chapter 2, variation in trust in healthcare systems is attributable to different factors – patient level factors accounting for 90% of variation, practice factors relating to 2% and country level factors accounting for 8%. National attitudes for trust in government and related institutions play a role, and findings from the PaRIS survey on trust in health systems are related to results from OECD Trust Survey (2023), which captures trust in public institutions (see Figure 6.4). Even so, most variation in performance is dominated by individual's experiences and complemented by variation in practice characteristics – indicating opportunities for improvement and policy implementation for improving trust at each level of the system.

Figure 6.4. Trust in healthcare systems among PaRIS respondents compared to population trust in national government



Note: Data from the OECD Trust in Public institutions relates within-country distributions of responses to the question “On a scale of 0 to 10, where 0 is not at all and 10 is completely, how much do you trust the national government?”. 6-10 to “high or moderately high trust“. OECD Trust Survey Data is for the United Kingdom. Data from the OECD PaRIS: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions.
Source: OECD Trust Survey 2023 and OECD PaRIS 2024 Database.

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Transparency and information integrity in the health sector

High levels of trust are particularly important in cases where there may be significant information asymmetry, i.e. there are differences in parties’ access to or understanding of relevant information. This is the case in healthcare, where professionals traditionally have more information about the presence and severity of health conditions and the options for treatment than patients; patients typically rely on healthcare professionals for their expert options and guidance. Even so, recent trends in the health sector have reduced this asymmetry of knowledge by increasing health literacy, improving access to individuals’ health information through improved information infrastructure, improved transparency about data collection and use, and policies to support shared decision making and patient involvement in care plans. In cases where patients rely on the expert opinions of healthcare professionals, they should feel confident to trust their care professional, calling on trust built from an ongoing, transparent, and respectful relationship.

The risks of disinformation in healthcare are rapidly evolving and can have a corrosive effect on trust. Information environments in which citizens do not trust the information they receive or in which they are inundated with false and misleading content on online information platforms can lead to the spread of misinformation or public health conspiracy theories, for example those relating to vaccination or use of unapproved treatments (OECD, 2024[10]). Mis- and disinformation can contribute to polarised societies and undermine trust in public institutions at large, including healthcare systems.[2]

Lack of clear messaging, information and timely data can lead to diminished levels of trust in the population. This includes poor communication resulting from too much information – both proven and unsubstantiated – during times of crisis.[3] Specific to the health sector, the recent COVID-19 pandemic triggered widespread mis- and disinformation that undermined both understanding and acceptance of science and public health policy (de Figueiredo et al., 2020[11]) Despite widespread recognition among experts that COVID-19 vaccination can reduce the occurrence of serious COVID-19 related complications, significant portions of the population were unwilling to be vaccinated – in part due to misinformation (OECD, 2021[12]). Disinformation continues to impact prevention such as vaccination and chronic disease management.

As a counter to these threats, clear and transparent communication is a critical component of care relationships – and is seen as core function of most ministries of health (OECD, 2021[13]). Communication is essential for coherent messaging both internally and externally and empowers individuals to understand and act on health related information.

Higher trust and better health outcomes are interconnected

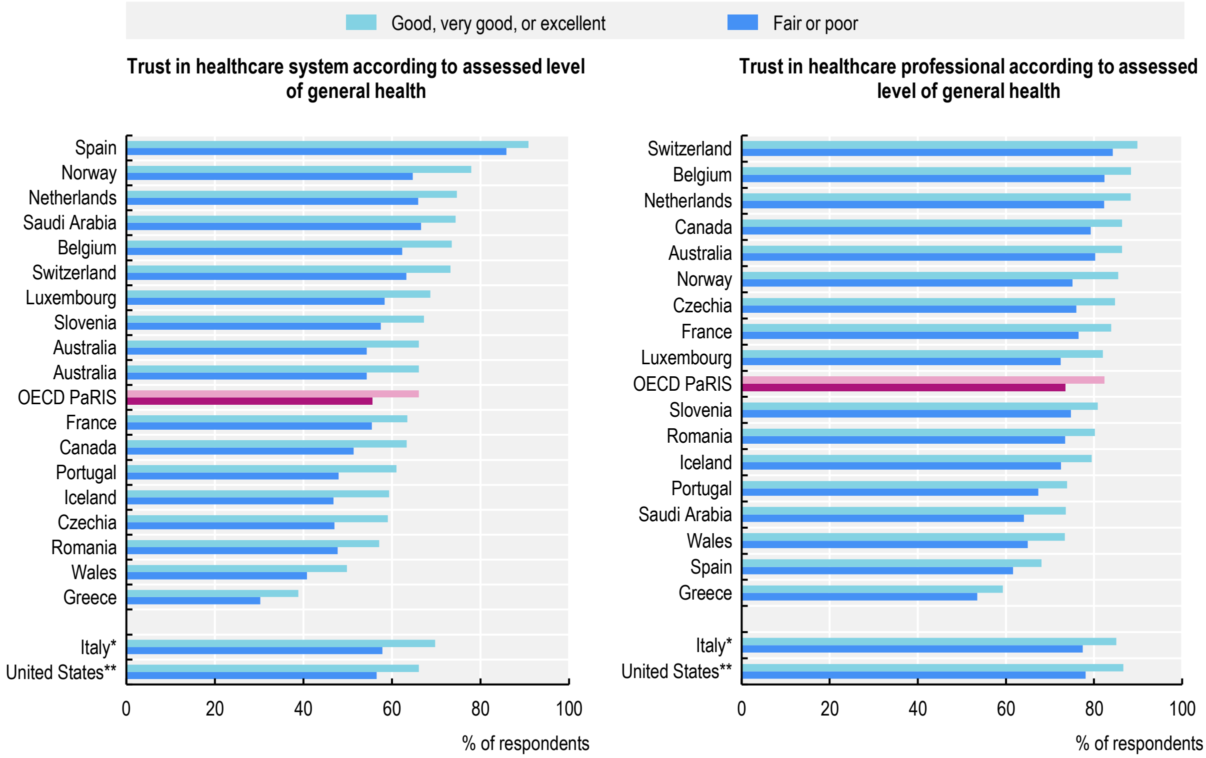
An individual's trust in their healthcare professional can impact their health. Better health outcomes can likewise be associated with higher trust in the healthcare system because people who are healthier may have received better care, or at least feel that they receive better care, and therefore have higher trust. Moreover, high performing healthcare systems with strong primary care are those that are successful in 1) improving health outcomes for people living with chronic health conditions and 2) have cultivated high levels of trust among this same group.

There have been numerous research studies establishing the relationship between trust and health outcomes, and in particular subjective health outcomes (Birkhäuer et al., 2017[14]). Trust in government and healthcare system competency can lead to improved compliance with advice from healthcare professionals. Survey research conducted in 2020 across 23 countries, for example, found that higher trust in government competency to handle the pandemic was significantly associated with increased adoption of health behaviours (handwashing, avoiding crowded spaces, self-quarantine) (Han et al., 2023[15]).

Results from PaRIS show that people who rate their general health as good, very good, or excellent are more likely to trust the healthcare system (66% on average) as compared to those who rate their health as poor or fair (56%) – a 10 percentage point difference (see Figure 6.5). Results are similar to those who trust their most recent care professional. Eighty-one percent of people in better health trust their care professional, compared to only 73% of those who assess themselves as being in poor or fair health. Trust does not seem to be significantly related to the number of chronic conditions a person is living with – and results are comparable across people with no, one, or two chronic health conditions (Figure 6.6). People with three or more chronic conditions tend to have slightly lower levels of trust, but differences are not statistically significant (See Chapter 3 for additional discussion of multimorbidity and other PROMs and PREMs).

Figure 6.5. People who rate their health better are consistently more inclined to also trust in the healthcare system

Average trust in the healthcare system and most recent healthcare professional according to assessed level of general health



Note: Trust in healthcare system: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. Trust in healthcare professional: Response to question: “Did you have confidence and trust in the healthcare professional you saw or spoke to?”, “Yes, definitely;” versus “Yes, to some extent; No, not really; No, definitely not”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. All differences for Trust in the healthcare system are statistically significant (p<0.05), except for France, Greece, Romania, Saudi Arabia, the United States and Wales. All differences for Trust in the healthcare professional are statistically significant (p<0.05), except for Greece, Portugal, Spain and the United States.
Source: OECD PaRIS 2024 Database.

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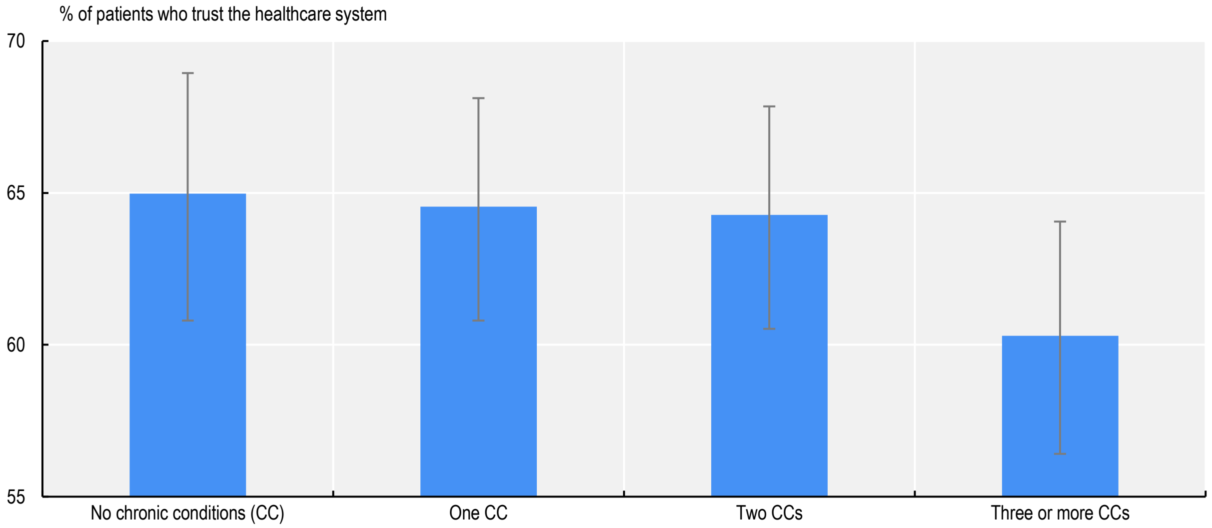
Figure 6.6. Trust in healthcare systems is not significantly correlated with the number of chronic conditions

Percentage of people who trust in healthcare system based on a person's number of chronic health conditions (CCs)



Note: Trust in healthcare system: Response to question: "How strongly do you agree or disagree that the healthcare system can be trusted?", "strongly agree, agree" versus "neither agree nor disagree, disagree, strongly disagree". Data based on PaRIS19 Participating Countries. Error bars show the range of the comparative interval.
Source: OECD PaRIS 2024 Database.

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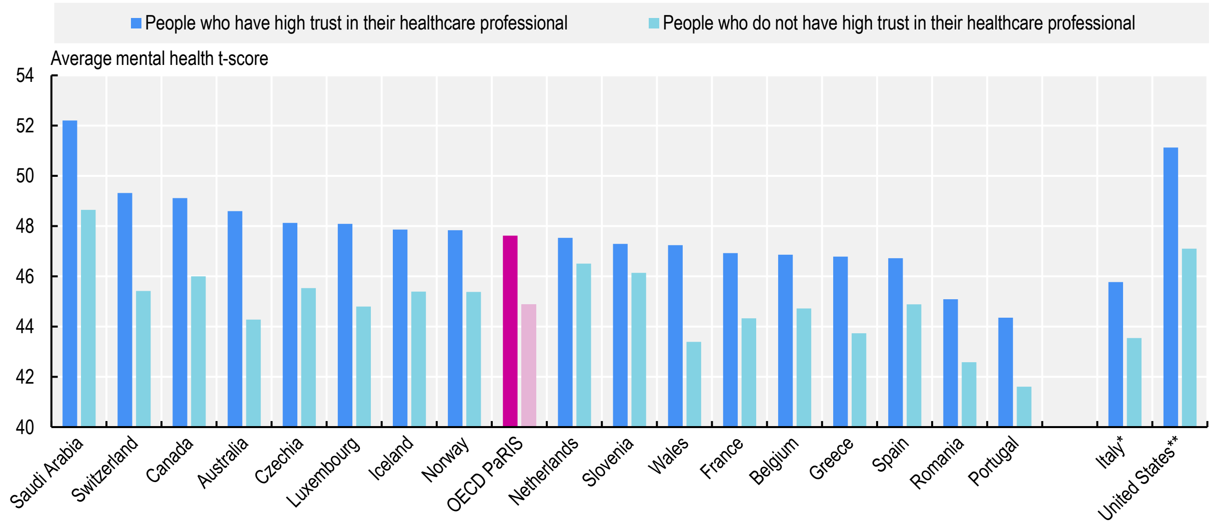
People with the highest levels of trust in their care professional also have higher average PROMIS mental health scores[4] than those who do not (47.6, compared to 44.8) (Figure 6.1). People with good mental health may have more trust in the healthcare system because they are more likely to feel that health professionals and institutions are responsive to their needs, which reinforces positive experiences and further strengthening care related relationships. Conversely, previous analysis from the OECD shows that people living with mental health conditions are more likely to have received conflicting information from healthcare professionals (OECD, 2019[16]) and analysis from the PaRIS survey finds that that among people living multiple chronic health conditions, people have worse experiences of care co-ordination if one of their conditions is a mental health condition, as compared to others without any mental health condition (see Chapter 3).

Figure 6.7. Trust the healthcare professional is associated with 6% higher scores on Mental Health PROMs



Note: PROMIS® Scale v1.2 – Global Health component for mental health is a T-score metric with a range of 21-68, and a good-fair cutoff of 40, higher values represent better mental health. Trust in healthcare professional: Response to question: “Did you have confidence and trust in the healthcare professional you saw or spoke to?”, “Yes, definitely; Yes, to some extent” versus “No, not really; No, definitely not”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. All differences are statistically significant ($p<0.05$).

Source: OECD PaRIS 2024 Database.

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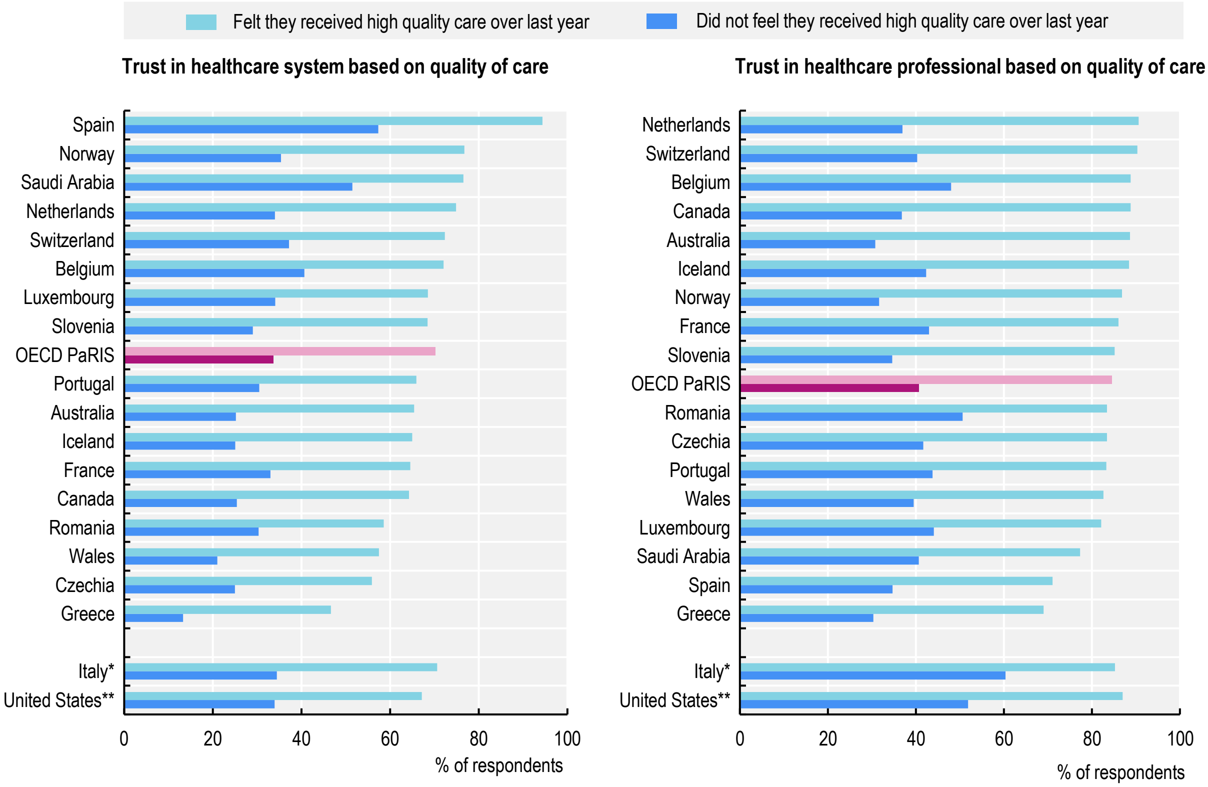
6.2. Trust in healthcare systems is strongly related to individual experience

People’s experiences with public services influences how they perceive their governments, and public satisfaction with administrative and social services is an important driver of trust. The 2021 OECD Survey on Drivers of Trust in Public Institutions demonstrated that a single standard deviation increase in users’ satisfaction with services was associated with a 4 percentage point increase in trust in national government, and a 6 percentage point increase in the levels of trust in the civil service (Brezzi et al., 2021[6]).

Trust and experience of healthcare are strongly intertwined, as trust can impact how perceives their relationship with their care professional and is based on the perceived quality of care received in the past. Having a foundation of trust may also improve the experience of care and lead to more generous assessments of current care, based on previous satisfaction with services. Findings from across countries show that the relationship is profound. PaRIS respondents with chronic health conditions tend to trust the health system when they rate their experience of quality of primary care overall more highly (see Figure 6.8). On average, across countries, people who rated experienced quality of primary care over the last year as excellent or (very) good were 35 percentage points more likely to trust the healthcare system than those who indicated lower levels of quality of care over the last year – with a 43 percentage point difference in regard to the healthcare professional. This trend persists to the macro-level, where countries with higher averages on the person-centred care (measured with the P3CEQ scale, see Chapter 4, Box 4.2) are also more likely to have trust in healthcare systems among PaRIS respondents (see Figure 6.9).

Figure 6.8. PaRIS respondents with chronic health conditions tend to trust the health system when they have received high quality of primary care

Average percentage of people who trust in the healthcare system and their healthcare professional according to how they rated the medical care that they have received in the past 12 months from their primary care practice



Note: Trust in healthcare system: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. Trust in healthcare professional: Response to question: “Did you have confidence and trust in the healthcare professional you saw or spoke to?”, “Yes, definitely;” versus “Yes, to some extent; No, not really; No, definitely not”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. All differences for Trust in the healthcare system are statistically significant ($p<0.05$). All differences for Trust in the healthcare professional are statistically significant ($p<0.05$).

Source: OECD PaRIS 2024 Database.

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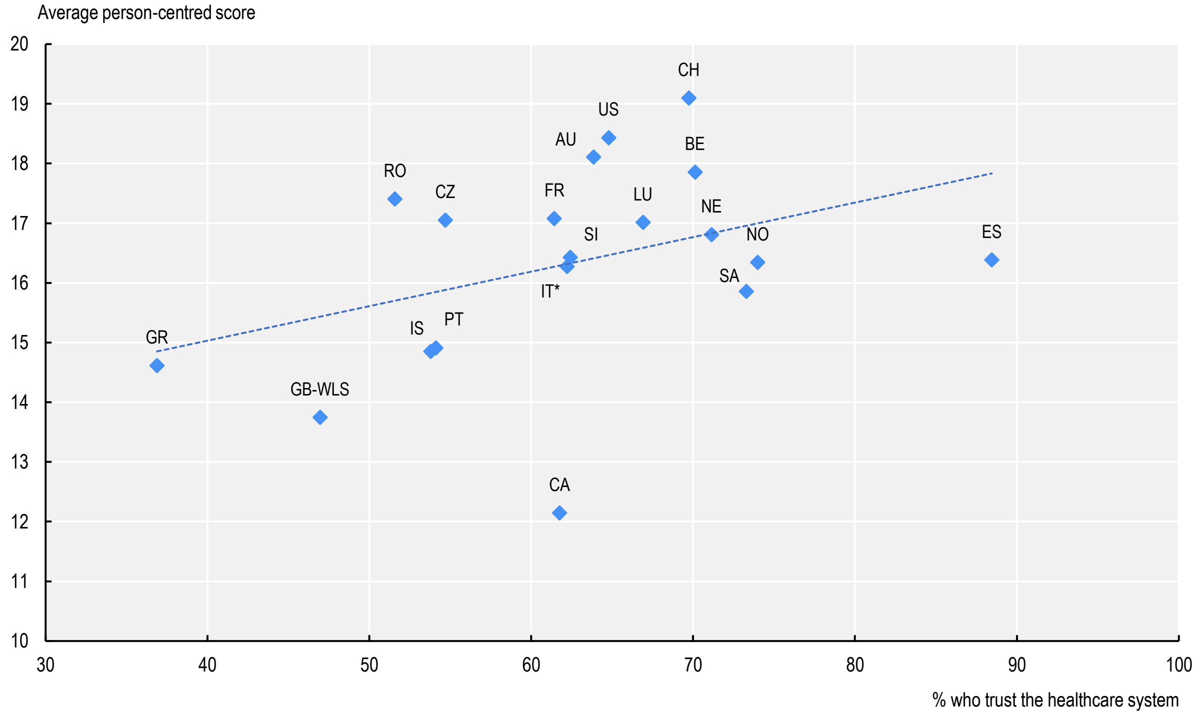
Figure 6.9. Countries who perform better on patient-centredness overall often also have higher levels of trust in healthcare systems at the national level among PaRIS respondents



Note: Person-centred care: P3CEQ Questionnaire. Response to eight questions measuring if care is person-centred. Scale ranges from 0 to 24, higher scores represent better person-centred care. Trust in healthcare system: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older.

Source: OECD PaRIS 2024 Database.

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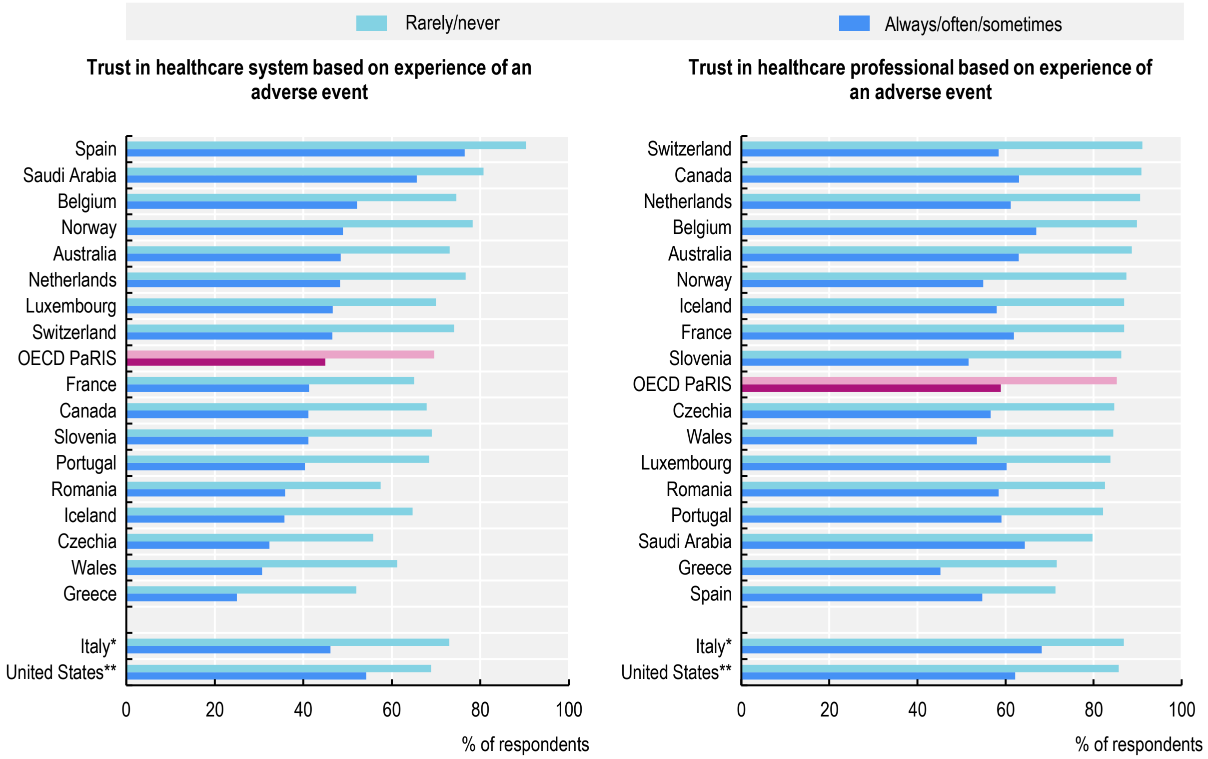
The experience of adverse events or harm over the course of care can reduce trust in the healthcare system. On average, across countries, 30% of PaRIS respondents reported experiencing a harm or patient safety event over the course of their care. PaRIS shows that that people who have experienced an event or circumstance that could potentially cause them harm in primary care – such as, not getting an appointment when needed, receiving a wrong or delayed diagnosis or treatment, or experiencing problems with communications between healthcare professionals – are 1.6 times less likely to trust the healthcare system than those who have not experienced such an adverse event (45% compared to 70%) (Figure 6.10). Likewise, trust in the person’s last care professional is 1.4 times lower among people who have experienced an adverse event compared to those who have not (59% compared to 85%). These findings demonstrate that experience of an adverse event has a strong impact on deteriorating trust for both the professional and the healthcare system more broadly.

> *"I'm afraid I don't have much trust in the public system. It has failed me on several occasions. The most recent was a misdiagnosis of sepsis. I was sent home after being told I had a virus. I couldn't walk and thought I was dying. Luckily, my husband wasn't satisfied and took me to our GP, who had admitting rights at a private hospital. Thank goodness I have private health insurance. I was in that hospital for a month on IV antibiotics. I was very ill and didn't remember much of the first week. I was diagnosed with sepsis and a massive spinal epidural abscess. My GP and the two doctors looking after me all told me on different occasions that had I gotten to the hospital 24 hours later; I would not have survived. I often wonder if it had been my husband presenting with the same symptoms, whether he would have been listened to more carefully and been admitted. I was fobbed off with the words, "There is nothing major wrong with you. Take some Panadol, and you will be fine". I am so glad my husband had the presence of mind to take me to the GP."*
>
> *Ilyn, living with chronic lung conditions, rheumatoid arthritis, osteoarthritis and post-sepsis syndrome*

Figure 6.10. People who have experienced an adverse event over the course of their care are consistently less likely to trust both their healthcare professional and the healthcare system

Average percentage of people who trust in the healthcare system and their healthcare professional according to the experience of having experienced an adverse event



Note: Examples of adverse events include not getting an appointment when needed, receiving a wrong or delayed diagnosis or treatment, or experiencing problems with communications between healthcare professionals. Trust in healthcare system: Response to question: "How strongly do you agree or disagree that the healthcare system can be trusted?", "strongly agree, agree" versus "neither agree nor disagree, disagree, strongly disagree". Trust in healthcare professional: Response to question: "Did you have confidence and trust in the healthcare professional you saw or spoke to?", "Yes, definitely;" versus "Yes, to some extent; No, not really; No, definitely not". *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. All differences for Trust in the healthcare system are statistically significant ($p<0.05$). All differences for Trust in the healthcare professional are statistically significant ($p<0.05$).
Source: OECD PaRIS 2024 Database.

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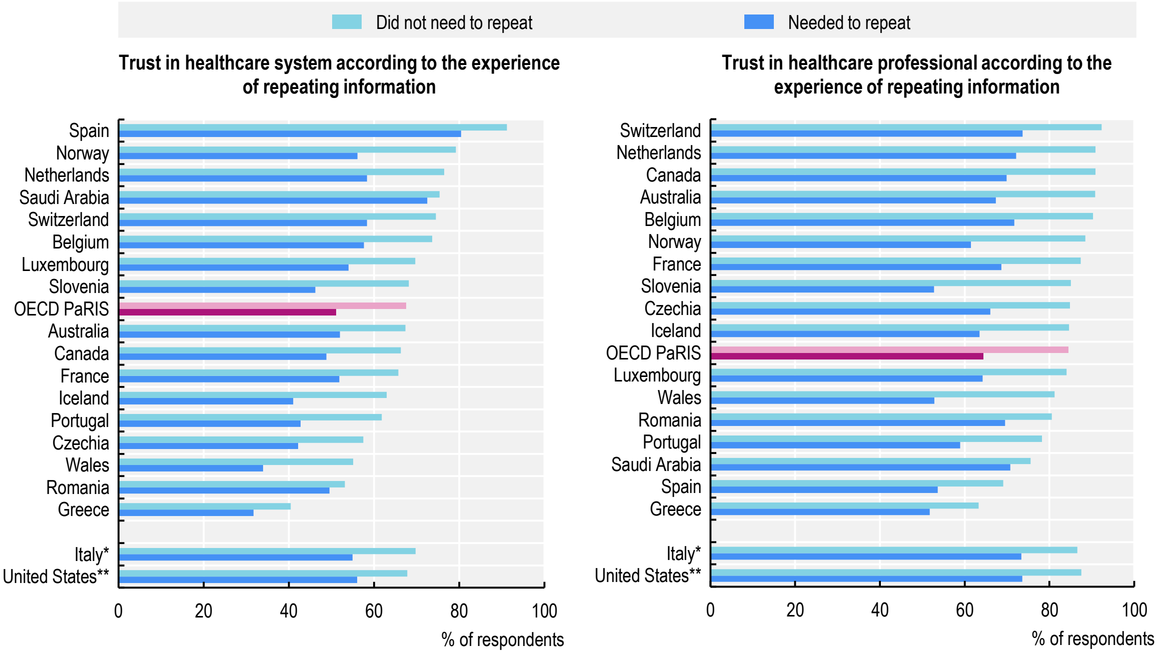
High quality care co-ordination is an essential component of high-quality care, and the lack of co-ordination undermines trust in healthcare and healthcare professionals. Needing to repeat healthcare information that should be in a person's care record during a visit, for example, indicates poor care integration, inadequate data infrastructure, poor data capture processes, and poor capacity to facilitate care transitions. This has a fundamental impact on levels of trust. Overall, patients who needed to repeat health information that should have been in their care record were 32% less likely to trust the health system overall and 31% less likely to trust their care professional in average reported higher trust in the healthcare system compared to those who did not need to repeat information (51% compared to 68% for trust in the healthcare system, and 64% compared to 84% for trust in the healthcare professional) (see Figure 6.11). Despite the root causes of having to repeat information likely being caused by system related factors (such as lack of or poor-quality data infrastructure or poor care co-ordination), the relationship between this experience and trust in the care professional is still substantial. In Norway, Wales and Slovenia, 40% fewer people trusted in the healthcare professional if people experienced the need to repeat information that should have been in the care record.

> *"The key factors that influence my trust are: the difficulty of access to specialized doctors, the difficulty of buying my medication, [and] the insecurity I face every time I talk with the doctor – if I fully understand everything he says to me."*
>
> *Zoe, 67 years old, divorced woman with severe osteoporosis, asthma and Paget disease*

Figure 6.11. Survey respondents who did not need to repeat health information at their last visit are more likely to report trusting the healthcare system and their care professional

Average percentage of respondents who trust in the healthcare system and their healthcare professional according to the experience of needing to repeat health information



Note: Trust in healthcare system: Response to question: "How strongly do you agree or disagree that the healthcare system can be trusted?", "strongly agree, agree" versus "neither agree nor disagree, disagree, strongly disagree". Trust in healthcare professional: Response to question: "Did you have confidence and trust in the healthcare professional you saw or spoke to?", "Yes, definitely;" versus "Yes, to some extent; No, not really; No, definitely not". *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. All differences for Trust in the healthcare system are statistically significant ($p<0.05$), except for Greece, Romania, Saudi Arabia and the United States. All differences for Trust in the healthcare professional are statistically significant ($p<0.05$), except for Saudi Arabia.
Source: OECD PaRIS 2024 Database.

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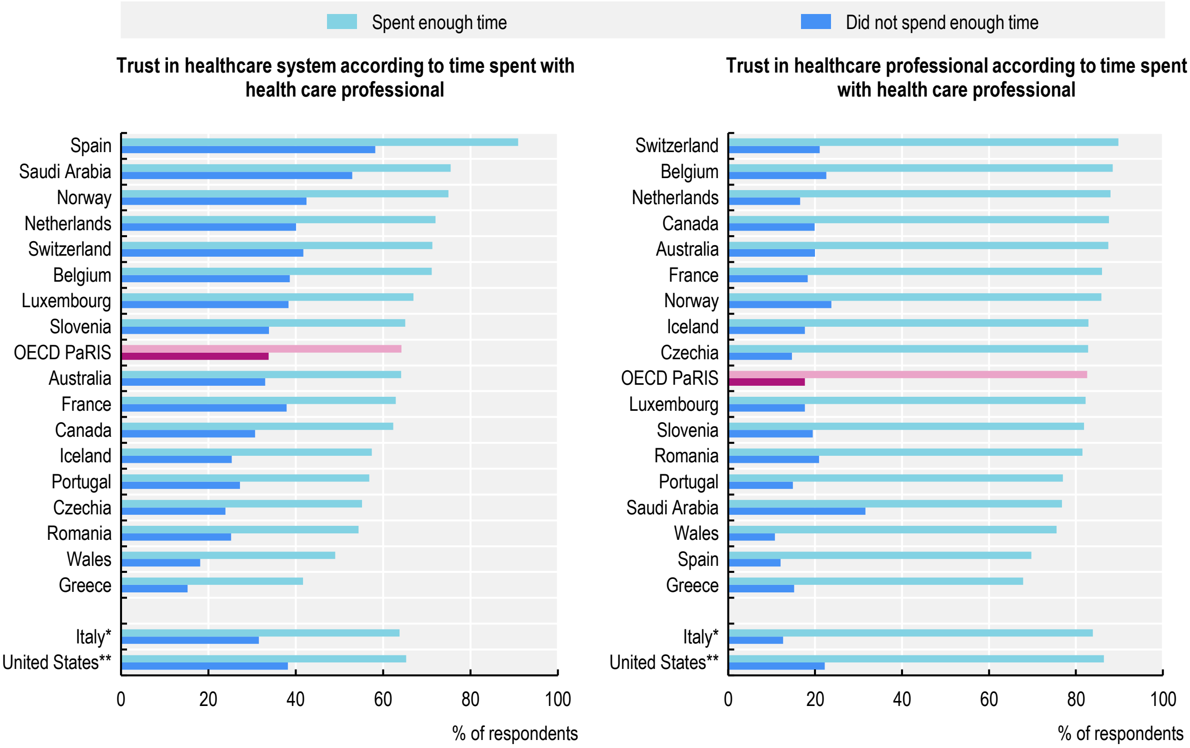
The gap in trust levels between people who felt that their care professional spent enough time with them and those that did not is substantial – differing by 30 percentage points across PaRIS participating countries in regard to trust in the healthcare system and by almost 65 percentage points in regard to trust in the healthcare professional (see Figure 6.12). In the Netherlands and Italy, the gap in trust in the most recent care professional among those who did – and did not – feel that person spent enough time with them, exceeded 70 percentage points. However, across PaRIS participating countries relatively few – approximately 7% – respondents felt negatively regarding the amount of time spent with them by care professionals.

Figure 6.12. Trust in healthcare systems drops by 30 percentage points when people don't feel their care professional spends enough time with them

Average percentage of respondents who trust in the healthcare system and their healthcare professional according to the experience of having their healthcare professional spend enough time them



Note: Trust in healthcare system: Response to question: "How strongly do you agree or disagree that the healthcare system can be trusted?", "strongly agree, agree" versus "neither agree nor disagree, disagree, strongly disagree". Trust in healthcare professional: Response to question: "Did you have confidence and trust in the healthcare professional you saw or spoke to?", "Yes, definitely;" versus "Yes, to some extent; No, not really; No, definitely not". *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. All differences for Trust in the healthcare system are statistically significant (p<0.05). All differences for Trust in the healthcare professional are statistically significant (p<0.05).
Source: OECD PaRIS 2024 Database.

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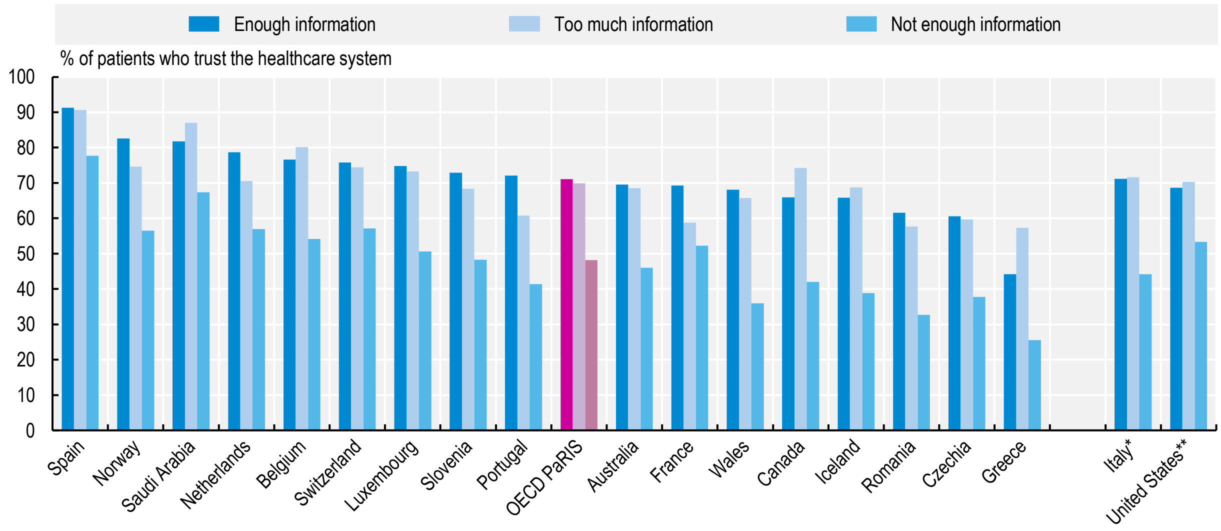
Clear, sufficient communication is key to trust – and the receipt of sufficient health information is another metric that can be used to assess the quality and scope of communication. In response to the survey question, "To what extent do you receive useful information at the time you need it to help you manage your health and well-being?" only 1% of all PaRIS patients reported that they received ***too much*** information. An additional 40% of all respondents reported not receiving enough information. Receiving too little information for self-management corresponded to an average of 23% lower trust among PaRIS respondents (Figure 6.13), while those who received too much information generally still had comparable outcomes on trust to those who had received enough information (though the confidence intervals for the former group were large due to small sample sizes).

> *"A negative experience occurred when I visited a specialist who rushed through the appointment without addressing my questions about my treatment options. I left feeling dismissed and frustrated, which eroded my trust in that provider. This experience highlighted the importance of clear communication and patient engagement in building trust. Overall, positive interactions reinforce my confidence in the healthcare system, while negative ones remind me of the vulnerabilities patients face. He never looked at me, his eyes were on the computer …. Typing!"*
>
> *Betsy, 68 years old, female, living with multiple chronic conditions, including obesity*

Figure 6.13. Too little information for self-management erodes trust, while there is little effect for "too much"

Average percentage of respondents who trust in the healthcare system according to how much information they receive for self-management



Note: Trust in healthcare system: Response to question: "How strongly do you agree or disagree that the healthcare system can be trusted?", "strongly agree, agree" versus "neither agree nor disagree, disagree, strongly disagree". *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. Differences between enough information and not enough information are statistically significant (p<0.05) for all countries.
Source: OECD PaRIS 2024 Database.

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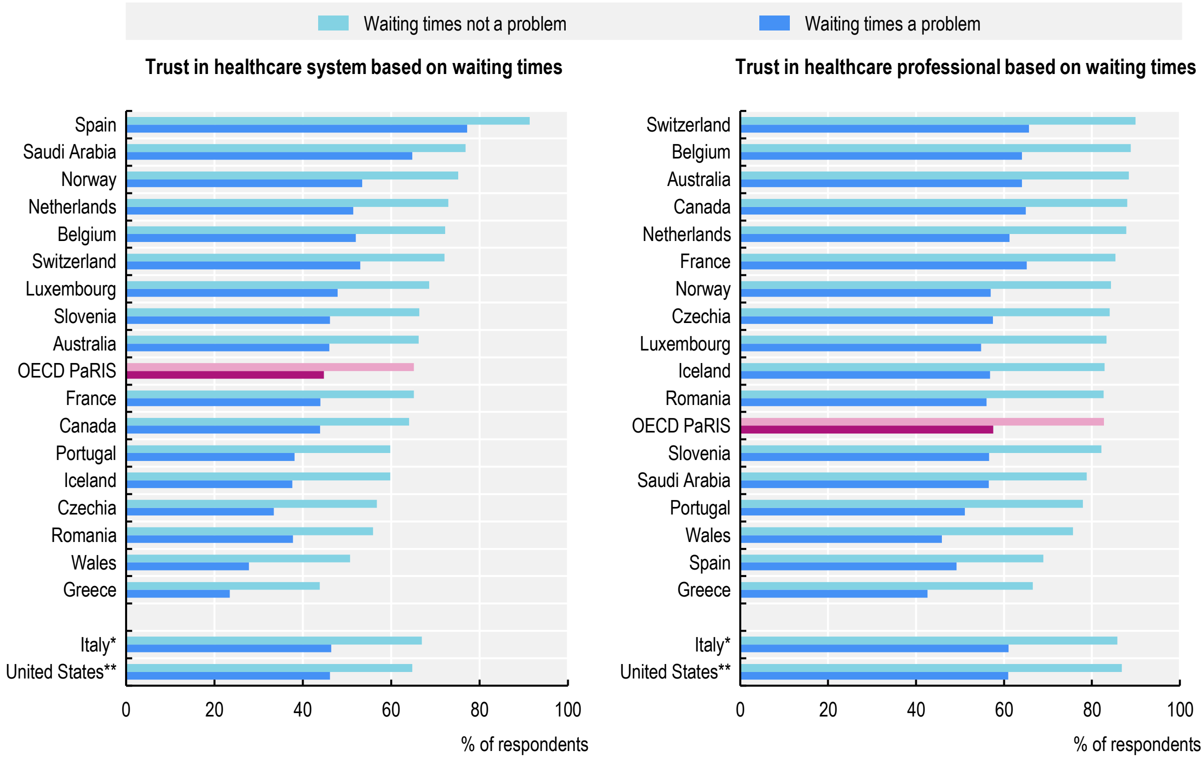
Finally, the time a person waits for an appointment can impact care – leading to potential deterioration of a person's condition in some cases or undermining confidence in the system's ability to provide timely care. Results show that experiencing a problematic wait for the primary care appointment is associated with a 20 percentage point decrease of people trusting in the healthcare system and with a 25 percentage point decrease in trust in the care professional (Figure 6.14).[5] This trend is consistent across all PaRIS participating countries, ranging from a 12 percentage point difference in trust in healthcare systems between these two groups in Saudi Arabia, to a 23 percentage point difference in Czechia.

Figure 6.14. People who have experienced problematic waiting times to access care are less likely to trust the healthcare system and their healthcare professional

Average percentage of respondents who trust in the healthcare system and their professional according to the experience of having experienced problematic waiting times



Note: Trust in healthcare system: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. Trust in healthcare professional: Response to question: “Did you have confidence and trust in the healthcare professional you saw or spoke to?”, “Yes, definitely;” versus “Yes, to some extent; No, not really; No, definitely not”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. All differences for Trust in the healthcare system are statistically significant (p<0.05). All differences for Trust in the healthcare professional are statistically significant (p<0.05).
Source: OECD PaRIS 2024 Database.

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6.3. Healthcare system characteristics play a role in determining levels of trust

An ongoing, trusting relationship between healthcare professionals and patients has shown demonstrable value to primary care. Relationships in primary care are, in part, contingent on the individual provider or providers, but also the overall structure of the primary care delivery system, which may be more or less conductive to building trusting relationships. PaRIS provides insight as to how the design of the healthcare system relates to trust through data generated by both the primary care practice and patient questionnaires.

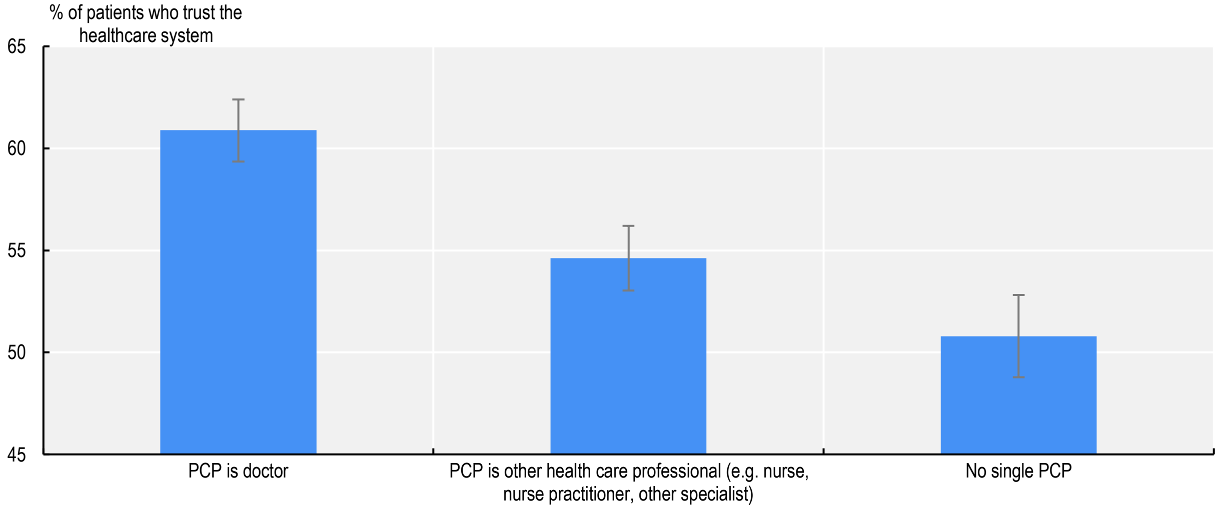
6.3.1. Who provides primary care matters to patients

The type of care professional may influence trust through various mechanisms. Some people may feel most comfortable with being cared for by a medical doctor and feel confident in their qualifications. Others may feel more comfortable when seeing a nurse or nurse practitioner, trusting their concerns are well understood and that their care professional may have more time for them. A number of OECD countries have implemented reforms in recent years to expand the roles of nurses in primary care (Maier, Aiken and Busse, 2017[17]; Brownwood and Lafortune, 2024[18]).

Finding from PaRIS show that people who have a primary point of contact who is a doctor are 6 percentage points more likely to trust the system than those who have another type of point of contact (such as nurse, nurse practitioner, or other specialist) and 10 percentage points more likely to trust the healthcare system than those who have no primary point of contact at all (Figure 6.15). Overall, 78% of the patients report having a doctor as the single professional they usually go to for most of their health problems, while only 4% see another type of care professional, and 18% don't have a single professional they go to for most of their care.

Figure 6.15. People are more likely to trust the healthcare system if they have a doctor they see for most of their health problems, and less likely to trust it if they have no main point of contact

Average percentage of people with trust in the healthcare system based on the type of their primary point of contact in the healthcare system



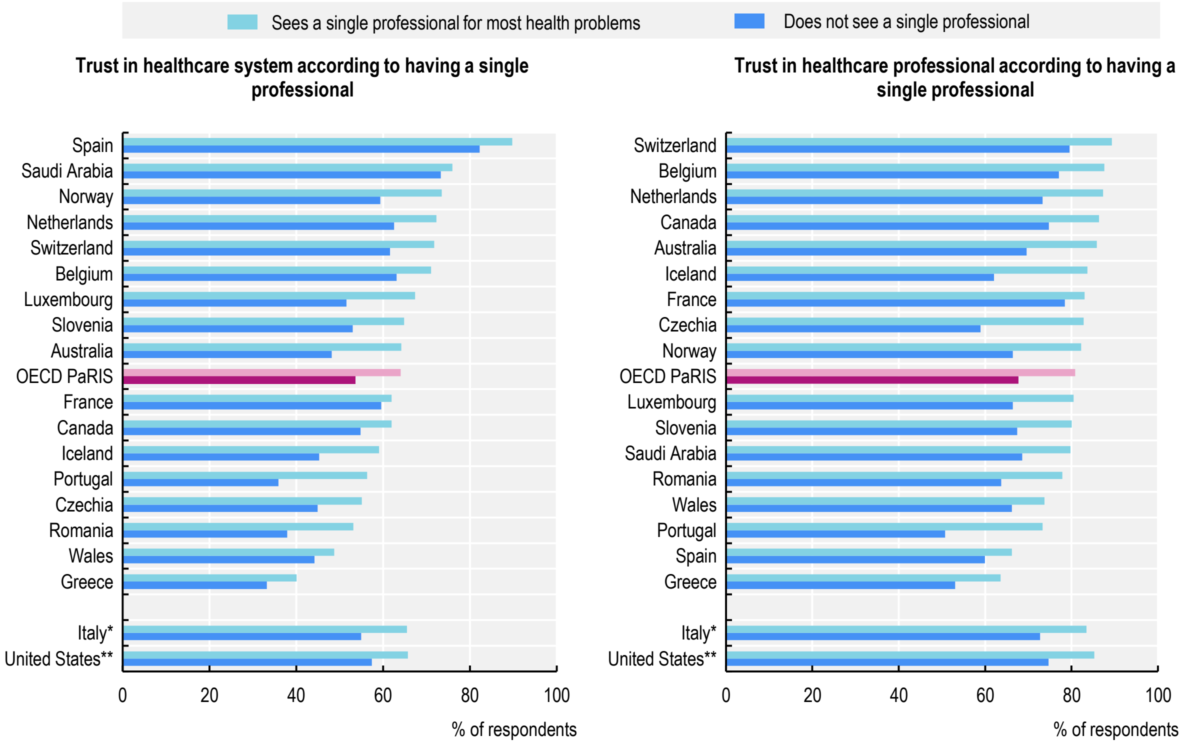
Note: Trust in healthcare system: Response to question: "How strongly do you agree or disagree that the healthcare system can be trusted?", "strongly agree, agree" versus "neither agree nor disagree, disagree, strongly disagree". Primary care professional (PCP). Error bars show the range of the comparative interval. Data based on PaRIS19 Participating Countries.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/lvhk97

Related to the type of care professional patients see, is the consistency of that care professional – that is, if they are able to see the same person for most of their health problems as opposed to seeing multiple care professionals. Patients who have a main point of contact in the healthcare system (i.e. someone that they go to for most of their health problems) trusted the healthcare system 64% of the time, compared to only 54% of people who did not have a central point of care. The difference is similar for trust in the healthcare professional, where 68% of people who did not have a single professional they saw for most problems also trusted their professional, while 81% of those who did have a central point of care had trust in their healthcare professional (see Figure 6.16). In Czechia, Portugal and Iceland, if a person has a single care professional, they visit with most of their care problems, they are more likely to trust the last person they saw by over 20 percentage points more compared to those who did not.

Figure 6.16. Having a central care professional that can be seen for most health problems is a driver of trust

Average percentage of respondents who trust in the healthcare system according to the experience of having a single healthcare professional they see for most health problems



Note: Trust in healthcare system: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. Trust in healthcare professional: Response to question: “Did you have confidence and trust in the healthcare professional you saw or spoke to?”, “Yes, definitely;” versus “Yes, to some extent; No, not really; No, definitely not”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. All differences for Trust in the healthcare system are statistically significant ($p<0.05$), except for Belgium, Canada, Czechia, France, Greece, Saudi Arabia, the United States and Wales. All differences for Trust in the healthcare professional are statistically significant ($p<0.05$), except for France, Spain and the United States.
Source: OECD PaRIS 2024 Database.

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Primary care can be delivered in a multi-specialty group practice, a group practice where patients see a single named professional or where they see multiple professionals, or in solo practices where only one primary care professional is present. While having a familiar, individual professional may be one way to ensure that people have a central care professional – a team approach of professionals is also effective, and the distinction between trust levels among patients who visited practices that either share (group practices with a shared patient pool) or do not share (solo practice, group practices with provider specific patient lists) patients was negligible.

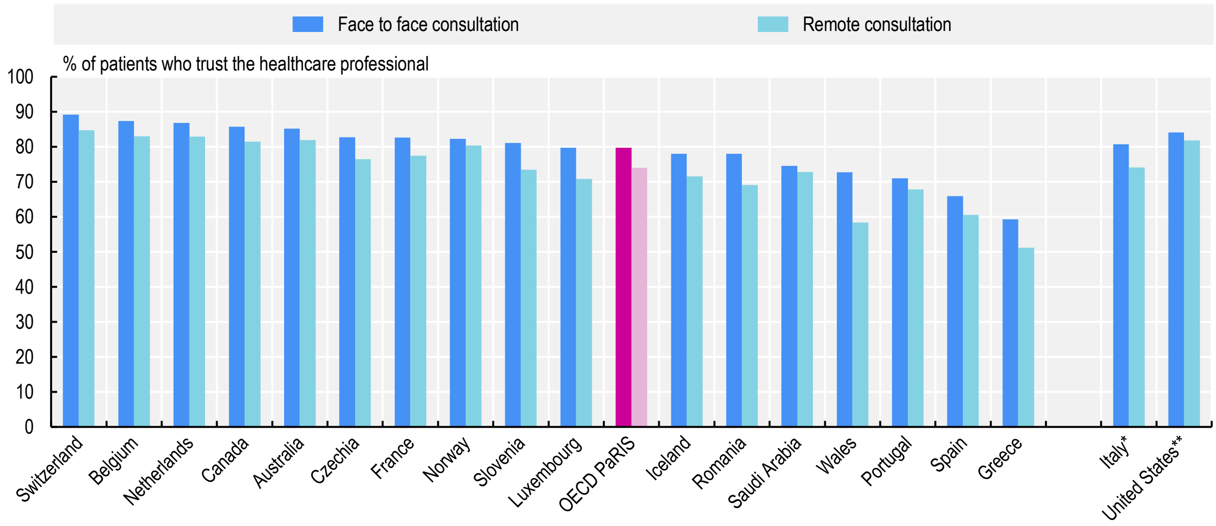
6.3.2. Digital health can be just as trustworthy as traditional care modalities

Faced with significant disruptions to in-person care caused by the COVID-19 pandemic, governments moved quickly to promote and operationalise the use of remote care – a trend that has persisted in the years following (OECD, 2023[19]). Seven percent of PaRIS patients living with chronic conditions reported that their last consultation took place virtually (over the telephone or video consultation), as opposed to face-to-face visits with care professionals (either in the office or at home).

Virtual care services are not necessarily less trustworthy than other, more "traditional" forms of care. Despite modest trends across countries favouring higher levels of trust among people who use face-to-face services, findings were mostly non-significant (Figure 6.17). Even so, some countries show clearer trends favouring in-person care. In Luxembourg, Romania and Greece there is an over 8 percentage point difference in trust in the healthcare professional based on the format of the care provided.

Figure 6.17. Remote care services are not significantly less trustworthy than face-to-face care in most countries

Average percentage of respondents who trust their healthcare professional according to if the care was in person or provided virtually



Note: Trust in healthcare professional: Response to question: "Did you have confidence and trust in the healthcare professional you saw or spoke to?", "Yes, definitely" versus "Yes, to some extent, No, not really; No, definitely not". Trust in healthcare professional: Response to question: "Did you have confidence and trust in the healthcare professional you saw or spoke to?", "Yes, definitely;" versus "Yes, to some extent; No, not really; No, definitely not".*Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. Differences are not statistically significant ($p<0.05$) in all countries, except for Czechia, Luxembourg, Romania, Slovenia and Spain.
Source: OECD PaRIS 2024 Database.

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Most PaRIS patients (71%) report that their healthcare professional offers at least one online service, such as booking appointments, ordering repeat prescriptions, accessing their medical records, or video consultations. The availability of these services does not appear to be a major driver of trust for health systems. Trust levels in both the healthcare system and healthcare professionals showed no notable differences based on whether primary care professionals offered patient-facing digital services, such as appointment booking or reminders for regular preventive or follow-up care (e.g. flu vaccine or Glycated Haemoglobin for diabetic patients).

> *"I feel lucky that I have found a doctor for my osteoporosis treatment that is taking care of me like a father. He gives me advice about how to handle my situation at home, he shares with me anything new that is coming up regarding my disease and he introduced me to other patients with the same diseases as me, to exchange experiences."*
>
> *Lucy, 55 years old, divorced woman with osteoporosis, Hashimoto/thyroid, hypertension*

Timely and consistent care is pivotal

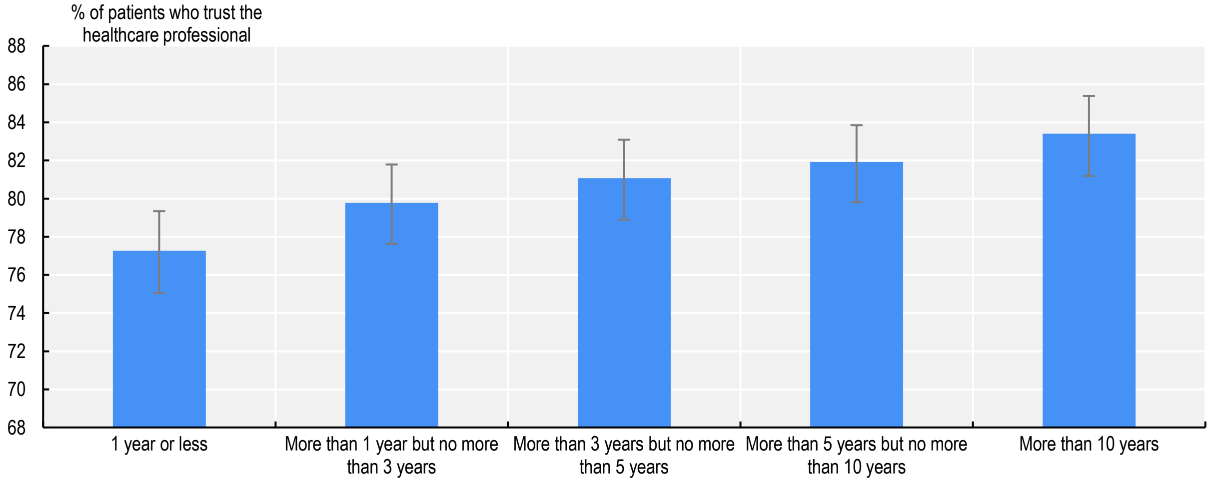
A longstanding relationship with a primary care professional increases trust and assessed quality of care. Building trust takes time, and when people do not trust their primary care professional or are unhappy with their care, they might switch to a different professional. A longstanding relationship helps create trust and open communication between patients and their primary care professionals and helps primary care professionals understand their patients' medical history, lifestyle, and preferences, so they can provide better care.

There is a clear link between the length of the patient-professional relationship and levels of trust in care professionals. Trust is highest among patients who have been seeing their healthcare professional for 10 years or more and lowest among those with a relationship of less than a year[6] (see Figure 6.18). This relationship is further explored in Chapter 3, which highlights that people living with two or more chronic conditions are more likely to rate the quality of their care positively if they have been seeing the same healthcare professional for an extended period, particularly more than five years.

The relation between trust and length of relationship works in two directions – not only is trust built over time, but people are also more likely to continue to see a professional who they trust. On average across PaRIS participating countries, people who have been seeing their primary care professional for more than a year are 25% more likely to trust their healthcare professional than those who have been seeing their care professional for less time and are 17% more likely to also trust the health system.[7]

Figure 6.18. People's trust in their healthcare professional grows over time

Percentage of people trusting their healthcare professional based on the length of time they have been seeing their professional



Note: Trust in healthcare professional: Response to question: "Did you have confidence and trust in the healthcare professional you saw or spoke to?", "Yes, definitely; Yes, to some extent" versus "No, not really; No, definitely not". Error bars show the range of the comparative interval. Data based on PaRIS19 Participating Countries.
Source: OECD PaRIS 2024 Database.

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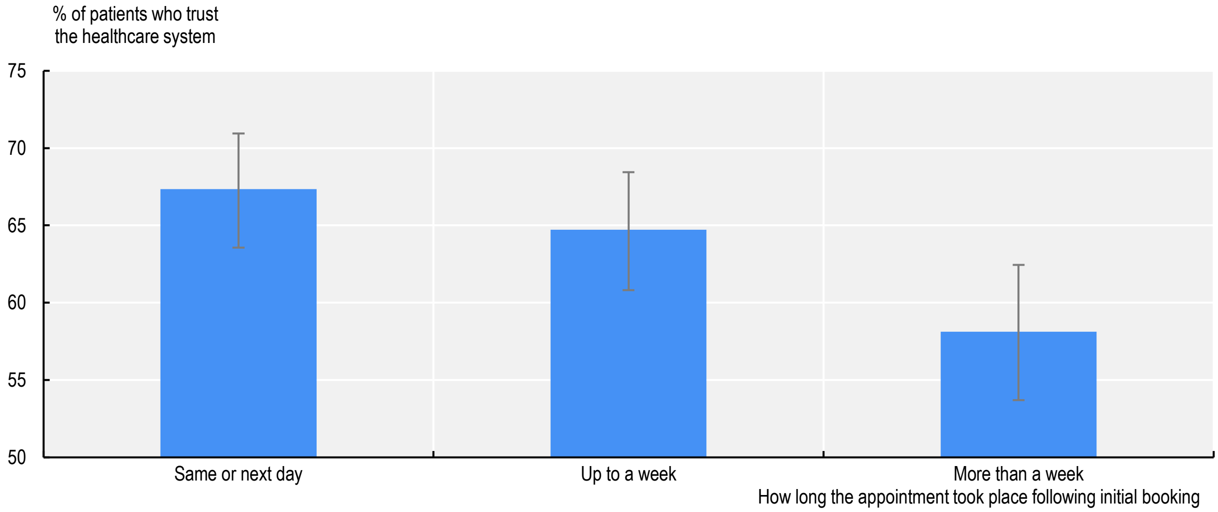
Responsive and timely access to care is associated with higher levels of trust in the health system. As discussed in previously in this section, patient experience of problematic waiting times or lack of sufficient time spent with the care professional can reduce levels of trust in healthcare systems and professionals. In addition, people who attend primary care clinics who schedule longer consultations with their patients (more than 15 minutes per routine appointment) are 12% more likely to trust their healthcare professional and 5% more likely to trust the healthcare system overall.[7] Longer scheduled consultations also show favourable results for care quality. Chapter 3 shows that people living with multiple chronic conditions are more likely to experience good quality of care when they have longer consultations scheduled.

> *"Between birth and age 60 I had four GPs – for 30, 5, 10 and 15 years respectively. Since then I have seen upwards of 20 different GPs. Without full and accurate exchange of records this can mean that much time is taken with familiarisation, and errors can occur. In the past, because I had a personal relationship with the GP this was rare, but recently less so."*
>
> *Anonymous patient, over 75 years old, living with osteo-arthritis, hypertension and benign prostate hyperpathia*

The amount of time between booking and attending an appointment impacts trust, with shorter wait times leading to higher levels of trust. PaRIS survey show that 67% of people who had their appointment the same day or the following day after booking their appointment trusted the health system, as compared to only 58% of people whose appointment was more than a week after scheduling (see Figure 6.19).

Figure 6.19. Timely access to healthcare appointments is associated with increased levels of health system trust

Percentage of people trusting the healthcare system based on the length of time between booking their most recent primary care appointment and when the appointment actually took place



Note: Trust in healthcare system: Response to question: "How strongly do you agree or disagree that the healthcare system can be trusted?", "strongly agree, agree" versus "neither agree nor disagree, disagree, strongly disagree". Error bars show the range of the comparative interval. Data based on PaRIS19 Participating Countries.
Source: OECD PaRIS 2024 Database.

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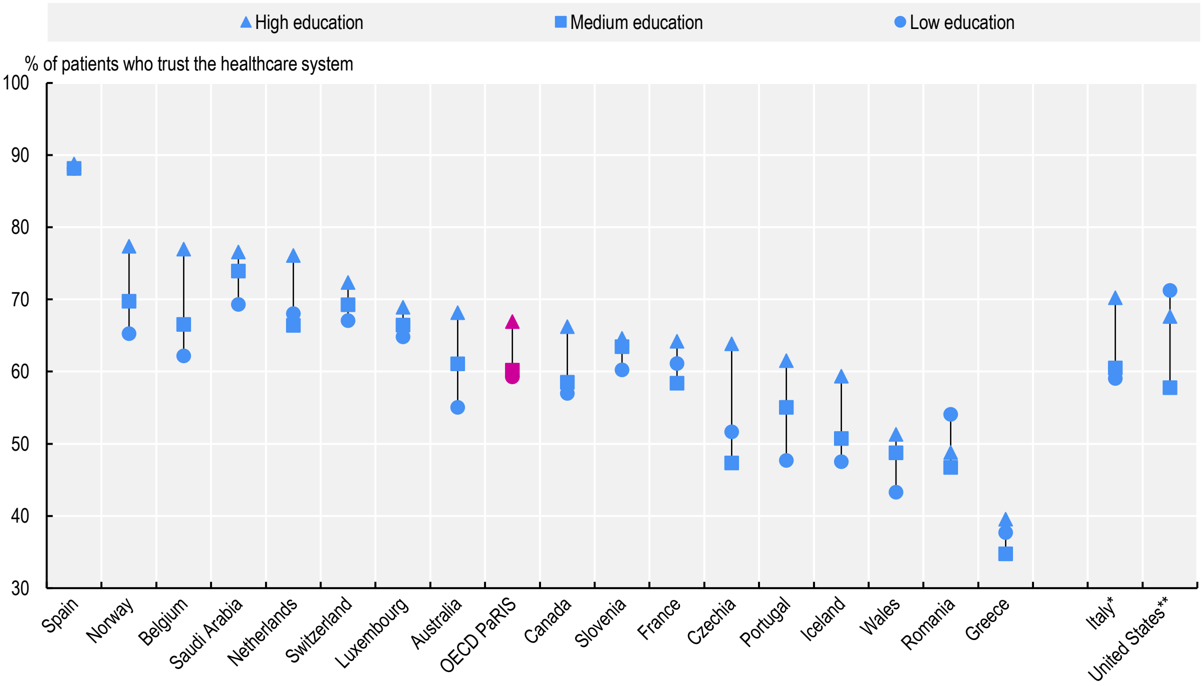
6.4. The relationships between trust and social factors are complex

Social factors influence trust – and research has found that factors such as education and income are associated with higher levels of information seeking, confidence, and trust (Fareed et al., 2021[20]). Minoritised groups often show the lowest levels of trust in healthcare systems, with good reason. Systemic discrimination can contribute to poorer health outcomes, undermining trust in the intentions and competency of the healthcare systems (Berchet, Bijlholt and Ando, 2023[21]). Individual experiences of discrimination and care delivery not catered to individual needs can lead to a vicious cycle, where low levels of trust impact care utilisation, therefore further impacting health outcomes.

People with higher education often possess a better understanding of healthcare processes and have higher levels of health literacy and awareness of entitlements and healthcare related rights. Education may also empower people to navigate healthcare systems more effectively, fostering confidence and trust in the care they receive (OECD, 2019[22]). The gap between those in the highest education level and the lowest is 8 percentage points on average across PaRIS participating countries, with 67% and 59% trusting the health system on average in each group (see Figure 6.20). The trust differential between the highest and lowest educational groups was over 12 percentage points in Australia, Belgium, Czechia, Norway and Portugal. The reverse trend was reported In Romania and the United States, those with lower education level had higher levels of trust in the healthcare system than those who had received higher levels of education.

Figure 6.20. Respondents with lower education levels are less likely to trust the healthcare system

Percentage of respondents with one or more chronic condition in each education group reporting having trust in the healthcare system



Note: See Box 5.1 in Chapter 5 for more information on definitions for High, Medium, and Low education. Trust in healthcare system: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. Gaps between high and low education groups statistically significant for Australia, Belgium, Canada, Czechia, Iceland, Italy, Norway and Portugal. (p<0.05).
Source: OECD PaRIS 2024 Database.

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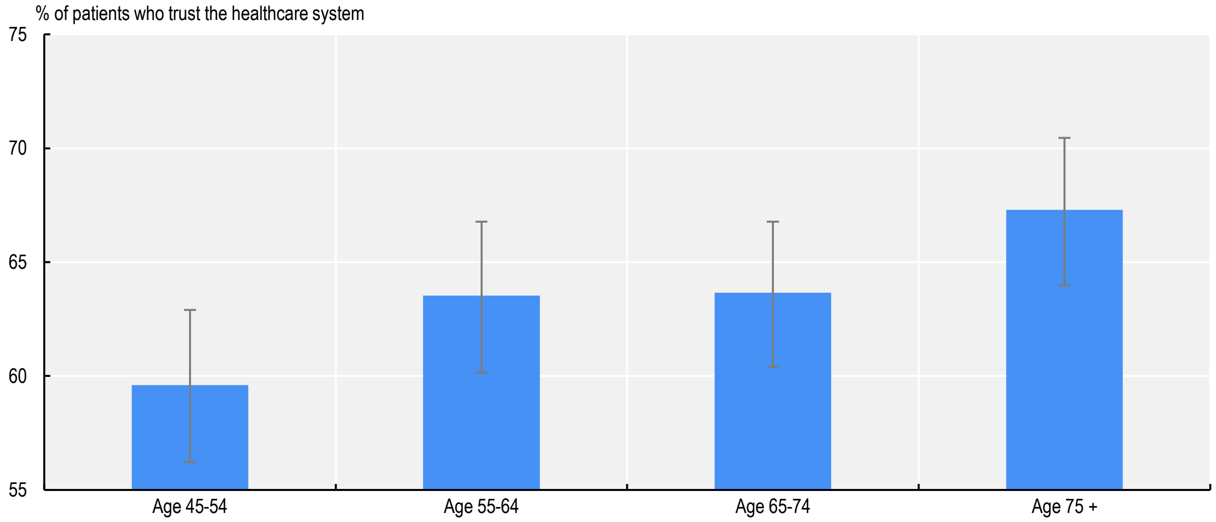
PaRIS data show that age and trust are related, increasing slightly as the age categories increase, with statistically significant differences between levels of trust among the oldest (75 years of age and more) and youngest (45-55) age groups (Figure 6.21). In addition, people living in rural areas are 13% less likely to trust the health system and 4% less likely to trust their most recent care professional than others.[7] Differences in trust levels between respondents based on citizenship or country of birth reveal nuanced findings, for example, levels of trust in the care professional are comparable for those with and without citizenship in their residing countries. Similarly, trust in health systems is not related with country of birth. Interestingly, citizenship does appear to have an impact on trust in health systems – citizens are 17% *less* likely to trust the health system compared to non-citizens. See Chapter 5 for additional discussion of inequalities based on social and demographic factors, including gender and income.

Figure 6.21. Trust in healthcare systems is greatest among people in the highest age groups



Note: Trust in healthcare system: Response to question: "How strongly do you agree or disagree that the healthcare system can be trusted?", "strongly agree, agree" versus "neither agree nor disagree, disagree, strongly disagree". Error bars show the range of the comparative interval. OECD17 data. Differences are between age 45-54 and 75+ are statistically significant ($p<0.05$).
Source: OECD PaRIS 2024 Database.

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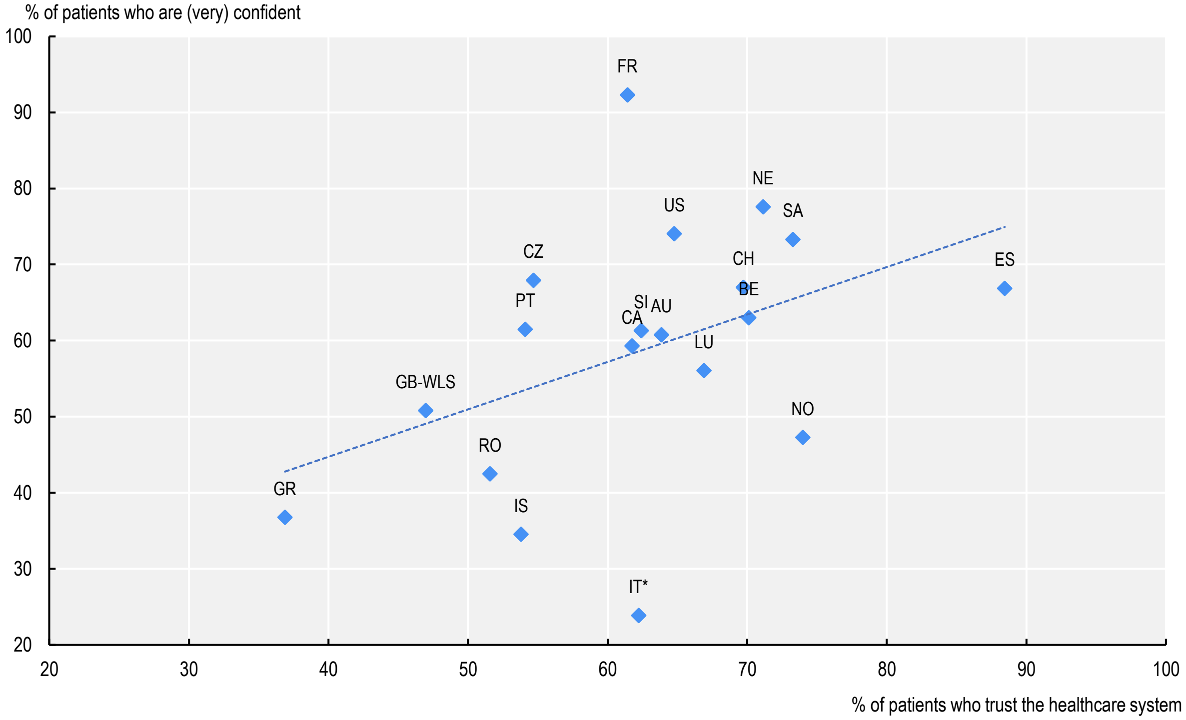
High levels of trust and healthcare capabilities are mutually reinforcing

The relationship between trust and healthcare capabilities is multifaceted. Those with high levels of trust may both feel more confident in their abilities to contribute to their own healthcare but may also feel more confident deferring to their care professional and following their advice. On the contrary, those with low levels of trust may feel the need to take a more active role in managing their health (as they do not necessarily trust the guidance offered by their care professionals), and as a result may be more engaged – though they may rely more on unverified sources of information. Ideally, trust and healthcare capabilities should increase in tandem, as a trusting relationship fosters the confidence for people to take an active role in their healthcare, knowing they are able to reach out to their care professionals for support when needed.

> *"My GP communicates very well with me, he shows empathy, understanding, and creates healthcare plans that are easy to follow. I trust his judgment and the rapport is built through [these] trustful healthcare arrangements."*
>
> *Lana, 45 years old, living with uncontrollable hypertension, pre-diabetes, arthritis, chronic back, severe allergic rhinitis, and lived experience of mental health issues*

People who feel more comfortable navigating the healthcare system and self-managing their health conditions are more likely to have trust in healthcare systems related to their increased control of the care process and its outcomes. Countries in which there are more people with chronic health conditions who trust the healthcare system also have higher levels confidence in self-management (see Figure 6.22).

Figure 6.22. Countries with higher confidence in self-management among people living with chronic conditions also have higher trust in healthcare systems



Note: P3CEQ Questionnaire. Response to question: "How confident are you that you can manage your own health and well-being?", "confident or very confident" versus "somewhat confident or not confident at all". Trust in healthcare system: Response to question: "How strongly do you agree or disagree that the healthcare system can be trusted?", "strongly agree, agree" versus "neither agree nor disagree, disagree, strongly disagree". *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. * Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older.
Source: OECD PaRIS 2024 Database.

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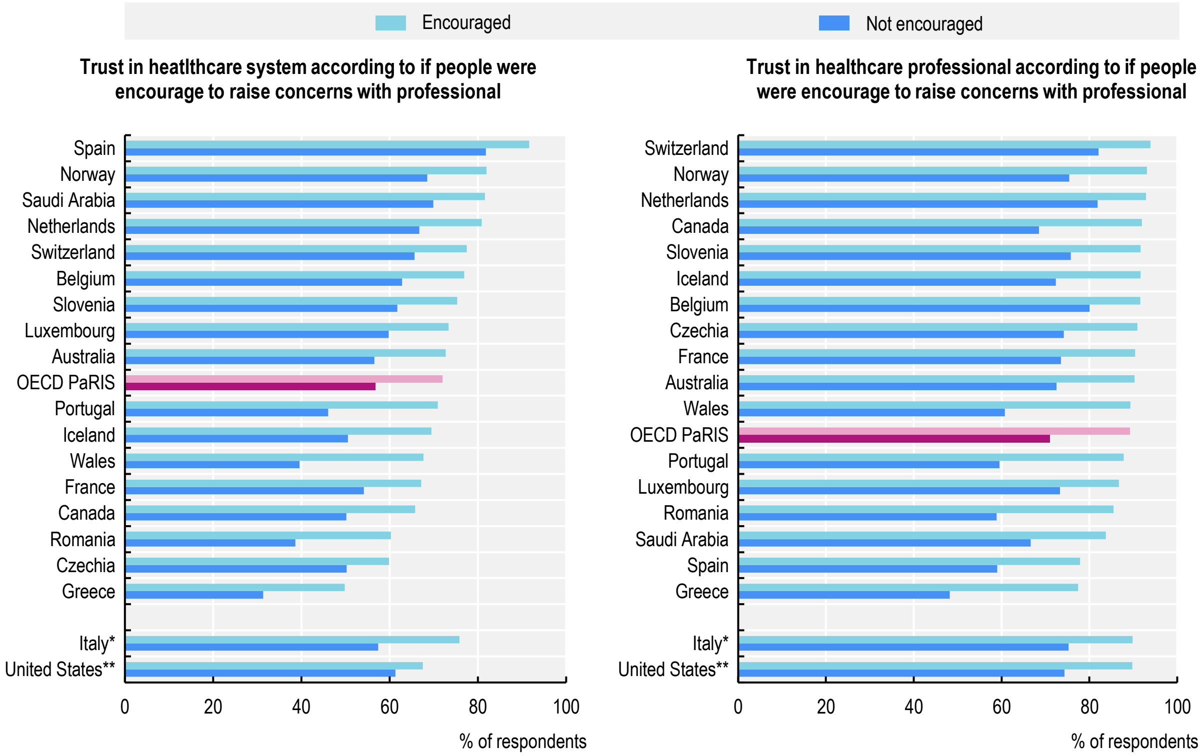
> *"Trust increases when [healthcare professionals] give me options, explain things, and allow me to understand the reasons behind my health conditions, symptoms, or the need for a treatment. When I am presented with options and given an active role, that is what builds my trust in the healthcare system."*
>
> *Lucía, 42 years old, female, living with multiple chronic conditions*

Confidence in self-management relates to people's comfort speaking with medical professionals, particularly when they may be raising concerns or questioning diagnoses or courses of treatment. Being able to raise concerns without fear of repercussions and negative reactions from care professionals is indicative of trusting relationships where a patients well-being comes first. People who are encouraged to raise concerns with their healthcare professional are, on average, 15 percentage points more likely to trust the healthcare system and 18 percentage points more likely to trust their healthcare professional as compared to those who do not feel encouraged to raise concerns (Figure 6.23).

Figure 6.23. People trust healthcare systems and care professionals more when they are encouraged to raise concerns

Percentage of people living with chronic conditions who trust the healthcare system or their most recent care professional according to if they were encouraged to raise concerns with their professional



Note: Trust in healthcare system: Response to question: “How strongly do you agree or disagree that the healthcare system can be trusted?”, “strongly agree, agree” versus “neither agree nor disagree, disagree, strongly disagree”. Trust in healthcare professional: Response to question: “Did you have confidence and trust in the healthcare professional you saw or spoke to?”, “Yes, definitely;” versus “Yes, to some extent; No, not really; No, definitely not”. *Data for Italy refer to patients enrolled in outpatient settings for specialist visits in selected regions. **United States sample only includes people of 65 years and older. All differences for Trust in the healthcare system are statistically significant ($p<0.05$), except for Czechia and the United States. All differences for Trust in the healthcare professional are statistically significant ($p<0.05$).
Source: OECD PaRIS 2024 Database.

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6.5. What is next for the trust agenda: areas of policy action for policy makers

Trust in healthcare systems and care professionals is an important outcome of healthcare systems. People living with chronic conditions often deeply depend on healthcare systems to deliver their care – and may have limited ability to individually verify the quality of the care they receive. This is why trust, built over time, is essential to ensure people's confidence in the healthcare system and healthcare professional.

The findings from this chapter show that across PaRIS participating countries, trust – in addition to being an indicator of healthcare system performance on its own – dually reflects the quality and person-centredness of care provided to patients. In measuring and prioritising trust, healthcare systems can identify deficits, foster stronger patient-provider relationships, and enhance overall patient experience and outcomes. The capture and assessment of this data in the PaRIS survey is a key first step that should be integrated into the ongoing activities of learning healthcare systems.

A concerted effort is now needed to drive improvements in trust, built on transparency and accountability, national and practice level efforts to support continuous improvement and more patient-centred approaches in healthcare delivery. This form of system wide emphasis on trust supports and contributes to more resilient and effective healthcare systems.

6.5.1. The trade-off between efficiency and high-quality patient and caregiver relationships may be a false dichotomy when it comes to patient trust

People living with chronic conditions use a significant proportion of health services – including time and resources to consult with (often multiple) healthcare professionals. This on-going relationship emphasises the importance of the trust in healthcare professionals and the systems they access and adhere for the management of their conditions. It creates an opportunity for front-line primary healthcare workers to both deliver high quality care, but also contribute to systems level trust and the associated improved population outcomes. While individual relationships may not be scalable, the factors that contribute to their success – background and understanding of the patient, accessibility, continuity of care, for example – can be. **Supporting in primary care healthcare systems with the tools needed to emulate personalised care can improve trust, and the many related outcomes and experiences, for people living with chronic health conditions**.

Time is a high-cost resource in primary care and time between patients and professionals is crucial to enhancing communication and building trust. As discussed in Section 6.2, when patients feel like they don't have *enough* time with their care professional, trust in the healthcare system and professional also deteriorate. However, this outcome likely relates to more than just the length of appointments – despite the evident relationship between scheduled appointment times and trust. Having *enough* time with a care professional may have more to do with an appointment providing high quality care, getting the information, providing time to raise concerns, and not wasting time on providing information that professionals should already have in their systems – experiences that are all also significantly related to trust.

Patient-professional communication can be done more effectively, including clear explanations, transparency about treatment options, and how to handle misinformation that may affect trust – without necessarily requiring longer appointments. Other mechanisms for increasing efficiency and access, such as shared patient pools and virtual care, can be just as trustworthy as solo practices or face-to-face care.

6.5.2. Supporting patients' abilities to self-manage is a lever for improving trust in professionals and the system more broadly

Supporting patients' abilities to self-manage their health can significantly increase their confidence in the healthcare system. This is particularly important for people living with chronic health conditions, where effective self-management can improve outcomes and reduce the need for costly and unnecessary health services. When patients are equipped with the knowledge, tools, and resources to manage their conditions effectively, it can result in feelings of empowerment and control of health outcomes. PaRIS survey participants with higher confidence in self-management also routinely report higher levels of trust in healthcare systems, reflecting recognition of the system's role in providing the support for their self-management.

Educational programmes, digital health tools and supports, and consistent communication with care professionals are all critical components for advancing self-management confidence and capacity for people living with chronic conditions. Finally, organisational culture in primary care is key, as patients need to feel safe to raise concerns.

Trust, built over time between a care professional and patient, can create the space for dialogue and conversation that can help prevent patient safety incidents and miscommunication, while informing effective care that meets patients' needs. **As patients become more competent in managing their health, their positive experiences and outcomes reinforce their confidence in the broader healthcare system's capability to deliver quality care and support, enhancing individual patient experience**.

6.5.3. Improvements in communication and digital functionalities in the primary care are essential building blocks

Effective communication and enhanced digital functionalities are essential for advancing care co-ordination within healthcare systems. As noted in Section 6.2, survey respondents who had to repeat health information that should have been documented in their care record were 32% less likely to trust the health system overall and 31% less likely to trust their healthcare professional. Ensuring that digital systems are interoperable across settings is essential to ensure care professionals can access important patient information, reducing the need for patients to repeatedly provide information, and subsequently improve care and minimise errors. Expanding digital tools like electronic health records, telemedicine, and patient portals can facilitate collaboration among healthcare professionals and improves patient access to health information. However, **while these tools are necessary, this analysis shows that they are not sufficient alone to build trust**; they must be implemented in ways that genuinely improve care outcomes – such as reducing adverse events, supporting continuity of care, and enabling more face-to-face time with professionals.

For digital advancements to succeed, patients must feel confident that their data is securely managed and used only for legitimate purposes. Trust in the health system extends beyond individual care decisions and relies on transparent communication regarding public health decisions and healthcare policies. Finally, to build trust, digital health tools must not only drive improvements but also be transparent and involve patients in their design. This approach helps patients understand how their data is used and enhances usability, contributing to trust and system effectiveness.

6.6. Conclusion

Individual relationships are foundational to trust, serving as the bedrock upon which broader confidence in healthcare systems are built. PaRIS data show that consistent, positive interactions via a single/central healthcare professional foster a sense of trust and reliability on an inter-personal level. In addition, these individual experiences of trust can significantly influence a patient's perception of the entire healthcare system, shaping their overall trust in the healthcare system's ability to deliver quality care.

This spillover effect highlights the critical role that personal interactions play in enhancing the credibility and reliability of healthcare institutions, ultimately leading to a more trusting and resilient healthcare environment. Trust, like other essential aspect of healthcare system infrastructure, needs to be invested in, built, and maintained. Healthcare systems and policy makers play a crucial role in fostering trust among individuals with chronic health conditions by ensuring transparent communication and accessible, patient-centred care.

Notes

[1] See box *What is trust?* for more information on comparability.

[2] The spread of false and misleading information (misinformation), often deliberately disseminated to deceive or mislead (disinformation), blurs public debates and fuels polarisation.

[3] www.who.int/health-topics/infodemic#tab=tab_1.

[4] The indicator measures "Mental health" based on a person's response to four questions on quality of life, emotional distress and social health, using the PROMIS Global Scale. The charts here show the scale score for an "average" person with specified characteristics, notably if they do or do not have chronic conditions, and by their primary healthcare professional. This score is a T-score metric in which 50 is the mean and 10 the standard deviation of the PROMIS reference population, and 40 is the cutoff for being in "good" mental health or better (as compared to "fair" health or worse).

[5] Based on PaRIS item for last consultation, "Was the time you waited a problem for you?".

[6] There is a statistically significant difference between these two groups.

[7] This analysis is conducted using a random intercept model. Please see Section 7.7.7 (model (1.) (equation 1.)) for technical details.

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7

PaRIS data and methods

This chapter outlines the methodology of the OECD’s PaRIS, emphasising its pioneer approach to collecting data from patients and primary care practices across 19 countries. The chapter explains the conceptual framework, research questions, questionnaires, target population, eligibility criteria, and the nested study design, addressing sampling frames and methods. It also examines implementation details in each participating country, limitations in the approach, and response rates, ensuring transparency in the representativeness of the results. Lastly, the analytical methods used to generate comparable country estimates of patient-reported indicators are outlined, covering standardisation, case-mix adjustment, and the management of missing data to ensure the reliability and validity of the results across diverse healthcare settings.

7.1. What is PaRIS?

- PaRIS aims to improve healthcare by assessing and publishing patient-reported measures across OECD and partner countries to facilitate international comparison and cross-country learning.
- PaRIS is a survey of unprecedented scale and includes data collected in 2023-24 from 107 011 patients linked to 1 816 primary care practices across 19 countries.[1]
- PaRIS addresses gaps in healthcare evaluation by systematically measuring patient reported experiences and outcomes and using results to drive system-level improvements. In doing so, PaRIS supports countries in making health systems more responsive to people's needs.
- PaRIS has been co-created with policy makers, patients, healthcare professionals, academics, and other stakeholders worldwide for comprehensive and policy relevant data collection. It focuses on the whole person and enables linkages between primary care and health system characteristics to outcomes and experiences of patients.
- PaRIS is designed for cross-country comparison. The main instrument is a survey among primary care service users aged 45 years or older. An additional survey among their primary care practices is included to collect data on the characteristics of primary care services and care they provide.
- The flagship report provides insights into multimorbidity, people-centred care, inequalities, trust in healthcare and key indicators like self-reported health, well-being and experienced quality of care.

7.1.1. The unique features of PaRIS

In contrast to most traditional health data, **PaRIS offers comprehensive details on people's lives**, including nationality and country of birth, financial situation, education, household composition, health-related behaviour, and more. This rich dataset allows for a deeper exploration of how health outcomes and experiences vary across different groups.

PaRIS has a **people-centred approach to patient-reported measures**. While much of the existing work on patient-reported measures focuses on specific conditions or procedures, PaRIS stands out by taking a broader perspective, encompassing multiple chronic conditions. PaRIS looks beyond isolated health events and considers the ongoing experiences of people with chronic conditions.

Unlike population-based health surveys, **PaRIS focuses on primary care users 45 years or older** exclusively. As such, it does not serve as a source for estimating prevalence or incidence rates in the population. Instead, it offers a nuanced understanding of the experiences and outcomes of people who have firsthand experience with primary care services; an area that has often been poorly understood in many countries to date.

PaRIS **links characteristics of primary care settings with outcomes and experiences of patients**. The survey was conducted on two levels: questionnaires were filled out by both patients and their primary care practices. This allows analysis and further interpretation of findings in light of primary care characteristics – creating a foundation for primary care policy reforms.

PaRIS is **a collaborative initiative.** The PaRIS-SUR Consortium is an international team led by the Netherlands Institute for Health Services Research that supports the development and implementation of PaRIS. Moreover, the OECD also partnered with patients, healthcare professionals, policy makers, and academics worldwide. These stakeholders played a vital role throughout the project, selecting and testing survey questions, designing the survey implementation, conducting the survey in the field, and analysing results.

7.1.2. Countries and economies participating in PaRIS

Nineteen countries participated in the first cycle of PaRIS: Seventeen OECD member states – Australia, Belgium, Canada, Czechia, France, Greece, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Slovenia, Spain, Switzerland, the United States, Wales and two non-member countries – Romania and Saudi-Arabia. Countries collected data during 2023, except for Switzerland that collected patient data in early 2024. Data collection was managed by National Project Managers in each country, supported and co-ordinated by the PaRIS Consortium and the OECD.

7.1.3. Patient survey respondents

A total of 114 576 patients took part in the first cycle of PaRIS. Of these patients, 107 011 could be linked to a primary care practice and were thus available for analysis.[2] PaRIS invited people aged 45 and over who had at least one contact with a primary care practice in the 6 months preceding the day of sampling, and who lived in a private household (i.e. not an institution such as a long-term care facility). Eighty-two percent of people surveyed reported having at least one chronic condition.

Patients were asked to self-report their chronic conditions. Self-reporting was preferred to health records to avoid patient privacy breaches and to facilitate data collection in all countries. Self-reporting chronic conditions also avoided comparability challenges related to differences in registration practices between and within countries.

While PaRIS focuses mainly on people living with chronic conditions, this was not a precondition to participate in the survey. As a result, the patient questionnaire was also completed by primary care service users who did not report having a chronic condition. These respondents were included to provide a valuable context for the interpretation of results. For example, when comparing the quality of life of people with chronic conditions across countries, using reference data pertaining to people living without chronic conditions can be used to shed light on healthcare system factors, independent of the presence and prevalence of health conditions.

7.1.4. Primary care practices

A total of 1 814 primary care practices participated in PaRIS. Primary care is considered the first point of contact for non-emergency medical care available to all members of a community, regardless of age, gender or health conditions. It is frequently delivered by teams of healthcare professionals, usually co-ordinated by a family doctor or a general practitioner. Primary care practitioners offer generalist care, covering a broad spectrum of health needs, including the management of chronic conditions.

Generalist care emphasises comprehensive, continuous, and co-ordinated care, without restrictions based on patient categories. The focus is on ensuring that patients receive all necessary care, maintain regular contact with a healthcare professional, and experience well-organised and efficient care delivery.

The term primary care practice in this report refers to places where people receive care, such as practices or medical offices, rather than – but not excluding – individual healthcare professionals. These settings may vary in size, ranging from small single-practitioner offices to larger facilities with multiple healthcare professionals.

Primary care practices typically employ doctors known as general practitioners, family physicians, or family doctors. These professionals serve as a first point of care and deliver care to community members without requiring a referral. These facilities may also employ other healthcare professionals, such as nurses, medical assistants or social workers.

Primary care practices were requested to complete a primary care practice questionnaire. This questionnaire focuses on the organisational structure of the practice and does not include individual sociodemographic items pertaining to the respondent, such as age and gender. Additionally, except from France, Norway and Wales, primary care practices were also requested to facilitate patient sampling and recruitment.

Box 7.1. Relevant publications

The following is a list of relevant publications detailing the methods behind PaRIS

- PaRIS project presented to the Health Committee (OECD, 2019[1])
- PaRIS Study Protocol (de Boer et al., 2022[2]), updates (Rijken M et al., 2023[3])
- PaRIS conceptual framework (Valderas et al., 2024[4])
- PaRIS Primary care practice Questionnaire (Bloemeke-Cammin et al., 2024[5])
- PaRIS Patient Questionnaire (Valderas et al., 2025[6])
- PaRIS Analysis Plan (Groenewegen et al., 2024[7])
- PaRIS Field Trial Report (van den Berg et al., 2024[8])

Other relevant publications

- All hands on deck: Co-developing the first international survey of people living with chronic conditions: Stakeholder engagement in the design, development, and field trial implementation of the PaRIS survey (Kendir et al., 2023[9])
- Lessons from early implementation of the OECD's Patient-Reported Indicator Surveys (PaRIS) in primary care: making the case for co-development and adaptation to national contexts. (Kendir et al., 2023[10])
- Engaging primary care professionals in OECD's international PaRIS survey: a documentary analysis (Kendir et al., 2024[11])

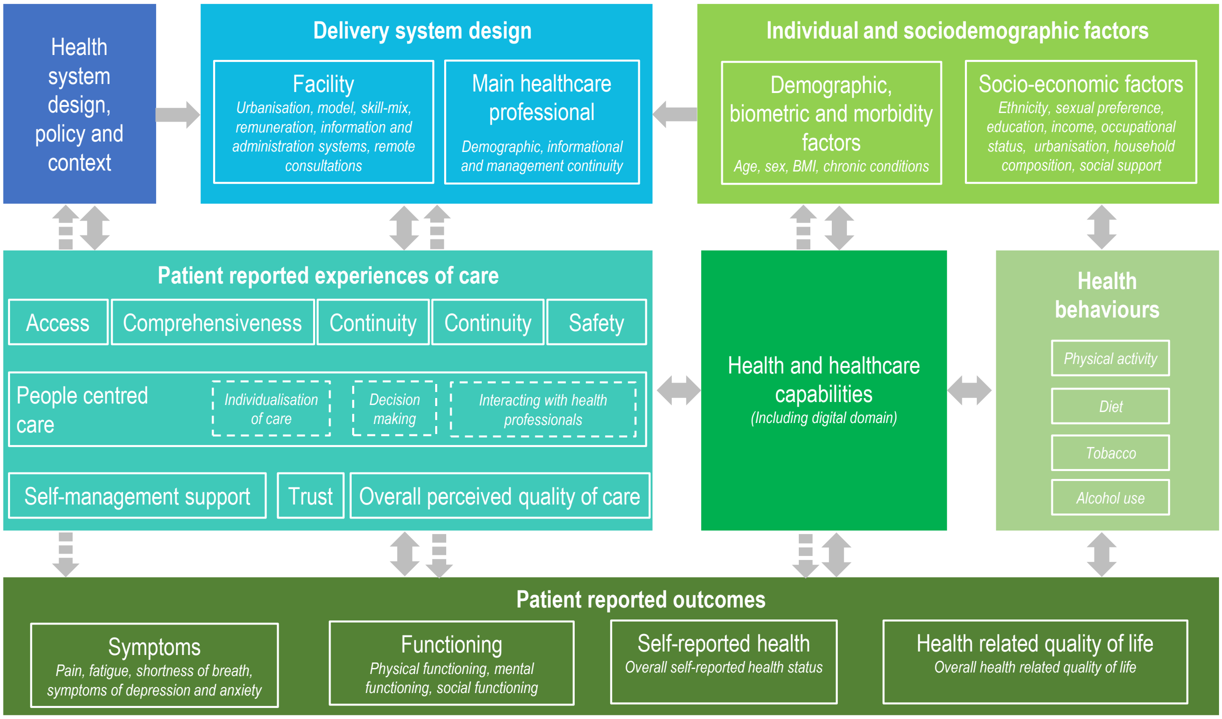
7.2. What does PaRIS measure?

7.2.1. Conceptual framework

The PaRIS conceptual framework was developed together with a wide range of stakeholders, including policy makers, patients, healthcare professionals, academics, and others. A detailed description of the PaRIS conceptual framework was published in 2024 (Valderas et al., 2024[4]).

The framework consists of the following domains (Figure 7.1): patient reported outcomes (symptoms, functioning, self-reported health status, health related quality of life); patient reported experiences of care (access, comprehensiveness, continuity, co-ordination, safety, people-centredness, self-management support, trust, overall perceived quality of care); patients' health and care capabilities; patients' health behaviours (physical activity, diet, tobacco use, alcohol use); patients' individual and sociodemographic characteristics; primary care delivery system (characteristics of the primary care facility; characteristics of the main primary care professional); characteristics of the health system, policy and context.

Figure 7.1. Conceptual framework of PaRIS



As shown in the framework, it is expected that the care experiences and outcomes of people living with chronic conditions are determined by their personal and condition-related characteristics, their capabilities to self-manage their health and care as well as by their health behaviours. Moreover, it is expected that structural characteristics of primary care practices as well as the way they organise the delivery of chronic care impacts patients' care experiences and outcomes. Finally, characteristics of the health system, policy and context determine how the provision of primary care is organised and chronic conditions are managed in a country.

PaRIS data addresses many questions that are relevant for people living with chronic conditions and their families, primary care practices, policy makers and health authorities. This report mainly focuses on the overall goal of PaRIS, that is, to inform countries on the patient-reported outcomes and care experiences of their citizens living with chronic conditions compared with similar populations in other countries. The data analysis is guided by the following main research questions:

7.2.2. Research questions

- What are the patient-reported outcomes of primary care service users aged 45 and over with chronic conditions, compared with those without chronic conditions, in the areas of symptoms, physical, mental and social functioning, self-reported health and health-related quality of life? How do these results vary across countries?
- What are the experiences of primary care service users aged 45 and over with chronic conditions, compared with those without chronic conditions, in the areas of access, comprehensiveness, continuity, co-ordination, safety and people-centredness of care, self-management support, trust and overall perceived quality of care? How do these results vary across countries?
- How do patient-reported outcomes and care experiences vary for primary care service users aged 45 and over with chronic conditions by background characteristics such as age group,

gender, education level, occupational status, household composition, health-risk behaviours, level of multimorbidity, disease status and confidence in managing one's own care?

- How do key characteristics of primary care practices relate to the care experiences and outcomes of primary care service users aged 45 and over with chronic conditions?
- How do characteristics of health systems and countries relate to the care experiences and outcomes of primary care service users aged 45 and over with chronic conditions?

7.2.3. The Questionnaires

PaRIS uses two questionnaires – one for patients and another for primary care practices. These questionnaires were co-created by the OECD and key stakeholders, including patients and primary care professionals (Kendir et al., 2023[9]). Ensuring comparability across countries was a priority in the development process, given the challenges posed by cultural biases, differences in expectations, and response styles that can impact measurement invariance in cross-country studies. To address these issues, the questionnaires were designed with intercultural differences in mind, incorporating insights from international guidelines and expert recommendations for cross-cultural validation and adaptability (Avvisati, Le Donné and Paccagnella, 2019[12]; Van de Vijver et al., 2019[13]).

This process included extensive consultation with patient groups and primary care professionals, rigorous translation procedures to ensure linguistic accuracy, and cognitive testing in each participating country to refine items and minimise cultural discrepancies (see Section 7.2.4). Moreover, during Field Trial, questionnaires were tested in 17 countries and modifications to enhance cross-country validity were incorporated in the final questionnaires. Additionally, the reliability and validity of the measures across diverse contexts was assessed with Field Trial data.

The PaRIS Patient Questionnaire (PaRIS-PQ)

Themes covered in the patient questionnaire are:

- Patient-Reported Outcome Measures (PROMs): PROMs refer to the patient's health, quality of life, or functional status that could be affected by healthcare.
- Patient-Reported Experience Measures (PREMs): PREMs refer to people's experience with healthcare, for example with access, communication, co-ordination of care, etc.
- Trust: people's confidence in primary care practices and in the healthcare system as a whole.
- Healthcare capabilities, such as people's ability to manage own health and well-being.
- Health behaviour, such as diet, exercise and the use of alcohol and tobacco products.
- Healthcare use.
- Demographic variables, such as age, gender and education.
- Self-reported chronic conditions.

The full source questionnaire in English is available at the OECD PaRIS website,[3] a detailed description of the development of the questionnaire will be published in 2025 (Valderas et al., 2025[6]).

The PaRIS Primary Care Practice questionnaire (PaRIS-PCPQ)

Themes covered in the PaRIS-PCPQ:

- The organisation of care
- Chronic care management
- Information about the practice

- Patient-Reported Outcome Measures (PROMs): PROMs refer to the patient's health, quality of life, or functional status that could be affected by healthcare.
- Patient-Reported Experience Measures (PREMs): PREMs refer to people's experience with healthcare, for example with access, communication, co-ordination of care, etc.
- Trust: people's confidence in primary care practices and in the healthcare system as a whole.
- Healthcare capabilities, such as people's ability to manage own health and well-being.
- Health behaviour, such as diet, exercise and the use of alcohol and tobacco products
- Healthcare use.
- Demographic variables, such as age, gender and education.
- Self-reported chronic conditions.

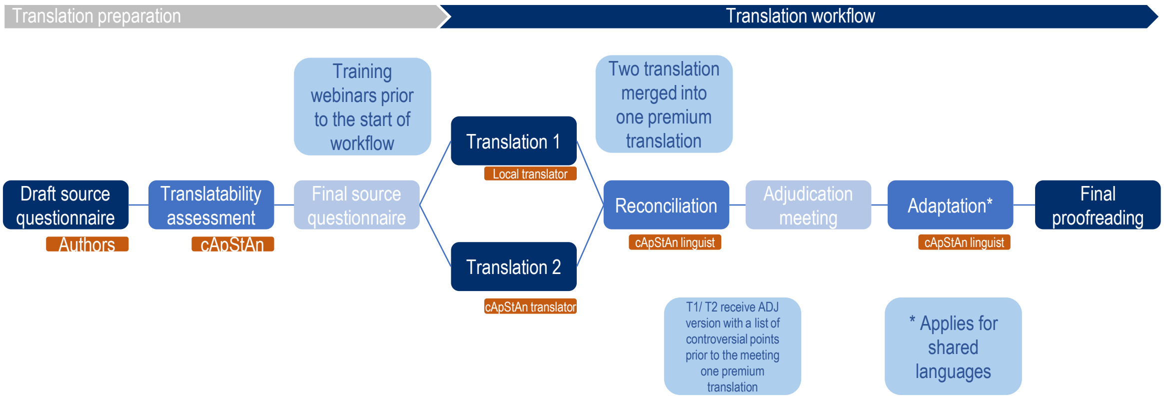
The full source questionnaire in English is available at the OECD PaRIS website[2], a detailed description of the development of the questionnaire has been published by Bloemeke-Cammin et al. (2024[5]).

7.2.4. Translation and cognitive testing

Two source versions were developed for both questionnaires: one in UK English and one in French. Translations into the main languages of participating countries were conducted by a specialised translation agency (cApStAn / CEDAR (for Welsh)) in close collaboration with national translators and experts, and followed the TRAPD model (Translation, Review, Adjudication, Pretest, Documentation) (Harkness, van de Vijver and Johnson, 2003[14]). The method requires two independent translations followed by four stages: reconciliation, adjudication, adaptation and final proofreading (Figure 7.2).

The survey was translated into 16 languages: Arabic, Czech, Dutch, English, French, German, Greek, Hebrew, Icelandic, Italian, Norwegian, Portuguese, Romanian, Slovene, Spanish, Welsh. National project managers were encouraged to co-ordinate additional translations for minority languages in their countries using the same method. Additional translations were made in: Turkish, Russian, Basque, Chinese, Vietnamese, Punjabi, Catalan and Galician.

Figure 7.2. The TRAP-D method for survey translation



Source: PaRIS Translation guidelines and resourcing requirements, based on Harkness, J., F. van de Vijver and T. Johnson (2003[14]), "Questionnaire design in comparative research", in *Cross-Cultural Survey Methods*.

At a later stage, the questionnaires underwent the four-stage model of cognitive testing developed by Tourangeau (1984[15]): Comprehension – Retrieval – Judgement – Response. The model evaluates how respondents understand, recall, and provide accurate responses to survey questions. This process helps ensure that the questionnaires are both reliable and valid, minimising bias and errors in the data collection.

7.2.5. Chronic conditions

The presence of chronic conditions among PaRIS respondents was measured via self-report. The initial version of self-assessment categories was based on a comprehensive scoping review focusing on the documentation of self-reported chronic conditions in primary care. The authors employed specific criteria for the selection of chronic conditions, including their relevance to primary care services, impact on affected patients, prevalence among primary care users, and how often the conditions were present in the condition lists retrieved from literature (Fortin, Almirall and Nicholson, 2017[16]).

Subsequent modifications involved removing categories with anticipated low prevalence in OECD countries based on Global Burden of Disease studies,[4] followed by rigorous assessment and testing by both patients and healthcare professionals. To ensure accessibility to laypersons, conditions were presented in simple, self-explanatory terms rather than professional medical language. Conditions were grouped into broader categories such as “breathing conditions” and “cardiovascular or heart conditions” to minimise potential misunderstanding stemming from the use of specific terminology.

The list of conditions was reviewed by healthcare professionals and patients. Box 7.2 shows the final question and options presented to survey respondents.

Box 7.2. Self-reporting tool used in the PaRIS Patient Questionnaire for asking about chronic conditions

Have you ever been told by a doctor that you have any of the following health conditions?

Please select all the options that apply.

- High blood pressure
- Cardiovascular or heart condition
- Diabetes (type 1 or 2)
- Arthritis or ongoing problem with back or joints
- Breathing condition (e.g. asthma or COPD)
- Alzheimer’s disease or other cause of dementia
- Depression, anxiety or other mental health condition (e.g. bipolar disorder or schizophrenia)
- Neurological condition (e.g. epilepsy or migraine)
- Chronic kidney disease
- Chronic liver disease
- Cancer (diagnosis or treatment in the last 5 years)
- Other long-term problem(s)
- I have never been told by a doctor that I have any of these problems.

Source: PaRIS Patient Questionnaire 2024.

Due to application of the self-reporting approach used in the survey, it was not necessary to access patient’s medical records to identify if a respondent had received a relevant diagnosis. This approach mitigated registration bias due to different registration practices across countries and reduced concerns related to accessing sensitive health information in the medial record. However, some limitations should be considered when interpreting the data:

- While we refer throughout the report to people with 1, 2, or more chronic conditions, or people with multimorbidity, the method may underestimate the prevalence of multimorbidity in cases where individuals have multiple conditions falling into the same category. To avoid overestimation in the number of chronic conditions, respondents were asked to report conditions that they were "told by a doctor".
- Due to the broad categorisation, the PaRIS data offer limited insight into the analysis of specific conditions.
- Varying criteria, definitions, and measurements across countries may impact the interpretation of certain conditions. For instance, although some standards are published by international professional associations, national guidelines for defining high blood pressure can differ in participating countries (Justin et al., 2022[17]).

Despite limitations, stakeholders and experts involved in PaRIS agreed that the self-assessment tool was the best choice for capturing chronic conditions in this survey. It safeguards privacy, minimises bias, and promotes participation. While recognising its constraints, the tool's robust development and user-friendly design ensure valuable insights into health status and ensures international comparability.

7.2.6. PaRIS Field Trial

Nineteen countries (Australia, Belgium, Canada, Czechia, England, France, Greece, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Romania, Saudi Arabia, Slovenia, Spain, Switzerland and Wales) participated in the Field Trial and collected data in different timelines in the period between March 2022 and March 2023.

The Field Trial aimed to assess the psychometric quality, reliability, and validity of the questionnaires. Further, it was used to test the implementation and collection design in participating countries. The field trial report was published in June 2024 (van den Berg et al., 2024[8]).

A total of 11 153 patients completed the Field Trial patient questionnaire. Patient participation per country ranged from 2 360 to 698. Furthermore, 547 primary care practices in 18 countries completed the Field Trial practice questionnaire.

Response rates varied strongly between countries. Overall, the sample sizes were adequate for a robust test of survey instruments. In confirmatory factor analyses, the Field Trial showed an acceptable performance of the internationally validated PROMs (PROMIS Global – Physical and Mental health scales, and WHO-5 Well-being Index).

The Field Trial provided valuable lessons for the Main Survey. Based on the results the surveys tools were revised and survey administration procedures were improved. National Project Managers of participating countries critically reflected on achieved response rates and shared experiences and good practices on recruitment, engagement and communication. Several countries considerably improved their recruitment strategies to ensure higher response rates in the Main Survey.

7.3. The PaRIS population

7.3.1. PaRIS target population

To secure international comparability, the standardisation of instruments and procedures is essential. Participants in PaRIS are **1) primary care practices and 2) primary care service users who had at least one contact with their primary care practice in the 6 months preceding the sampling, aged 45 and over living in a private household**. Although specific procedures to achieve national or partially national representativeness differ between countries, this simple yet concise definition makes populations comparable across participating countries.

7.3.2. Why this population?

Unlike many studies that concentrate on specific diseases or evaluate “before-and-after” outcomes of specific medical procedures, PaRIS focuses on the continuous management of chronic conditions. This approach is crucial for understanding the real-world experiences of patients who require ongoing care. PaRIS targets a diverse group of people living with chronic conditions who are managed in primary care settings. The choice for this population followed from the recommendations of the high-level reflection group and the 2017 OECD Health Ministerial declaration. Reasons behind the selection of this population are:

High prevalence and impact

Chronic conditions, such as diabetes, hypertension, and chronic obstructive pulmonary disease, represent a significant and growing burden on people and healthcare systems worldwide. These conditions often coexist, complicating patient care and necessitating a more comprehensive understanding of their management. People with chronic conditions form the largest and fastest growing group of healthcare users worldwide.

The central role of primary care

Primary care serves as the cornerstone of chronic disease management. It provides continuous, co-ordinated, and comprehensive care, which is essential for managing long-term conditions. Unlike care that focuses on acute episodes or specific interventions, primary care offers an ongoing relationship with patients. This continuity allows for a deeper understanding of patient needs, the progression of their conditions, and the effectiveness of management strategies over time.

Most existing healthcare knowledge is derived from hospital settings and focuses on specific conditions, providing detailed insights into acute care and specialised treatments. However, most healthcare, especially for chronic conditions, occurs outside hospital walls. Despite this, primary care remains largely a “black box” in terms of research and understanding. By concentrating on this often-overlooked aspect of healthcare, PaRIS seeks to shed light on the quality and nature of care provided in these settings. This focus helps to uncover gaps, improve care delivery, and ensure that the insights gained are reflective of where most patient care actually happens.

Facilitating international comparisons and policy development

By concentrating on a patient group that is universally relevant and requires long-term care, PaRIS enables meaningful international comparisons. These comparisons can shed light on different healthcare systems’ strengths and weaknesses, offering valuable insights for policy development and healthcare reforms. The initiative’s global perspective fosters the sharing of best practices and innovative solutions, ultimately improving the quality of life for patients worldwide.

7.3.3. Selection criteria

Eligibility criteria for primary care practices

Primary care practices in PaRIS are:

- staffed with care professionals that are licensed to serve the general population of a community, and

- provide ambulatory generalist medical care (i.e. in an outpatient setting), including services addressing chronic care management.

The term **“primary care practice” refers to a facility, unit or practice** rather than to an individual primary care practitioner. Primary care practices can be small, for example a solo practice of a family doctor, or large, for example a health centre with staff from multiple disciplines. “Generalist care” refers to care that is focused on the whole person; not restricted to particular body systems.

Eligibility criteria for patients

Patients in PaRIS are;

- aged 45 years or older at the time of sampling; and
- living in a private household in the community (i.e. not in a nursing home or other residential institution); and
- had at least one registered contact with a primary care practice – either face-to-face, by telephone or online –, for any medical or administrative reason, during the six months preceding the selection procedure in the practice information system.

Chronic conditions are prevalent among both young and older people. In that respect, the exclusion of people under 45 is a limitation of the PaRIS study. The age-threshold has been a pragmatic choice: the prevalence of chronic conditions increases with age. This means that the older the sampled group, the higher the chance to include people with chronic conditions. For the younger cohorts, much larger samples would have been required. Experts involved in the development of the study design agreed on 45 years as a pragmatic trade-off between ensuring enough statistical power to draw meaningful conclusions about the included age groups while avoiding solely focusing on older people.

For patients who are unable to fill out the questionnaire themselves due to, for example visual impairments, proxy respondents were allowed to complete the questionnaire on their behalf. Proxy responses are identifiable in the data for analytical purposes. Patients who had a contact but whose participation in the survey was deemed to be too burdensome by the primary care practice could be excluded. Further considerations underlying these eligibility criteria for patients are provided in the Box 7.3.

Box 7.3. Clarification of eligibility criteria for patients

Reason for contact was not a selection criterion

Why patients contacted the primary care practice in the past six months, i.e. reason for contact, does not play a role in the identification of eligible patients, because the reason for contact is privacy-sensitive information.

Presence of a chronic condition was not a selection criterion

Whether or not the patient has (medically diagnosed) registered chronic condition(s) was not considered in the identification of eligible patients. This has several reasons:

- It would have required the use of privacy-sensitive data;
- It would have created too much of a burden for primary care practices and/or practice staff;
- It would have resulted in registration bias as coding and practice information systems vary.

How people living with a chronic condition were identified

The patient questionnaire contains questions that enable to identify these patients based on their self-reported chronic condition(s). The instrument used is based on literature on self-reporting. Conditions are formulated on a generic level to make them understandable for lay-persons, for example "heart conditions", "cancer", etc. See Section 7.2.5 "Chronic conditions".

People without a chronic condition participating in the survey

Because no medical information about patient was known at forehand, part of the sampled patients did not have a chronic condition. The invitation letter for patients invited all sampled patients to participate and did not mention anything related to chronic conditions.

Most questions of the patient questionnaire have been developed and validated for use in the general population including both people with and without (chronic) conditions. A few questions are only applicable to people with chronic conditions; respondents who do not report a chronic condition could skip these questions.

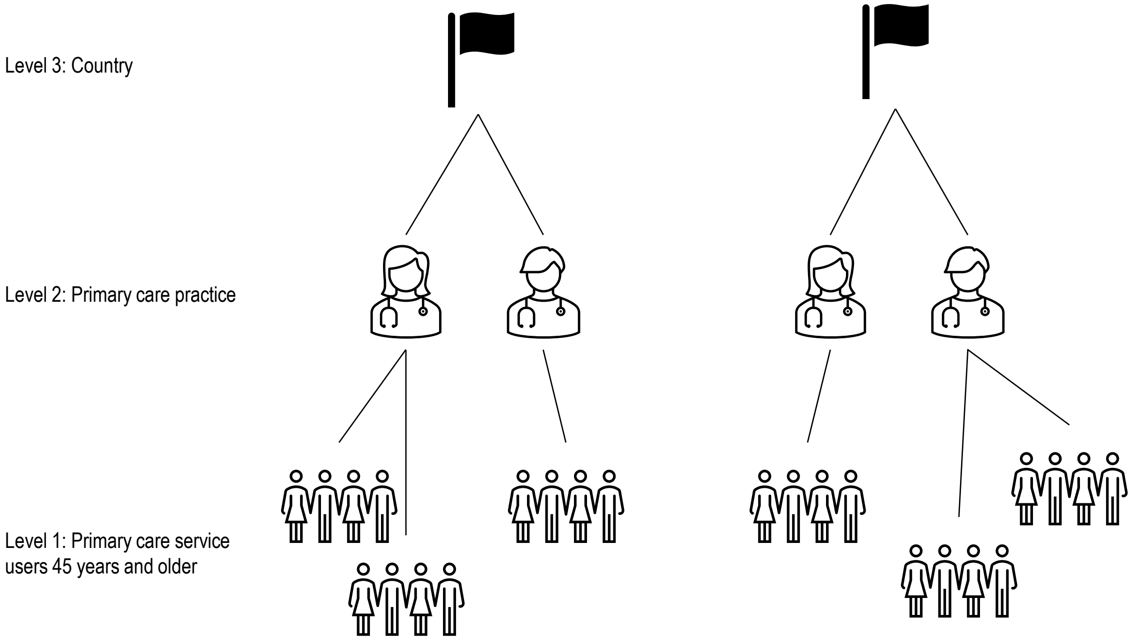
7.4. Study design

PaRIS has a nested design with three levels; patients (primary care service users) are nested in primary care practices, which are nested in national healthcare systems. This allows analysis of the variation in patient-reported data in relation to characteristics of and care provided by primary care practices within and across participating countries.

The nested design of the survey allows for a better understanding of the hierarchical structure of patient-reported information. Given that patients experience primary healthcare through healthcare practices in their countries, each practice will only influence the responses of its patients, while country characteristics will only affect patients of that country. In this line, the outcomes and experiences of patients in the same practice are not independent from each other. This violates the observation independence assumption, key for population statistics. Ignoring the hierarchical structure can lead to underestimating the variability in the data and drawing inaccurate conclusions. Multilevel models account for this nested structure and allow to partition the variation in outcomes across different levels – countries, primary care practices, and patients. This approach not only enhances our understanding of patient-level factors (such as demographics), practice-level factors (like primary care practice capacities), and country-level factors (such as healthcare system characteristics), but also aids in designing targeted policies. It offers a nuanced view of the data's complexity, avoiding the oversimplifications that might arise from treating observations as independent.

Figure 7.3. PaRIS nested design

The three levels of PaRIS



7.4.1. Sample size

The target number of primary care practices in a country was based on the number of eligible practices in the country. In countries with 1 000 or more eligible primary care practices, the goal was to include 100 practices. For countries with fewer than 1 000 eligible primary care practices, the target was 75, or as many as possible if the total number of eligible practices was fewer than 75.

The target number of patients was set to 75 per primary care practice, a standard applied to all countries. The required number of participating patients was based on the assumption that at least 70% would report having one or more chronic condition. This assumption was based on the Field Trial results. Some countries aimed for higher numbers to enable additional national-level analyses.

The PaRIS study protocol (de Boer et al., 2022[2]) provides a detailed description of the sample calculation, which determined the optimal number of practices and patients per practice required to reliably assess the survey's main outcome measures. This calculation also ensured sufficient statistical power to address PaRIS' key research questions.

In a two-step approach, the first step involved calculating the sample size required to achieve reliable outcomes. Outcome reliability for four patient-reported measures was analysed across three levels: patient, primary care practice, and country, using the multilevel model reliability measure (Raudenbush, 2003[18]; Leyland and Groenewegen, 2020[19]).

Simulations from Field Trial data determined that at least 50 primary care practices per country with 100 patients each, or 100 practices with 75 patients each, were needed to meet the reliability criterion of 0.70, akin to Cronbach's alpha in single-level models (Cronbach, 1951[20]).

In the second step, it was analysed whether the sample size that achieved outcome reliability had sufficient statistical power to answer the five PaRIS main research questions (Section 7.2.2). To compare PREMS and PROMS of people with chronic conditions to people without chronic conditions and between countries (research questions #1 and #2), it was determined that the Field Trial sample was adequate for identifying three groups of countries based on their PREM/PROM scores. The three groups were (1) those aligning with the overall average, (2) those scoring above, and (3) those scoring below the average.

The large patient sample in the survey ensures reliable estimation of outcomes across multiple patient-level variables in a multilevel regression model (research question #3). Likewise, it was estimated that 70 to 100 primary care practices per country was sufficient for studying the relationships between primary care practice characteristics and PREMs/PROMs (research question #4). This estimation is aligned with the rule of thumb supported by literature of ten observations per parameter, adjusted for multilevel models, which suggests that an average of 70 practices per country is required. Finally, given the 19 participating countries it is determined that there is only enough statistical power to study the effect of one healthcare system characteristic on PREMs/PROMs at a time (research question #5).

Box 7.4. Summary of sample size calculation

Sample size calculation focuses on securing 1) outcome reliability, and 2) statistical power to answer the main research questions.

In a two-step approach, the first step calculates the optimal sample to achieve outcome reliability. The second step tests the sample size obtained in step one or the field trial data, analytically or conceptually, for sufficient statistical power to answer PaRIS' main research questions.

Results of sample size calculation

The number of primary care practices to be sampled in a country depends on the number of eligible primary care practices in the country:

- For countries with at least 1 000 eligible primary care practices, the minimum number of **participating practices is set at 100.**
- For countries with fewer than 1 000 eligible primary care practices, the **target number of participating practices is set at 75**, or as much as possible in case there are fewer than 75 primary care practices in a country.

A minimum of **75 patients of each participating primary care practice** should participate, i.e. complete the patient questionnaire. This number is the same for all countries.

7.4.2. Sampling frame for primary care practices

Sampling frames in each country were defined by the National Project Managers (NPM) based on available information, the sampling goal and the expected response rate. Expected response rates were informed by the experiences with the Field Trial. NPMs identified sampling frames from available data sources and assessed their quality using the following criteria:

- **Coverage**: The sampling frame had a wide and if possible complete information of the country's population of primary care practices.
- **Selection bias**: Certain groups of primary care practices may not be covered in the data source, hence excluded from the sampling frame. If such "exclusions" were considerable, additional sampling procedures were applied.
- **Accessibility:** Access to required information may depend on legal, administrative, financial or procedural requirements, and whether such data is in digital or paper form.

- **Completeness:** This refers to the comprehensiveness of the information provided to define the sampling frame. It relates to the data source being up-to-date, and whether it provides the required information needed to assess representativeness of samples and response.

The data needed to define the sampling frame contained contact details of primary care practices and variables that allowed ex-post assessments of the representativeness of the sample. This includes, among others, practice size and location (urban or rural).

7.4.3. Sampling frame for patients

The sampling frame for patients was obtained from either centralised data sources or from the patient lists of participating practices. For countries using centralised sources, an identification variable enabling the link between patients and their main primary care practice was used for defining the patient sampling frame. The size of the patient sampling frame per primary care practice was calculated by the NPM by dividing the sampling goal (75) by the expected response rate.

Criteria that NPMs used to assess potential sampling frames were similar to those for primary care practices: coverage, potential selection bias, accessibility of data and completeness. Sampling files contained the contact details for the sampled patients. In addition, variables that allowed assessment of the ex-post representativeness of the patients responding to the survey (mainly age and gender) were included. Contact information of either practices or patients was solely used by the national project management team to invite patients and were never shared with the OECD or the PaRIS Consortium partners.

7.4.4. Sampling method

In most countries, the PaRIS sampling strategy followed a two-stage approach: first, primary care practices were sampled and recruited, followed by the sampling (and later recruitment) of their patients. This two-stage method responded to the reliance on participating practices collaboration to recruit patients. The extent of the practice involvement varied across countries – from full responsibility for sampling and recruitment of patients, to shared responsibilities with the National Project Managers team, or, in some cases, practices merely consenting to the sampling and recruitment of their patients. In three countries, France, Norway and Wales, practices were not involved in the sampling of patients. In France, for example, practices were sampled first, then patients were sampled from the list of patients declaring one of the participating practices as their treating physician.

National Project Managers were advised and supported to use a probability sampling method in both stages, to ensure that each practice and patient had an equal (or determined) chance of selection through randomisation. The approach aimed to enhance the representativeness of the sample, which could be further refined by stratification or weighting. A census approach (inviting all eligible practices) was a good alternative approach, particularly in smaller countries, as this also ensured an equal chance of selection in the eligible population. For practical reasons and in particular due to differences in the availability and structure of sampling frames, sampling approaches sometimes had to be adapted to local circumstances in participating countries. The OECD and the PaRIS Consortium supported National Project Managers to create ad hoc sampling designs so that minimum standards for comparability were met. The implementation design for each country is detailed in the next section.

7.5. Implementation of PaRIS

7.5.1. Sampling design in participating countries

The sampling methods for both patients and practices varied according to the structure and capabilities of each country's national healthcare system. Table 7.7 provides an overview of the implementation strategies used by participating countries.

A probability sampling approach was used for practices in 11 countries, employing either simple random selection or stratified random sampling from nation-wide databases including the entire eligible population. For sampling patients, 15 countries adopted probability sampling, with four using stratified random sampling and the remaining employing a simple random selection.

Five countries implemented a census approach for sampling practices, while two applied this method for sampling patients. The census approach involved inviting all eligible practices or patients in the sampling frame that meet the selection criteria to participate. Most countries using this method verified the representativeness of their primary care practice samples by comparing key metrics such as patient panel size, geographical region, and rural/urban distribution with the overall sampling frame.

Two countries opted for a convenience sample of practices. In these instances, National Project Managers invited a broad range of practices to participate, ensuring good representation of the types and geographic distribution of primary care in the assessment areas. The United States followed a distinct approach, using a pre-existing sample of patients from the Medicare Current Beneficiary Survey (MCBS) for the PaRIS sample. The data from the United States does not include practice level data. The MCBS employs a three-stage cluster sample design and the sample included in the survey is representative for people 65 years and older nationwide.

Australia

Practices: All accredited practices using the national Electronic Health Record system were invited to participate (Census approach). The validity of the final sample was checked comparing practice size and rural/urban status to the sampling frame. **Patients:** Practices were given the option of inviting all their eligible patients to participate or taking a random sample. Invitations were sent by staff members of the practice or by the National Project Manager team. Random sampling support was provided for practices that preferred not to survey all their patients.

Limitations: The sample of practices is limited to those who are accredited and had an electronic health record system. Moreover, some smaller deviations included a higher proportion of females than in the underlying population and a slightly lower share of people in major cities and higher share in regional/rural/remote areas. The sample of completed surveys also did not include any patients from Western Australia or the Northern Territory.

Belgium

Practices: Practices were identified through the National Institute for Health and Disability Insurance and contacted via the "eHealthbox" platform. All practices with more than 500 services a year were invited (census approach). **Patients:** Eligible patients were sampled with simple random selection from the medical record systems of participating practices.

Limitations: Numerous primary care practices in densely populated areas declined participation. This resulted in lower-than-expected response rates for practices.

Canada

Practices: Canada used a convenience sampling approach, where a variety of healthcare practices groups were invited by province. Groups corresponded to practice-based research and learning networks, the College of Family Physicians, academic researchers, and the Canadian Primary Care Sentinel Surveillance Network. This was complemented by invitations to individual family physicians and nurse practitioners. **Patients:** For patients, Canada applied a census approach of the eligible patients registered in participating practices.

Limitations: A convenience sample of practices was the only feasible approach for Canada. The coverage of the convenience sample is unknown, as practices information are managed at provincial and not federal level.

Czechia

Practices: In Czechia, eligible practices were randomly selected from the national registry of primary care practices, focusing on practices with 900 or more registered patients. **Patients:** A simple random selection made by the Institute of Health Information and Statistics from the medical record systems of participating practices was utilised to sample eligible patients.

France

Practices: Primary care practices were randomly selected from the national directory of healthcare professionals, focusing on those with 200 or more registered patients. **Patients:** France applied a random sampling approach, stratified by age group and gender. The sampling frame for patients was drawn from the list of patients that declared one of the participating practices as their “treating physician” (médecin traitant) provided by the Health Insurance System (CNAM). This list was extracted from the *patientèle médecin traitant inter-régime*, the centralised register that is used for reimbursements. The contact information of sampled eligible patients was later obtained from the national institute of statistics (INSEE).

Limitations: For technical reasons, the eligibility criteria related to eligible patients having at least one primary care practice visit in the last six months was modified to “at least one visit to the patient’s treating physician in the last six months”. With the modified criteria, the sampling frame for patients comprehended the entire underlying population. Nevertheless, with the original criteria, it is estimated that 77% of eligible patients are represented in the sampling frame.

Table 7.7. Implementation of PaRIS in participating countries

Country	Collection Methods (patients)	Languages	Source for sampling frame		Sampling methods	
			Primary care practices	Patients	Primary care practices	Patients
Australia	Online, paper	English, Arabic, Chinese[1]	Accredited and with electronic health record system.	Registry of patients of participating practices.	Census approach	Probability sampling /Census approach
Belgium	Online, paper	French, Dutch, Italian, English, Spanish, Arabic, Turkish[2]	National Institute for Health and disability insurance	Registry of patients of participating practices	Census approach	Probability sampling
Canada	Online	English, French	Groups of practices by province	Registry of patients of participating practices	Convenience sampling	Census approach
Czechia	Online, paper	Czech	National registry of healthcare providers	Registry of patients of participating practices	Probability sampling	Probability sampling
France	Online, paper, telephone	French	National directory of healthcare professionals	Health insurance registry	Probability sampling	Probability sampling

Country	Collection Methods (patients)	Languages	Source for sampling frame		Sampling methods	
			Primary care practices	Patients	Primary care practices	Patients
Greece	Online, paper	Greek	IDIKA SA – healthcare provider dataset	IDIKA SA – patient dataset	Probability sampling	Probability sampling
Iceland	Online	Icelandic	National registry of healthcare providers	Registry of patients of participating practices	Census approach	Probability sampling
Italy	Online	Italian	Contact list of eligible practices of the Tuscany, Veneto and the AUSL of Bologna	Regional information system of outpatient services	Convenience sampling	Census approach
Netherlands	Online, paper	Dutch, English	Calculus healthcare provider dataset	Calculus patient dataset	Census approach	Probability sampling
Norway	Online, paper	Norwegian, Nynorsk, English	National municipality healthcare provider registry	National patient registry	Probability sampling	Probability sampling
Luxembourg	Online, paper	French, German, English	Primary Care Registration Platform	Registry of patients of participating practices	Probability sampling	Probability sampling
Portugal	Online, paper	Portuguese, English	National primary healthcare provider registry	Registry of patients of participating practices	Probability sampling	Probability sampling
Romania	Online, paper	Romanian	National and District Health Insurance General Practitioner registry	National and District Health Insurance patient registry	Probability sampling	Probability sampling
Saudi Arabia	Telephone	Arabic, English	Registries of the Ministry of Health, Defence and publicly available information	Patient records from the Directorate of Primary Care, MoH. and registries of participating practices	Probability sampling	Consecutive sampling with randomisation
Slovenia	Online, paper	Slovenian	Registry of family physicians at the National Health Insurance Institute	Registry of patients of participating practices	Census approach	Probability sampling
Spain	Telephone, online	Spanish, Catalan, Galician, Basque	Primary Care Information System	National Health Card Database	Probability sampling	Probability sampling
Switzerland	Online, paper	German, Italian, French	National healthcare provider registry	Patients visiting participating practices	Probability sampling + convenience	Continuous sampling
United States	Face-to-face, telephone	English, Spanish	None	Medicare Current Beneficiary Survey (>65)	N/A	Probability sampling
Wales	Online, paper, telephone	English, Welsh, Polish, Arabic, Bengali, Ukrainian	Administrative data for analysis and performance assessment of primary care practices	Welsh Demographic Service and Master Patient Index.	Probability sampling	Probability sampling

1. Also available in Greek, Italian, Vietnamese, Punjabi.
2. Also available in German.
Source: PaRIS Sampling reports.

Greece

Practices: Greece employed a random sampling approach for practices. The sampling frame was provided by the public company specializing in IT for social security and health services (IDIKA SA). This sampling frame represents only publicly funded primary care practices and patients. **Patients:** Eligible patients were sampled with simple random selection from the patient registry of the public IT company (IDIKA SA) filtered by participating practices.

Limitations: The sampling frame in Greece comprehends the patient and practices of the public healthcare system.

Iceland

Practices: All eligible practices from the national registry of healthcare providers were invited (Census approach). **Patients:** Eligible patients were drawn following a simple random selection from the medical record systems of participating practices.

Italy

Practices: Healthcare organisations, regions, or supportive organisations supplied contact information for primary care practices. Invited practices were selected based on a stratified approach on functional or territorial aggregation of all eligible practices of the Tuscany, Veneto and the *Aziende Unità Sanitarie Locali* of Bologna (region of Emilia Romagna). In time, eligible practices were medical practitioners who provide primary care services in functional or territorial aggregations, primary care practices which operate at regional and local levels, and those who provide ambulatory generalist care, including services addressing chronic disease management. **Patients:** All eligible patients from the regional information system of outpatient specialist services that were linked to a participating practice were invited to participate (Census approach).

Limitations: In Italy, patients were selected and contacted based on the list of ambulatory specialist visits and later linked to their primary care practice. For this reason, they are expected to have higher risk levels than the patient sample of other countries.

The Netherlands

Practices: A census approach was implemented to invite all eligible practices from the registry of primary care practices of a specialised IT management institution (Calculus), managing data for approximately 74% of eligible practices in the country. **Patients:** Eligible patients were sampled with simple random selection from the patient registry of the same third party (Calculus) filtered by participating practices consenting to sampling their patients.

Limitations: The sampling frame included only 74% of eligible practices in the country. Nevertheless, there are no indications that the group of practices affiliated with Calculus deviates from the practices not affiliated with Calculus. Selection bias is therefore unlikely.

Norway

Practices: A random selection of eligible practices (individual general practitioners in the Norwegian case) was drawn from the national municipality registry, representing all eligible practices in the country. **Patients:** Simple random sampling from eligible patients that were linked to participating practices were drawn from the national patient registry.

Luxembourg

Practices: All registered general practitioners in the “Primary Care Registration Platform” were invited to participate (census approach). **Patients:** Simple random selection from the medical record system of participating practices. The sample only considers residents of Luxembourg, excluding daily commuters.

Portugal

Practices: Portugal employed a stratified random sampling approach, stratified by regions and types of primary healthcare practice. A proportional number of units from each region-type of practice stratum was invited to participate. The sampling frame corresponded to the national primary care practice registry.

Patients: For patients, Portugal performed stratified random sampling by age group and gender. The sampling frame corresponded to the patient registry of participating practices.

Limitations: The Autonomous Regions of Azores and Madeira are not included.

Romania

Practices: Practices were randomly selected from the Romanian National and District Health Insurance registry of general practitioners. **Patients:** Random sample drawn from the Romanian National and District Health Insurance registry, filtered by participating practices.

Limitations: Challenges in the recruitment of patients lead to a smaller than expected sample size.

Saudi Arabia

Practices: Stratified random sampling based on 22 health regions and proportional sectors (Ministry of health 60%, other public 15%, private 25%). The sample of practices related to the Ministry of Health was drawn from the registry of healthcare providers of the Directorate of Primary Care at the Ministry of Health. Contact information of practices related to the Ministry of Defence (other public) was provided directly by the Ministry of Defence. The sample of private practices was drawn from public contact information. **Patients:** Patients were consecutively invited by phone, until the required number per practice was reached. The per-practice calling lists were a random sample stratified by age and recent practice visits. The calling order for the consecutive approach was also randomised. The sample was drawn from the patient registry of the Directorate of Primary Care of the Ministry of Health, the patient registry of participating private practices and the patient registry of the healthcare providers of the Ministry of Defence.

Slovenia

Practices: Slovenia invited all primary care practices from the freely available registry of family physicians at the National Health Insurance Institute (Census approach). **Patients:** Simple random selection from the medical record systems of participating practices.

Spain

Practices: Stratified random sampling with probability proportional to practice size, using the National primary healthcare information system. **Patients:** Random sampling from the patient registry by region of the National Health Card Database.

Switzerland

Practices: Simple random sampling from the MedReg national register of licensed medical professionals. An additional ten practices were added to the sample with a convenience approach. **Patients:** Continuous sampling approach inviting all patients who visited the participating practices during the 3-month data collection period.

Limitations: A subset of physicians who completed medical training before 1984 could be unrepresented in the sampling frame. Nevertheless, more than 90% of eligible professionals are represented in the sampling frame. In addition to the randomly sampled practices, self-selected practices (10) were admitted to the sample upon their request to join. Continuous sampling of patients is different to a census approach in that invitations are subject to primary care visits, instead of a complete list of eligible visitors. This means that a patient’s likelihood to be sampled increases when he or she attends the practice more often.

United States

Practices: There is no data from primary care practices available for the United States. **Patients:** The sample source for PaRIS was the Medicare Current Beneficiary Survey (MCBS). The MCBS represents the Medicare population and is sponsored by the Centers for Medicare & Medicaid Services. Sampling in the MCBS follows a stratified random selection of participants according to their geographical area, age, sex and ethnicity. For the PaRIS sample, only patients living in a private household and over 65 years old were invited to participate.

Limitations: The sample of the United States is restricted to Medicare beneficiaries over 65 years old. While there are Medicare beneficiaries younger than 65 years old, these beneficiaries have a significant disability that would bias results. Moreover, MCBS uses weights to strengthen its validity. These weights are not used for PaRIS calculations.

Wales

Practices: Random sampling stratified at the Local Health Board Area level and by practice size (small, medium, large). The sample was drawn from the administrative dataset for analysis and performance assessment of primary care practices. **Patients:** Patient sample drawn from the Welsh Demographic Service. Sampling followed a random approach. A census approach was taken for the patients of small practices. The final sample of respondents was later validated against the sample frame on several characteristics.

7.5.2. Sample size in participating countries

Countries determined their sample size following the PaRIS guidelines, the conditions and characteristics of their health systems and their individual plans for analysis. Table 7.8 presents the final sampling goals and their compliance per participating country.

Several countries deviated from the optimal numbers described in the main survey design. Spain determined that 251 primary care practices were needed to enable cross-regional comparisons (Table 7.8). Iceland has 77 eligible primary care practices in the country (Spring of 2022) and aimed to recruit as many as possible. Luxembourg, Portugal, Slovenia and Wales had fewer than 1 000 total eligible practices in the country, hence their target was set at 75.

In the United States, the decentralised structure of healthcare creates variability and inconsistency across public and private systems that made a national sampling frame of primary care practices unfeasible. For this reason, the United States did not participate in the PaRIS primary care practice questionnaire.

Following the PaRIS design, the sampling goal for patients was set at 75 per participating practice. For the United States, the sampling goal of patients was set to the estimated number of eligible patients that had completed the MCBS Medical Provider Utilisation Questionnaire.

Although it did not achieve 100% of the target, the PaRIS sample stands as one of the largest, if not the largest, international surveys of patient-reported outcomes and experiences to date.

Table 7.8. PaRIS sample size per participating country

Fourteen countries achieved more than 80% of the target for practices and, on average, 88% of the patient sample was reached

	Primary care practices			Patients			
Country	Respondents used in analysis	Target	%	Respondents used in analysis	Target	%	Additional respondents not linked to a practice
Australia	56[1]	100	56%	2 392	7 500	32%	0
Belgium	83	100	83%	4 372	7 500	58%	205
Canada	65	100	65%	3 883	7 500	52%	4
Czechia	110	100	110%	4 136	7 500	55%	30
France	150	100	150%	12 242	7 500	163%	3 415
Greece	104	100	104%	2 173	7 500	29%	45
Iceland	36	34	106%	1 864	4 725	39%	833
Italy	113	100	113%	1 817	7 500	24%	2 295
Luxembourg	52	75	69%	1 590	5 625	28%	0
Netherlands	60	100	60%	4 851	7 500	65%	0
Norway	121	100	121%	8 684	7 500	116%	0
Portugal	91	75	121%	11 744	5 625	209%	595
Romania	128	100	128%	1 277	7 500	17%	1
Saudi Arabia	100	100	100%	7 579	7 500	101%	79
Slovenia	81	75	108%	3 240	5 625	58%	63
Spain	251	251	100%	19 067	7 500	254%	0
Switzerland	140[1]	100	140%	4 178	7 500	56%	0
United States				4 216	5 144	82%	0
Wales	75	75	100%	7 706	5 625	137%	0
Total	**1 816**	**1 785**	**102%**	**107 011**	**129 869**	**82%**	**7 565**
Average	**101**	**99**	**102%**	**5 632**	**6 835**	**82%**	**398**

1. Some practices did not completed the questionnaire, but their patients are included.
Source: PaRIS Country Roadmaps and OECD PaRIS 2024 Database.

7.5.3. Reliability and power in the main survey

The power of PaRIS

PaRIS data showed to have sufficient power to answer the project main research questions (Section 7.2.2). For research questions #1 and #2, PaRIS required sufficient participation from practices and patients to enable the identification of groups of countries where patients' reported care experiences and/or outcomes were significantly higher and lower than the overall average. The survey was not designed to detect significant differences between all pairs of countries. Three statistically significant groups of countries were detected for all PaRIS ten key indicators. Annex 7.A presents this analysis.

Research question #3 relates to the statistical power of the sample to estimate the effects of multiple independent patient level variables simultaneously in a multilevel regression model. Considering the high number of patients that participated in PaRIS, the power of the survey in this regard was never in question. Furthermore, since outcome reliability poses a more critical limitation in such analyses, it is assumed that sufficiently reliable outcomes inherently ensure adequate power to address research question #3.

Multilevel analyses were conducted to understand the design effect (clustering of patients in practices and countries) in the power analysis. The stronger the clustering, the larger the sample of patients needed to be, compared with a simple random sample. The formula for the design effect "D" is:

$$D = 1 + (\bar{n}_j - 1)\rho_I$$

where $\bar{n}_j$ is the average number of patients per cluster. In PaRIS, clusters are countries and practices. ρ_I is the intraclass correlation (ICC)., i.e. the proportion of variance that is accounted for by the cluster level. If there is no clustering of the outcome variable within countries, the design effect is zero and the number of patients needed is equal to that number in a simple random sample. The higher the ICC, the more extra patients had to be sampled compared to a simple random sample. Table 7.9 contains the results of this analysis.

The ICCs in Table 7.9 show that the proportion of variance that is accounted for by the country level ranges between less than 3% (well-being as assessed by WHO-5 Well-being scale) and 25% (experienced care co-ordination). This means that, in particular for the P3CEQ scales “experienced care co-ordination” and “experienced people-centred care”, there is substantial clustering of patients’ experiences within countries. This also holds for the extent to which patients work together with their healthcare professionals – or rely on them – in managing their health.

In general, there is little clustering of patient data at practice level. The high variability of the number of participating practices per country, and the number of patients per practice, has an effect on the power of the survey to assess research question #4 (relationships between characteristics of primary care practices and PREMs/PROMs overall).

This being said, several practice-level characteristics were found significant in multilevel regressions. For example, having medical records available when patients are seen had a significant effect on PROMIS physical health. In the same line, self-management support by providing written information, written instructions for care management, and scheduling appointment for more than 15 minutes had a significant effect on patient centredness and co-ordination (Chapter 4). We analysed the robustness of these effects by simulating different datasets with similar characteristics in terms of the number countries, the average number of practices per country and the average number of patients per practice. We found that the significant effects found in the main analysis are robust to random samples with similar characteristics. This analysis is presented in Annex 7.A.

At the same time, practice-level characteristics such as the role of primary care staff has shown to be significant for care experiences and outcomes in literature (Davis et al., 2021[21]), but this effect was not found in the analysis of PaRIS. We tested the robustness of the non-significance by simulating a larger number of average practices per country than those in PaRIS. The results show that in simulated samples with the optimal average number of practices per country by design (75), the effect of the role of primary care staff in PaRIS was not significant in more than 65% of the simulated runs. This suggests that the lack of a significant effect may be attributed to factors such as the nature of the variable, the model used, or the specification of staff roles, rather than a suboptimal sample size.

Finally, system-level characteristics were not assessed in this report. It was expected that the survey had sufficient power to assess one country level characteristic at a time, given the 19 participating countries.

Reliability of PaRIS instruments

A prerequisite for all analyses is that the underlying constructs are reliably assessed. Because of the multilevel structure of the PaRIS data, the key indicators should not only be reliably assessed at the level of individual patients, but also at the country level. While PaRIS was not specifically designed for comparing practices (de Boer et al., 2022[2]), reliability at the practice level was also assessed.

The reliability of a construct depends on measurement error, the number of items, the number of patients per practice and the variances at practice and country level. The reliability coefficient in a multilevel model is a measure of internal consistency comparable to Cronbach’s alpha in a single level model. Reliability was calculated using the reliability measure for multilevel models (Raudenbush, 2003[18]; Leyland and Groenewegen, 2020[19]). Annex 7.A presents the reliability calculations.

Table 7.9 contains the results of the multilevel reliability analyses of PaRIS. The table includes the results of five key indicators, i.e. those that have been assessed with multiple items. In addition, the table includes three other multi-item constructs, which aimed to assess patients' health and care capabilities.

Table 7.9. PaRIS sample size per participating country

Reliability analysis of PaRIS instruments

		Clustering		Reliability (multi-level)			Reliability (single level; Cronbach's alpha)
	N. of items	ICC country (%)	ICC practice (%)	Country level	Practice level	Patient level	Country level
PaRIS key indicators							
PROMs							
Physical health (PH)	4	5.30	3.53	0.77	0.68	0.75	0.77
Mental health (MH)	4	10.69	2.21	0.88	0.60	0.77	0.79
Well-Being (WB)	5	2.91	2.06	0.66	0.59	0.88	0.89
PREMs							
Experienced care co-ordination	5	19.08	4.64	0.91	0.67	0.60	0.67
Experienced people-centred care	8	24.97	3.85	0.94	0.68	0.70	0.75
Other multiple item constructs							
Active engagement (PNS1)	4	4.14	1.51	0.73	0.48	0.73	0.73
Working together with care professionals (PNS2)	4	20.47	2.42	0.93	0.59	0.61	0.68
Health literacy (PNS3rev)	2	14.32	4.27	0.90	0.72	0.71	0.74

Note: ICC: Intraclass correlations. The ICC for the reliability analysis is calculated using equal weights for all scale items and using the null model (not standardised) of the whole sample. For these reasons, ICCs in the reliability analysis differ from those presented in Chapter 2.
Source: PaRIS Consortium based on OECD PaRIS 2024 Database.

Table 7.9 shows that almost all constructs are sufficiently reliable (coefficient ≥.70) at country level. The only exception is the WHO-5 Well-being scale (.66), which is nevertheless substantially more reliably assessed at country level in the main survey than it was in the field trial (.55) (van den Berg et al., 2024[8]), due to the higher number of participating patients in the main survey.

The reliability of constructs at the practice level is insufficient for several countries, likely due to the low number of participating patients per practice in many countries. Annex 7.A illustrates that practice-level reliability is typically adequate in countries where the average number of participating patients per practice meets the recommended threshold of 75. While higher reliability at the practice level would have been ideal, it is less critical for PaRIS, as the survey's primary objective is not to analyse differences in patients' care experiences and outcomes between practices within countries.

7.5.4. Recruitment of patients and primary care practices

National Project Managers collaborated with national stakeholders and the PaRIS Consortium to create a communication strategy for the recruitment process. These strategies were customised to align with the specific needs and preferences of each country, taking into account local administrative structures, resources and communication channels.

Primary care practices were recruited between January 2023 (Luxembourg and Spain) and April 2024 (Switzerland). The recruitment period lasted, on average, 11.8 weeks per country being the longest in Portugal (20 weeks) and the shortest in Italy (4 weeks).

Recruitment of patients started in July 2023 in Norway and ended in April 2024 in Switzerland. The average recruitment period per country lasted 13 weeks and it was longest in Luxembourg (27 weeks) and shortest in the United States (5 weeks).

The communication strategy among participating countries focused on engaging stakeholders –patients, primary care practices, and other related groups – through a variety of channels to encourage awareness, participation, and support. Common communication channels included informational materials like posters and brochures, digital outreach such as emails and social media, and stakeholder-specific methods like advisory boards and steering groups for direct feedback and involvement (Kendir et al., 2023[9]).

Countries found that direct, dialogue-based channels, including advisory groups and structured consultations, were most effective in building a sense of involvement and ownership, particularly among professionals. Passive communication, such as distributing informational materials, while essential for raising initial awareness, was less effective at generating active engagement and buy-in (Kendir et al., 2023[9]).

7.6. Response rates and paradata

Countries employed several strategies for maximising response rates among invited patients and primary care practices. The Survey Operations Manual provided detailed information on how National Project Managers and participating practices could invite sampled patients and facilitate access to the survey. Examples of the different characteristics of recruitment strategies are; the content of the invitation letter and reminders, the sender of the invitation, the combination of several communication channels and provision of paper-and-pencil alternative. A detailed description of engagement and recruitment strategies was published in a dedicated Health Working Paper (Kendir et al., 2023[9]). Table 7.10 presents response rates for practices and patients of participating countries.

Table 7.10. Practice and patient response rates

	Australia	Belgium	Canada	Czechia	France	Greece	Iceland	Italy	Luxembourg	Netherlands	Norway	Portugal	Romania	Saudi Arabia	Slovenia	Spain	Switzerland	United States	Wales
Practices	**<5%**	**<5%**		11%	56%	35%	57%		14%	**<5%**	50%	61%	26%	28%	**9%**	86%	14%	NA	37%
Patients	**8%**	31%		16%	42%	**7%**	25%	25%	27%	17%	44%	11%	**6%**	24%	15%	47%	19%	42%	21%

Note: Countries with missing response rates used a convenience sample or were not able to produce reliable data for calculation.

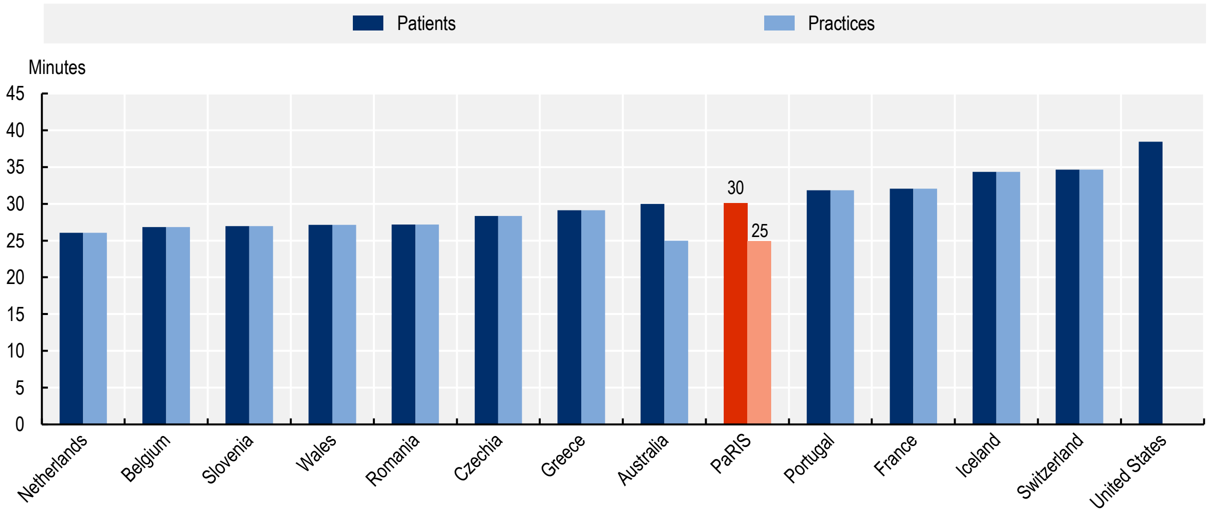
The patient response rates for PaRIS vary significantly but are comparable to those observed in other recent international surveys involving patient-level data. For instance, the People's Voice Survey (Kruk et al., 2024[22]) recorded response rates from 2% to 84% across 15 participating countries. The Commonwealth Fund's 2023 International Health Policy Survey (Gumas et al, 2024[23]) had response rates between 6% and 49% among 10 countries. In contrast, the third wave of the European Health Interview Survey (Eurostat, 2024[24]) reported larger response rates, ranging from 25% to 88%. Nevertheless, this survey is focused on the general population, a less restrictive approach to the primary care service users targeted in PaRIS. The implications of response rates falling below 10% are further explored in section 7.7.6.

7.6.1. Response time and completion rates

The average survey completion time for patients across countries is approximately 30.2 minutes, with a range from a minimum of 26.0 minutes in the Netherlands to a maximum of 38.4 minutes in the United States. For practices, the average survey completion time is about 25.3 minutes, with times spanning from a minimum of 19.4 minutes in Greece to a maximum of 32.8 minutes in Slovenia (Figure 7.4).

Figure 7.4. The survey took on average 30 minutes for patients and 25 minutes for practices to complete

Average response time in minutes

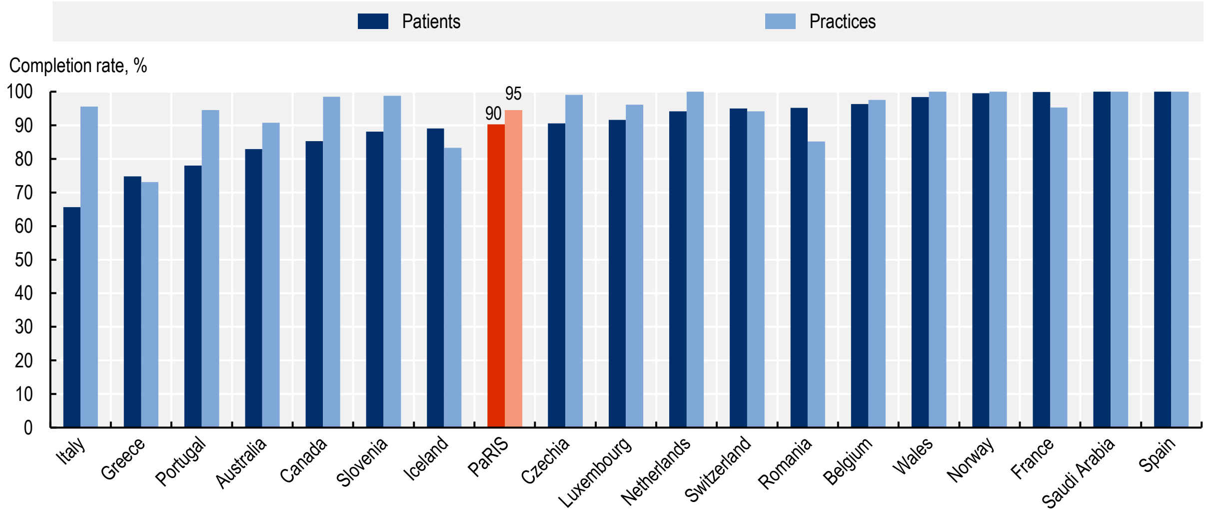


Note: Only surveys that were completed online recorded response time.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/uofhj9

Completion rates refers to the proportion of respondents that completed all questions, out of all started questionnaires. The highest completion rates are seen in France, Saudi Arabia, Spain and Wales, with 100% or close to 100% completion for both patients and practices. The lowest patient completion rate is in Italy, at 66%, while practice completion in Italy is higher at 96%. Greece also shows a notable gap with other countries, with patient completion at 75% and practice completion of 72%.

Figure 7.5. Once started, most surveys were completed in all countries



Note: It was not possible to compute completion rates in the United States.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/dje0qg

7.6.2. Data collection modes

PaRIS employed four modes of data collection: online, paper-based, telephone, and assisted interviews (CAPI/CATI). Countries predominantly relied on a single mode, with minimal within-country variation in modes used. Analysis revealed that collection mode had a small but significant effect in the models for the calculation of the PaRIS ten key indicators. For example, telephone surveys were associated with higher estimates on seven of the ten key indicators, while paper surveys resulted in lower estimates for most indicators. Despite these findings, collection modes accounted for less than 1% of total outcome variance, and their inclusion in multilevel models had negligible effects on country-level estimates. This suggests that, given the entanglement of country-specific effects and collection modes, the survey's multilevel structure effectively integrates collection mode into the broader country-specific effects.

In the same line, although including data collection mode improved the model fit, its practical impact on country-level comparisons was minimal. Adjusting for collection modes slightly reduced country-level variance but did not significantly alter estimates for PREMs and PROMs. Further details are provided in the annex (Annex 7.C), including specific mode distributions per country and their effects in country estimates of PREMs and PROMs.

7.7. Data analysis and validation

7.7.1. Sample characteristics

PaRIS provides data from a diverse sample across 19 countries, each exhibiting distinct socio-economic and health profiles. This diversity allows for a comprehensive analysis of patient-reported outcomes and experiences (PROMs and PREMs) within various health system contexts. The guiding principle in analysing PaRIS data is that health systems should adapt to the unique characteristics of their populations to enhance patient care and experience. This approach is supported by the results of a case mix analysis, that indicated minimal impact of covariates on PROMs and PREMs estimates, suggesting that simpler, more parsimonious models are feasible and appropriate for reporting. (See Section 7.7.4 for more details on the case mix analysis).

However, understanding the sample composition remains critical, as although these variables might not necessarily alter PROMs and PREMs in the analysis, they are essential for healthcare systems to consider for optimising performance. Moreover, the influence of certain demographic and health variables on health outcomes is well-documented, reinforcing the idea that these characteristics should be factored in the explanation of country estimates of PREMS and PROMS. Annex 7.B presents an overview of key demographic and health indicators for the sample across participating countries.

The PaRIS sample highlights distinct demographic and health characteristics across participating countries, illustrating the diversity in population profiles and health challenges. The US sample skews older, reflected in notably higher rates of hypertension and arthritis. In contrast, Saudi Arabia's sample is younger, with a significant concentration in the 45-54 age group and a lower representation in the 65-74 age bracket, alongside an elevated prevalence of diabetes. Educational disparities are apparent, with Czechia showing a significantly higher proportion of respondents with lower education levels and a lower representation in mid-level education, while Norway stands out for its higher proportion of respondents with high education. Italy's sample has a notably lower proportion in the high education category and a higher diabetes rate, with Romania also showing elevated diabetes rates. Additionally, Romania presents a higher prevalence of cardiovascular conditions, and Australia has higher rates of asthma/COPD. Slovenia's sample diverges in gender composition, with a lower proportion of male respondents. These varied characteristics across countries underscore the importance of contextualising patient-reported outcomes within each country's unique demographic and health profile.

7.7.2. Standard population

To facilitate interpretation of the PaRIS results and increase their comparability across countries, all patient-reported indicators have been estimated for a reference population of patients with a predefined age and sex distribution, i.e. the PaRIS standard population.

The PaRIS standard population was constructed using data on the patient population eligible for PaRIS in OECD member countries that participated in PaRIS. To be eligible for PaRIS, patients must be aged 45 or older and have been in contact with a primary care practice for their own health within the last six months. The population eligible for the survey is thus a specific selection of the general population.

Standardisation was based on age and sex (standardisation variables). To note that while the survey asks about self-reported gender ("*Which of the following best describes you – Female, Male, LEAVE BLANK, Other, prefer not to say"*), the standard population is based on sex, as registered in available information sources.

Given the specificities of the patient target group, population data about the age and sex distribution of eligible patients was not readily available in most countries. Therefore, National Project Managers estimated the age and sex distribution of the eligible patient population in their countries based on available information. Given that such information was often limited, age distribution in four categories was used.

Primarily, country-specific standard populations were defined using a combination of available data sources covering the entire population of eligible patients, such as regional or national population or patient registries. The reliability of these sources was assessed and graded by National Project Managers. Nevertheless, given the specificity of the eligible population, high quality information was not available for all participating countries. To address this challenge, country-specific standard populations were defined by applying the following rules:

- Level 1: If reliable and up-to-date data for the total eligible patient population were available for one or both standardisation variables, this data source was used to define the country-specific standard population.
- Level 2: If this data was unavailable, outdated, or of low quality, the standard population was based on the age and sex distribution of the patients in the total sampling frame, unless substantial selection bias was identified.
- Level 3: If data on the total population or the sampling frame was missing or unusable, the standard population was based on the age and sex distribution of the patients in the total sample, unless substantial selection bias was reported.
- Level 4: If reliable, recent data for one or both standardisation variables was unavailable for the total population, sampling frame, or sample, the standard population was based on the self-reported age and gender of survey respondents in the country.

Table 7.11 shows the country-specific and the OECD-PaRIS standard population.

Table 7.11. OECD PaRIS standard population and country-specific standard populations

Country	Age				Gender	
	45-54	55-64	65-74	75+	Women	Men
OECD – PaRIS standard population[1]	25%	28%	27%	20%	55%	45%
Australia	29%	28%	24%	19%	53%	47%
Belgium	24%	32%	30%	14%	55%	45%
Canada	22%	29%	32%	17%	64%	36%
Czechia	32%	25%	25%	18%	53%	47%
France	23%	27%	26%	24%	56%	44%
Greece	29%	27%	22%	22%	53%	47%
Iceland	20%	33%	32%	15%	54%	46%
Italy	18%	31%	32%	19%	49%	51%
Luxembourg	29%	30%	22%	19%	54%	46%
Netherlands	26%	27%	24%	22%	52%	48%
Norway	24%	27%	25%	24%	55%	45%
Portugal	28%	27%	23%	22%	55%	45%
Slovenia	29%	28%	24%	19%	52%	48%
Spain	28%	27%	22%	23%	59%	41%
Switzerland	19%	28%	29%	24%	51%	49%
United States	-	-	25%[2]	22%[2]	57%[3]	43%[3]
Wales	15%	27%	33%	25%	55%	45%

1. Based on the 17 participating OECD member countries.
2. Estimations based on the assumption that 53% of eligible population is younger than 65 (OECD standard population for the two age categories younger than 65 based on the 16 countries, thus excl. the United States, that have eligible populations aged 45 and older), thus that 47% will be aged 65 and over (within this 47% we used the proportion of the eligible US population provided by the NPM)
3. As provided by the US NPM for the eligible PaRIS population in the US Medicare Beneficiaries survey (aged 65 and older). It has not been corrected for the fact that this proportion was found in the eligible population aged 65 and older only.
Source: PaRIS Consortium based on PaRIS sampling reports.

The OECD PaRIS standard population was constructed based on the country-specific standard populations of the 17 participating OECD member countries, but all 19 participating countries were weighted to this standard population. An equal weigh was assigned to each country in the calculation, because the primary focus in PaRIS is on comparing countries and identifying good practices, rather than analysing a broader population or geographical region.

7.7.3. Standardised estimates

Country-level estimates (PREMS/PROMS) are directly derived from a multilevel regression model, explained in detail in Section 7.7.7. Country estimates are standardised by including a re-scaled version of age and gender as independent variables in the model. The re-scaling of the standardisation variables (age and gender) ensures consistency in comparison by creating estimates while simulating the OECD PaRIS standard population in all countries.

Similarly to other regression analysis, the intercept of the multilevel model is calculated when all independent variables are set to zero. As further explained in Section 7.7.7, the intercept of the multilevel model corresponds to the overall average of the estimated outcome in the survey, while accounting for the nested structure of the data. This means that adjustments to the coding (or rescaling) of independent variables affects the overall average of the estimated outcome. The process of rescaling the standardisation variables is set to define the overall average of the model when the standardisation variables are set to their re-scaled value, instead of zero (Groenewegen et al., 2024[7]). The re-scaling process follows four steps:

- Exclusion of Incomplete Cases: Cases without a valid response for the outcome variable are excluded. For those remaining, their distribution across age and gender variables is determined.
- Dummy variables for age and gender are created and incorporated as standardisation variables in the multilevel model (see Section 7.7.7).
- The original coding of these dummy variables is re-scaled to correct for any deviations between the observed distribution of age and sex among included cases and the standard distribution as defined by the OECD PaRIS standard population. The re-scaling follows the formula: original value – (value in standard population).
- Estimates for all outcomes are created using the re-scaled standardisation variables.

Box 7.5. Example of rescaling the values of the standardisation variable: Gender

Re-scaling gender

The PaRIS standard population determines that estimates should be calculated as if all countries had 55% of the population women and 45% men. To rescale the original coding for our “MALE” dichotomous variable (0=Female, 1=Male) we calculate: For males (MALE = 1) the value of the variable becomes 1-0.45= 0.55; for females (MALE=0), it becomes 0-0.45=-0.45. Similarly, for the “FEMALE” dichotomous variable values are: For males, 0-0.55 = -0.55; for females, 1-0.55 = 0.45.

Because of the dummy variable trap (multicollinearity between categorical options) only one of the rescaled variables (“FEMALE_standardised”) is used as a standardisation variable.

Quality checks

The set of six re-scaled variables (two for Gender, four for age) should add up to zero for each observation. This useful quality check helps in securing a correct calculation:

Observation	MALE	FEMALE	MALE_std	FEMALE_std
Patient1	1	0	0.55	-0.55
Patient2	0	1	-0.45	0.45

Source: Groenewegen, P. et al. (2024[7]), “Data analysis plan of the OECD PaRIS survey: leveraging a multi-level approach to analyse data collected from people living with chronic conditions and their primary care practices in 20 countries”, https://doi.org/10.1186/s13104-024-06815-7.

7.7.4. Case mix adjustment

In principle, PaRIS overall estimates are not case mix adjusted unless described otherwise. Countries may have more patients with specific characteristics than others, and when these characteristics relate to how countries or practices perform in the eyes of the patients, these differences could be considered as independent to the capacities and quality of the health system. On the other hand, it is possible that some countries or practices adapt better and succeed in providing better care to patients with specific characteristics. In this sense, there is a degree of uncertainty over the accountability of the healthcare system to influence the effect of variables affecting the interest outcomes. PaRIS takes an ambitious approach to this issue, asserting that health systems should strive to adapt as fully as possible to the needs and characteristics of their population. To reinforce this approach, potential case-mix adjusters were rigorously evaluated following (Groenewegen et al., 2023[25]).

Potential case-mix adjusters had to meet four criteria:

- The distribution of the variable differs substantially between units (countries, primary care practices).
- The variable (patient characteristic) is significantly related to the outcome variable (patient-reported care experience or outcome).
- The relationship between the potential case-mix adjuster and the outcome variable is similar for all units (countries, practices).
- Data quality for potential case-mix adjuster was high for all countries.

The first two criterion are straightforward. For a variable to be considered for case mixed adjustment there needs to be differences, and these differences should have an impact on the outcome. The third criterion is set to ensure that the influence of the characteristic is outside of the accountability of the health system. For example, if the relationship of the potential case-mix adjuster to the outcome differs from country to country, it would imply that patients with the specific characteristic at stake have better care experiences or outcomes in some countries or practices than in others, which might point to potential room for care improvement in weaker healthcare systems. Groenewegen and colleagues (Groenewegen et al., 2023[25]) provide guidance on how to examine whether a patient characteristic meets this criterion, and proposes a measure to decide whether observed differences between units are large enough to state that a certain variable does not meet this requirement. The method defines a random slope effect (difference in variance between the categories of the independent variable) lower than 25% of the total variance as the acceptable cut-off, regardless of statistical significance.

To ensure clarity in the final analytical models, potential case-mix adjusters were assessed only in relation to the ten PaRIS key indicators. Priority was given to patient characteristics that meet the case-mix adjustment criteria and are relevant to multiple key indicators, promoting a more consistent and harmonised approach.

After exploratory analysis of the first criterions (substantial differences in the distribution of the variable between units) the list of potential case mix adjusters included: Sociodemographic: Education level, income level, born in country of survey, and employment status; Health: Self-reported high blood pressure, cardiovascular disease, diabetes, arthritis, breathing condition, depression and cancer.

For the second and third criterion, multilevel regression analyses were carried out. As the criterion set by Groenewegen et al. had been designed for use with continuous dependent variables, testing for this criterion was done for the key indicators that were continuous (five of the ten key indicators).

Results showed that the second and third criterion did not set any further restrictions for including the selected characteristics as case-mix adjusters. All selected patient characteristics were significantly related to most of the ten key indicators. However, it was not found that the selected patient characteristics always related to the same key indicators; nor that there was a clear distinction between patient characteristics that related more to the selected PROMs than the PREMs, and vice versa. At the same time, the random slope effects of all selected patient characteristics were smaller than 25% of the total variance, both at country level and practice level, for all five key indicators that were continuous variables.

Nevertheless, except from education level, for other sociodemographic characteristics on the list (income, born in country of survey, urbanisation level, employment status) data were missing for one or more countries, because the question was not asked in the country or answering options in countries were merged or deviated from the original patient questionnaire.

Therefore, only education level and self-reported high blood pressure, cardiovascular disease, diabetes, arthritis, breathing condition, depression and cancer were tested as case-mixed adjusters. These variables were re-scaled before inclusion in multilevel models. The reason behind re-scaling is to define the model's intercept when case-mix variables are set to a determined level in the population, instead of 0, that would be unplausible (see Box 7.5 for details on the re-scaling). Because there is no determined standard population for the potential case-mix adjusters, the average of the per-country averages was used as the standard for re-scaling.

The effect of including case-mix variables into the estimation models was further explored in Chapter 2. Results of country estimates of PREMS and PROMS did not vary significantly, supporting the decision of not including case-mix variables by default, and continuing with more parsimonious models for the rest of the report unless indicated otherwise.

7.7.5. Missing values

In PaRIS, participating patients and primary care practices had the option to skip questions they preferred not to answer. As a result, the number of valid responses for each question in the patient and practice questionnaires may differ and often falls below the total number of respondents targeted by each question.

The term "missing values" refers to unanswered questions that respondents were expected to complete. Missing values are not inherently problematic if their number is low and if they are distributed randomly. However, non-random missing values can introduce bias in the dataset and affect analysis. A key distinction exists between missing values that are unrelated to any other observed characteristic of respondents (random) and those that correlate with specific characteristics, which may contribute to bias.

The PaRIS consortium conducted an initial review of missing values for each question in both the patient and practice questionnaires. Generally, missing values remained low (less than 10%) across all questions and countries, including questions tied to the PaRIS ten key indicators.

However, several countries showed substantial missing values (over 25% in some cases) for questions regarding specific patient characteristics, such as age, gender, income, and sexual orientation. In these instances, National Project Managers were requested to investigate their local databases (for countries using independent data management systems) and/or provide explanations. National Project Managers attributed these missing values to several factors, including the sensitivity of certain questions in their countries and the questionnaire's length. Two National Project Managers noted that all sociodemographic questions (except age) were placed at the end of the questionnaire, which likely contributed to missing responses when patients did not complete the survey. For example, for Italy, a notably high number of missing values appeared in the gender question.

Given that missing values were minimal for nearly all questions across all countries, any bias in outcomes due to missing responses was expected to be negligible. As a result, missing values were not imputed. Additionally, imputation methods have notable limitations, particularly when applied to non-random missing values. Imputation is suitable only for random missing values, as this enables the construction of a reliable prediction model based on available respondent data. In cases of non-random missing values, reliable prediction is not possible because the specific reason for the missingness remains unknown.

To maximise the total number of cases in the analysis and to ensure sufficient statistical power, observations with missing values were retained in the multilevel estimations. The following protocol was developed to handle these missing values:

- Cases with missing values on the dependent variable were excluded from the analysis.
- Cases with missing values on the independent variables (standardisation variables, predictor variables and/or case-mix adjusters) were not excluded. Instead, missing indicators were added as independent variables to the models (See Box 7.6).

Box 7.6. Including missing indicators in the analytical regression models

Missing indicators were constructed for each variable in the estimation models and included as additional independent variables. The missing indicators were coded 0 (valid answer) or 1 (missing answer). In some models, only one missing indicator was constructed, putting together several independent variables, with the values 0 (a valid answer on one or more of the variables) and 1 (missing values for all variables).

Missing indicator variables for all independent variables were included in the multilevel regression models. A significant effect of the missing indicator meant that missingness of the specific patient characteristic was not random. The direction of the regression coefficient of the missing indicator provided an indication of whether the potential bias in the predicted dependent variable was either an under- or overestimation of the outcome.

A more comprehensive review of the effects of missing indicators in the analytical models will be conducted at a later stage, along with further considerations for imputing missing values randomly.

7.7.6. Data validation

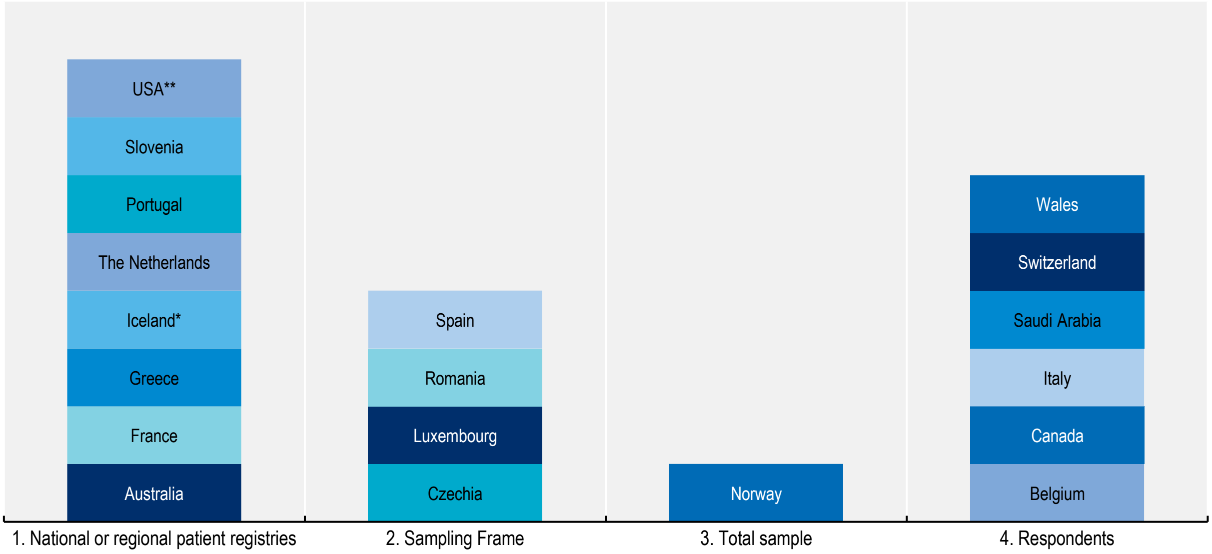
PaRIS aimed at being representative, in terms of age and sex, of the population 45 years and older of primary care service users living in the community (de Boer et al., 2022[2]). Representativeness of the samples under these parameters was validated using the available characterisation of the eligible population in each participating country.

Deviations from the original survey design were addressed with the standardisation mechanism detailed in Section 7.7.2. The extent to which applying the age and sex standardisation corrects country-level estimates for selection or non-response bias depends on the quality of the information that was used for constructing the country-specific standard populations.

Twelve out of the 19 participating countries provided data for the characterisation of the entirety of the eligible population (Level 1 standardisation) or the defined sampling frame (Level 2 standardisation). One country (Norway) was able to produce a characterisation of the entire sample of patients (Level 3 standardisation), while in the remaining six countries the sample could only be validated for respondents (Level 4 standardisation) (Figure 7.6).

Figure 7.6. Constructing the PaRIS standard population

Levels of reliability in the characterisation of eligible population



*Only for sex data. **While the characterisation in the United States covered the entire eligible population, age-sex stratification does not fully account for the US PaRIS sample design and thus may not fully correct for non-response or selection bias.
Source: PaRIS sampling reports.

Data collected in 14 out of the 19 countries in PaRIS were validated either by presenting no limitations in the implementation approach or by addressing potential sources of bias with standardisation. Table 7.12 summarises design limitations in participating countries and how they are addressed.

Table 7.12. Summary of limitations, validation mechanisms and their implications for representativeness

	Sources of potential bias	Correction	Implications for (age and sex) representativeness
Australia	The patient sample is drawn from practices that use an electronic health record system. Response rates lower than 10%.	Level 1 standardisation	Representative of the entire population of primary care service users 45 years and older
Belgium[1]	Response rates in practices lower than 10%.		The Belgian patient sample could not be validated against the eligible population.
Canada[1]	The patient sample is drawn with a census approach from practices of a convenience sample.		The Canadian patient sample could not be validated against the eligible population.
Czechia	No limitations / sources of potential bias	Level 2 standardisation	Representative of the entire population of primary care service users 45 years and older
France	Minor deviations to the eligibility criteria of patients	Level 1 standardisation	Representative of the entire population of primary care service users 45 years and older
Greece[2]	Patients are sampled from practices in the public health system. Response rates for patients lower than 10%.	Level 1 standardisation	Representative of the population of primary care service users 45 years and older in the public system
Iceland	Response rate for patients could not be calculated	Level 1 standardisation for sex, Level 4 for Age.	Representative of the entire population of primary care service users 45 years and older
Italy[1,2]	The patient sample is drawn with a census approach and a different eligibility criterion from practices of a convenience sample in Veneto, Tuscany and Emilia Romagna regions.		The Italian patient sample could not be validated against the eligible population and major differences in eligibility criteria of patients should be considered in the analysis.

	Sources of potential bias	Correction	Implications for (age and sex) representativeness
Luxembourg	No limitations / sources of potential bias	Level 2 standardisation	Representative of the entire population of primary care service users 45 years and older
Netherlands	The patient sample is drawn from practices in an IT network covering 74% of eligible practices. Response rates lower than 10%.	Level 1 standardisation	Representative of the entire population of primary care service users 45 years and older
Norway	No limitations / sources of potential bias	Level 3 standardisation	Representative of the entire population of primary care service users 45 years and older
Portugal	Exclusion of Azores and Madeira. Response rates for patients at 10%.	Level 1 standardisation	Representative of the entire population of primary care service users 45 years and older
Romania	Challenges in implementation resulted in lower-than-expected number of participating patients. Response rates for patients lower than 10%.	Level 2 standardisation	Representative of the entire population of primary care service users 45 years and older
Saudi Arabia[3]	No limitations / sources of potential bias.		Representative of the entire population of primary care service users 45 years and older
Slovenia	Response rates in practices lower than 10%.	Level 1 standardisation	Representative of the entire population of primary care service users 45 years and older
Spain	No limitations / sources of potential bias	Level 2 standardisation	Representative of the entire population of primary care service users 45 years and older
Switzerland[1]	The patient sample is drawn with a continuous sampling approach.		The Swiss patient sample could not be validated against the eligible population.
United States[2]	The patient sample is drawn from a parent sample representative of Medicare participants aged 65 and older	Level 1 standardisation	Data representative of Medicare beneficiaries over 65 years old. Major differences in eligibility criteria of patients should be considered in the analysis
Wales[3]	No limitations / sources of potential bias		Representative of the entire population of primary care service users 45 years and older

1. Validation of the sample was not possible, and the country presents sources of potential bias.
2. Major deviations from eligible population guidelines.
3. Validation of the sample was not possible, however, no basis for potential bias was detected.

Source: PaRIS sampling reports.

Three countries (Belgium, Canada, Switzerland) presented deviations that could not be addressed, or their samples validated. Two more countries (Italy and the United States) present major deviations in the eligibility criteria for patients. These deviations should be considered in the analysis and comparison of estimates for these two countries.

7.7.7. Estimation models

Multilevel analyses are advantageous when working with hierarchical data because they account for the nested structure, unlike traditional methods that assume observations are independent. Multilevel models quantify and account for the variation at the country and practice level. This approach improves the accuracy of estimates by considering variations both within and between clusters (Raudenbush and Bryk, 2002[26]). In PaRIS, clusters correspond to countries and primary care practices. The interclass-correlation (ICC) is a measure used in multilevel modelling to quantify the proportion of total variance in the outcome that is attributable to clustering within groups (e.g. practices or countries). It helps determine how much of the variability in the outcome is explained by group-level differences versus individual-level differences. With σ^2 being the variance at the different levels specified in the random effects of the multilevel model, the formula for the ICC at country level is:

$$ICC: \frac{\sigma^2_{Country}}{\sigma^2_{Country}+\sigma^2_{Practice}+\sigma^2_{Residual}}$$

PaRIS data has been analysed using three types of models: (1) to estimate the influence of background characteristics on outcomes and experiences at the patient level; (2) to assess the level and variation of selected outcomes and experiences across countries; and (3) to examine the level and variation of selected outcomes and experiences across countries while evaluating the effect of an independent variable within countries. All these models address the hierarchical structure of patient reported information by estimating the outcomes in a multilevel regression.

The specification and estimation method of each analysis vary according to the type of outcome, the type of analysis and the complexity of the specification. Models were estimated using MLwiN (Rasbash et al., 2005[27]) in Stata (*runmlwin*) (Leckie and Charlton, 2012[28]) or R (*r2mlwin*) (Zhang et al., 2016[29]). Models were estimated with linear restricted iterative least squares (RIGLS) for continuous outcomes, and logistic RIGLS, with Penalised quasi- likelihood linearisation (PQL) of the first order for dichotomous outcomes (Goldstein, 1989[30]). For some models, the primary specification could not be estimated. In these cases, an iterative least square (IGLS) (Goldstein, 1986[31]), or marginal quasi-likelihood linearisation (MQL) were used. Models used the entirety of the sample for the analysis in Chapter 2, and only patients with chronic conditions for the rest of the report (unless indicated otherwise).

Estimation models have been explained in detail in the PaRIS analysis plan (Groenewegen et al., 2024[7]). As follows we provide an overview of the three types of analysis in this report.

(1.) To estimate the influence of background characteristics over outcomes and experiences at patient level

This model responds to research questions #3, #4 and #5 (7.2.2). It is used for understanding the effect of sociodemographic characteristics over PROMS/PREMS in Chapter 5 (Inequalities), or primary care practice level characteristics in Chapter 4 (People-centredness). Variation in PROMs/PREMs by background characteristics was estimated with a multilevel regression model with random intercepts at the country and practice levels, and covariates (also known as “fixed effects” in multilevel lingo) at patient level. Multilevel models with random intercepts account for data hierarchies by allowing the intercepts to vary across clusters. The model assumes a common (“overall”) measure of the outcome, around which there is the average measure of each country and practice distributed normally. Further, the model assumes a common nature of the relationship of the independent variables with the outcome across clusters.

The sample size of participating patients is sufficient to allow for the simultaneous estimation of multiple patient-level independent variables. Since the analysis focuses on the coefficients of socio-demographic characteristics, using a standard population is not required. However, to facilitate comparability with other models in the report, standardisation variables are included as covariates in this analysis. Equation 2 describes the multilevel model for this analysis.

$$\begin{aligned} Y_{ijk} = \beta_0 &+ \beta_1 MALE\_std_{ijk} + \beta_2 AGE2\_std_{ijk} + \beta_3 AGE3\_std_{ijk} + \beta_4 AGE4\_std_{ijk} \\ &+ \beta_5 AGE\_missing_{ijk} + \beta_6 Gender\_missing_{ijk} + \beta_m X_{(m)ijk} + u_{0k} \\ &+ v_{0jk} + \epsilon_{ijk} \end{aligned}$$

Equation 2

Y_{ijk} is the outcome for patient *i* in country *k*, related to practice *j*. β_0 is the fixed intercept. β_{1-6} are the coefficients for the standardised male variable and age variables and the missingness variables explained in Section 7.7.5. u_{0k} is the random intercept for country *k*. v_{0jk} is the random intercept for practice j within country *k*. ϵ_{ijk} is the residual error term. β_m are the coefficients of the *m* independent variables for patient *i*, related to practice *j,* in country k. While background characteristics are specified at patient level, there is no restriction of this variables to be patient-level variables. Characteristics of the practice, or the health system can be included. In practice, these characteristics will be repeated for all the patients linked to that practice or in that country.

The purpose of Model (1.) is to examine the overall effect of background characteristics on PREMs and PROMs. To contextualise the relevance of the background characteristic of interest, measures of model fit are provided. These include the log-likelihood ratio and marginal pseudo-R^2, which offer insights into how well the model explains the variance in the outcomes and the contribution of the variables included.

- Likelihood Ratio: Compares the goodness-of-fit between two multilevel models (e.g. with and without a specific variable of interest). It consists of subtracting the deviance of the two models, and comparing it to half the p-value from chi-squared distribution. A significant likelihood ratio indicates that adding the variable improves the model fit. (Snijders and Bosker, 2012[32]).
- Marginal Pseudo-R^2: Quantifies the proportion of variance explained by the covariates (fixed effect) in the model. Consists of a proportion comparison of the total variance of the Null and interest models. It helps assess how much of the variability in the outcomes is attributed to the predictors, excluding random effects. (Nakagawa and Schielzeth, 2012[33]).

(2.) To estimate the level and variation of selected outcomes in and between countries

This model responds to research questions #1 and #2 (7.2.2). Model (2.) is similar to model one, with the difference that it is focused on estimating an overall measure of PREMS/PROMS by country for international comparisons, without the effect of background characteristics other than age and sex. Similarly to the analysis of model (1.), a multilevel model with random intercepts was used to estimate the level and the variation of outcomes in and between countries. However, in this case, other than the random intercepts, only the standardisation and missingness variables were included as independent variables (except for the standardised case-mix variables for the analysis of the effect of case-mix in Chapter 2). Equation 3 describes the multilevel model for this analysis.

$$\begin{aligned} Y_{ijk} = \beta_0 + \beta_1 MALE\_std_{ijk} + \beta_2 AGE2\_std_{ijk} + \beta_3 AGE3\_std_{ijk} + \beta_4 AGE4\_std_{ijk} \\ + \beta_5 AGE\_missing_{ijk} + \beta_6 Gender\_missing_{ijk} + u_{0k} + v_{0jk} + \epsilon_{ijk} \end{aligned}$$

Equation 3

Y_{ijk} is the outcome for patient *i* in country *k*, related to practice *j*. β_0 is the fixed intercept. β_{1-6} are the coefficients for the standardised male variable and age variables and the missingness variables explained in Section 7.7.5. u_{0k} is the random intercept for country *k*. v_{0jk} is the random intercept for practice j within country *k*. ϵ_{ijk} is the residual error term.

(3.) To estimate the level and variation of selected outcomes in and between countries, while understanding the effect of an independent variable over the outcome within countries

Model (3.) is set to understand the outcomes and experiences of a particular group of people across countries, while compared to other groups within the country. This is the most common type of analysis throughout the report and can be linked to all research questions. The model uses a multilevel model with random slopes (Groenewegen et al., 2024[7]). The key additional assumption to the previous models is that covariates affect the level of outcome differently across countries. The inclusion of a covariate in the random slope is accompanied by the inclusion of a standardised version of the same covariate as an independent variable. The reason is that the analysis is intended to understand how the covariates affect the outcome differently across countries, while controlling for the different distribution of the covariate in the different countries. The standardisation of the covariate is constructed identically to case-mix variables, with the average of the average by country as the standard level of the interest variable. Equation 4 describes the multilevel model for this analysis.

$$\begin{aligned} Y_{ijk} = \beta_0 + \beta_1 MALE\_std_{ijk} + \beta_2 AGE2\_std_{ijk} + \beta_3 AGE3\_std_{ijk} + \beta_4 AGE4\_std_{ijk} \\ + \beta_5 AGE\_missing_{ijk} + \beta_6 Gender\_missing_{ijk} + \beta_m X\_std_{(m)ijk} \\ + u_{0k} * X_{(m)ijk} + v_{0jk} * X_{(m)ijk} + \epsilon_{ijk} \end{aligned}$$

Equation 4

Y_{ijk} is the outcome for patient *i* in country *k*, related to practice *j*. β_0 is the fixed intercept.β_{1-6} are the coefficients for the standardised male variable and age variables and the missingness variables explained in Section 7.7.5. $u_{0k} * X_{(m)ijk}$ is the random slope for country *k* and the groups defined by $X_{(m)}$ *in the country.* $v_{0jk} * X_{(m)ijk}$ is the random slope for country *k* and the groups defined by $X_{(m)}$ in the patients of practice *j*. ϵ_{ijk} is the residual error term. To note that $X_{(m)}$ includes both the groups defined by variable X, as well as a missingness indicator for variable X as explained in Section 7.7.5. A practical example is provided in Box 7.7.

Box 7.7. Random slope model to estimate WHO-5 (Well-being index) for people with and without chronic conditions

Specification and codes for R and Stata

As an example, we provide the specification and codes for the analysis with a multilevel random slope of the measure of WHO-5 for patients with and without Chronic conditions by country. Equation 4 below describes the model.

$$\begin{aligned} WHO5_{ijk} = {} & \beta_0 + \beta_1 MALE\_std_{ijk} + \beta_2 AGE2\_std_{ijk} + \beta_3 AGE3\_std_{ijk} \\ & + \beta_4 AGE4\_std_{ijk} + \beta_5 AGE\_missing_{ijk} + \beta_6 Gender\_missing_{ijk} \\ & + \beta_7 WithChronic\_std_{ijk} + u_{0k} * WithChronic_{ijk} + u_{0k} \\ & * WithoutChronic_{ijk} + u_{0k} * Chronic_{missing\,ijk} + v_{0jk} \\ & * WithChronic_{ijk} + v_{0jk} * WithoutChronic_{ijk} + v_{0jk} \\ & * Chronic\_missing_{ijk} + \epsilon_{ijk} \end{aligned} \tag{Equation 5}$$

$WHO5_{ijk}$ is the measure of the WHO5 scale for patient *i* in country *k*, related to practice *j*. β_0 is the overall intercept. β_{1-6} are the coefficients for the standardised male variable and age variables and the missingness variables for age and gender. $(u_{0k}/v_{0jk}) * WithChronic_{ijk}$ are the random slopes for patients with chronic conditions for country *k* and practice *j (*in country *k*), respectively. $(u_{0k}/v_{0jk}) * WithoutChronic_{ijk}$ are the random slopes for patients without chronic conditions for country *k* and practice *j* (in country *k*), respectively. $(u_{0k}/v_{0jk}) * Chronic\_missing_{ijk}$ are the random slopes for patients with a missing value in the chronic condition question, for country *k* and practice *j* (in country *k*), respectively. ϵ_{ijk} is the residual error term.

The country estimate for people with chronic conditions will be the sum of the overall intercept (β_0), the coefficient effect of the chronic (standardised) variable (β_7) multiplied by the value of the standardised variable for patients with chronic conditions ($WithChronic\_std$), and the country-group specific random effect ($u_{0k} * WithChronic_{ijk}$ and $u_{0k} * WithoutChronic_{ijk}$).

The model is estimated with a linear restricted iterative least squares model.

Code for estimation in R

```r
library(R2MLwiN)
> model <- runMLwiN(Formula = who5_totcons ~ 1 + MALE_std + Age2_std + Age3_std + Age4_std +
Gender_missing + AGE_missing + WithChronic _std + Chronic_missing + (WithCC + WithoutCC +
Chronic_missing | Country) + (WithCC + WithoutCC + Chronic_missing |practice_id) + (WithCC +
WithoutCC + Chronic_missing |patient_id), data = data, estoptions = list(resi.store = TRUE,
EstM = 0, Meth = 0, maxiter = 200)
> country_levels <- levels(data$Country)
> country_estimates <- data.table(Country_v = country_levels, WithCC =
model@residual$lev_3_resi_est_WithCC, WithoutCC = model@residual$lev_3_resi_est_WithoutCC)
> overall_intercept_WithCC<-model@FP[1]+ model@FP['FP_WithCC_std']*model@data[WithCC==1,
mean(WithCC_std,na.rm=TRUE)]
```

```
> overall_intercept_WithoutCC<-model@FP[1]+model@FP['FP_WithCC_std']*model@data[WithoutCC==1,
mean(WithCC_std,na.rm=TRUE)]
> country_estimates <- country_estimates %>% mutate(Country_estimate_WithCC =
overall_intercept_WithCC + WithCC, Country_estimate_WithoutCC = overall_intercept_WithoutCC +
WithoutCC)
```

Code for estimation in Stata

```
> runmlwin who5_totcons MALE_std Age2_std Age3_std Age4_std Gender_missing AGE_missing
WithChronic_std, level3(Country: WithCC WithoutCC Chronic_missing, diagonal residuals(u))
level2(arts: WithCC WithoutCC Chronic_missing, diagonal) level1(patient: WithCC WithoutCC
Chronic_missing, diagonal) rigls nopause.
> gen Country_group_estimates= _b[cons]*cons + _b[WithChronic_std]* WithChronic_std + u1*
WithCC + u2* WithoutCC
> collapse (first) Country_group_estimates, by (Country WithCC)
> sort WithCC Country
> list Country WithCC Country_group_estimates
```

7.7.8. Comparison of country estimates

Country estimates are created under the assumption of a standard population structure (in terms of age and sex) and with the premise that country measures are distributed around the overall PREM/PROM measure for the entire sample, while accounting for the nested nature of the data.

To ease comparison, OECD PaRIS average is provided, which corresponds to the average of the 17 OECD member countries participating in PaRIS. This measure is calculated using a simple average that assumes no standard error in the country estimates calculated by the multilevel model. The robustness of this calculation was corroborated with a simulation approach that accounted for the dependency and standard errors of the country estimates calculated by the multilevel model. Moreover, to assess the statistical significance of differences across countries, we provide estimates with a comparative interval. The comparative sample approach involves examining the overlap of confidence intervals to assess statistical significance. Following Goldstein and Healy's method (Goldstein and Healy, 1995[34]), these intervals are confidence intervals adjusted so that their overlap effectively implies no statistically significant difference at 5% error. The adjustment involves widening the intervals slightly beyond traditional 95% confidence limits to account for multiple comparisons. The resulting interval is equivalent to an 84% confidence interval. By doing so, the type I error rate – the probability of incorrectly identifying a difference – averages at 5% across all pairwise comparisons. This means that if two comparative intervals overlap, any observed difference is unlikely to be statistically significant.

7.8. Limitations

Ensuring comparability across countries required addressing potential cultural biases and differences in expectations and response styles. These factors can challenge measurement invariance, a key issue in cross-country studies. To mitigate such risks, the PaRIS questionnaire was developed with intercultural differences in mind, drawing on insights from international guidelines and expert recommendations on cross-cultural validity and adaptability of surveys. The process involved extensive consultation with patient groups and experts, rigorous translation procedures, cognitive testing in each country to refine items and minimise cultural discrepancies, and confirmatory factor analysis on the Field Trial data. Further research is planned to enhance cross-country comparability through techniques such as differential item functioning analyses, response style adjustments, and advanced confirmatory factor analyses.

Selection and non-response bias is also a potential concern due to limitations in data collection and sampling methods in some countries, particularly because of the recruitment of patients through primary care practices. Differences in survey collection methods (e.g. paper-based, online, or telephone), unfavourable sampling approaches (e.g. continuous or convenience sampling), and varying response rates can contribute to this limitation.

The analysis in Section 7.6.1 confirms that collection modes have significant impact on PREMS and PROMS. However, because countries used mostly one collection mode, it is difficult to disentangle the collection mode effect from the country effect. This results in minimal changes to the country estimates when accounting for the collection method (see Section 7.6.1). On the other hand, because of data limitations, it was not possible to directly mitigate the risk of selection bias arising from continuous or convenience sampling.

Practices that agree to participate in a survey may not necessarily be representative of all primary care practices in the country. Practices with sufficient resources or those focused on quality improvement could be more likely to participate, which might result in selection of "high performers" and so better scores on patient-reported measures.

This hypothesis was tested in Norway, where it was possible to survey patients whose practice was not willing to participate. This way, results of patients of participating and non-participating practices could be compared. While the analysis showed statistically significant differences, its impact on core outcomes is minimal. In Norway (Bjertnaes et al., 2024[35]), findings revealed that patients in participating practices differed only slightly in areas like people-centred care, co-ordinated care, and mental health outcomes, with statistically small effects. These findings reinforce the idea that, despite certain limitations, the survey effectively captures key aspects of patient outcomes and experiences.

PaRIS' response rates vary between 5% and 86% for practices and between 6% and 47% for patients. While some response rates might seem low, they are within the range of other recent international surveys with patient-level responses. For example, the People's Voice Survey (Kruk et al., 2024[22]) presents response rates between 2%-84% among the 15 participating countries. The Commonwealth Fund's 2023 International Health Policy Survey had response rates varying from 6 to 49% among 10 participating countries (Gumas et al, 2024[23]). While the third wave of the European Health Interview Survey (Eurostat, 2024[24]) achieves higher response rates (between 25% and 88%), it targets the general population, unlike PaRIS, which focuses on primary care service users.

For countries with low response rates, there is an increased risk of self-selection of respondents because of characteristics that differentiate them from non-respondents, amounting to challenging non-response bias and representativeness. In time, if these characteristics influence the measured outcomes, non-response bias can also affect comparability. For example, outcomes could be negatively affected by having a high response rate related to a more wide-spread inclusion of more socially disadvantaged groups.

Given the lack of information on non-responders, a characterisation of this group was not possible. Instead, we've mitigated the risk of non-response bias in a two-step approach. First, regarding comparability, we've conducted a case-mix analysis (Section 7.7.4), resulting in potential case-mix covariates having minimal impact on country estimates of PROMs and PREMs. This tells us that, even if there is risk of over-representation of some characteristics that could drive participation, such as socio-economic or chronic conditions prevalence, these have a negligible impact over the interest outcomes. These results reinforce the idea of health systems adapting to the characteristics of their population to optimise patient outcomes and experiences. Regarding representativeness, the validation and standardisation process in terms of the age and sex distribution of the sample secures representativeness under these parameters (See Section 7.7.6).

Overall, these measures allow for meaningful cross-country comparisons, reinforcing the survey's contribution to understanding patient experiences across diverse health systems. However, these methods do not address potential representativeness or comparability issues in terms of unobserved variables. While this is a shortcoming of every survey and cross-sectional study (Groves and Lyberg, 2010[36]), it is important for the reader to consider potential unaccounted biases arising from the implementation methods described in Section 7.5.1 when analysing results.

Access bias is an important consideration in PaRIS, as characteristics of primary care service users can vary across countries due to differences in access barriers. For instance, in countries with lower financial coverage of primary care, primary care access can be constrained by out-of-pocket costs, which may not be as significant in countries with more extensive healthcare coverage. This variability means that individuals facing greater access challenges may be underrepresented in some countries, as the survey specifically targets those who have interacted with primary care practices within the six months prior to sampling.

When interpreting the survey findings, it is essential to recognise that PaRIS focuses on primary care users rather than the broader population. Therefore, observed disparities between groups may reflect not only differences in care quality but also varying levels of access to primary care. This is not biasing results, given that PaRIS does not aim to be representative of the population, but of primary care users. However, the PaRIS eligibility criteria, which only require one primary care contact within six months, likely still captures a significant portion of people with access barriers, as even those facing challenges may achieve at least this minimal level of contact.

To assess the impact of access, PaRIS included questions on access barriers. The proportion of people reporting access barriers in PaRIS aligns closely with Eurostat data on self-reported unmet needs due to access and cost barriers, as well as OECD data on skipped medical treatments due to costs (further explained in Chapter 5). This alignment suggests that PaRIS is representative of a substantial portion of individuals facing access barriers, though some level of access bias cannot be completely ruled out. Overall, analysis indicates that any potential impact of access bias on the survey's findings is likely minimal.

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Notes

[1] With the exception of patients from the United States, that are not linked to a primary care practice.

[2] While patients form the United Stated are not linked to a primary care practice, they are still included in the analysis.

[3] www.oecd.org/en/about/programmes/patient-reported-indicator-surveys-paris.htm.

[4] www.healthdata.org/research-analysis/gbd.

Annex 7.A. Instrument reliability and statistical power

Outcome reliability

PaRIS data has three interconnected levels: Country, practice, and patient. Four validated measures of patient-reported care experience and outcomes are considered for evaluating outcome reliability: P3CEQ (PREM) (Lloyd et al., 2018[37]), WHO-5 (Sischka et al., 2020[38]), PROMIS-physical (Zonjee et al., 2022[39]) and PROMIS-mental (PROMs). The reliability of the four selected outcomes depends on measurement error, the number of items,[1] the number of patients per practice and the variances at practice and country level.

Following literature (Raudenbush, 2003[18]; Leyland and Groenewegen, 2020[19]), reliability is calculated for the multilevel model with the following formula:

$$reliability = \frac{\sigma_{v0}^2}{\sigma_{v0}^2 + \frac{\sigma_{u0}^2}{\bar{n}_j} + \frac{\sum_{m-1}^{n_1} \sigma_{em}^2}{n_I \bar{n}_j}} \qquad \textbf{Equation 6}$$

In Equation 6, σ_{v0}^2 is the higher level variance; σ_{u0}^2 is the individual level variance; $\sum_{m-1}^{n_1} \sigma_{em}^2$ is the item consistency;[2] $\bar{n}_j$ is the average number of individual respondents in a higher level unit (country); and n_I is the number of items. The reliability coefficient in a multilevel model is a measure of internal consistency comparable to Cronbach's alpha in a single-level model (Raudenbush, Rowan and Kang, 1991[40]).[3]

Annex Table 7.A.1 to Annex Table 7.A.5 contain the results of the multilevel reliability analyses using the data of the main survey for the scales in the PaRIS ten key indicators. The tables contain the results for the five key indicators that have been assessed with multiple items. In addition, we also evaluated reliability of other scales with multi-item constructs that were included in the patient questionnaire of the main survey: Active engagement, Working with healthcare professionals and Health literacy.

The tables show that countries varied a lot in the number of participating practices and patients. These differences are reflected in the reliability of the constructs at country level. The reliability at country and practice level is generally higher when the average number of participating patients per practice is high. Unfortunately, as the tables also show, many countries did not reach the recommended minimum of 75 patients per practice.

Looking at the results for each construct separately, high reliability at country level was found for the scales assessing Physical health, Mental health, Experienced care co-ordination and Experienced people-centred care. A similar result was found for Active engagement, Working with healthcare professionals to manage one's health and Health literacy.

Reliability (>.70) at country level was found for all countries except three (Greece, Italy, Romania, all with a low number of participating patients per practice) on Physical health, and for all except one country (Romania) on Mental health. Reliability at country level was sufficient for all countries on Experienced care co-ordination, Experienced people-centred care. In addition (not shown in the tables) reliability was found for the scales on Working with healthcare professionals to manage one's health and Health literacy. Lower reliability at country level was found for the well-being scale (ten countries with country reliability <.70).

Reliability at practice level was in most countries insufficient. While higher reliability at the practice level would have been ideal, it is less critical for PaRIS, as the survey's primary objective is not to analyse differences in patients' care experiences and outcomes between practices within countries.

Annex Table 7.A.1. Instrument reliability: PROMIS Physical health scale

Multilevel reliability coefficient for PROMIS Physical health scale

	Reliability (multi-level) Reliability (single level; Cronbach's alpha)		Reliability (single level; Cronbach's alpha)
	Country reliability	Practice reliability	
Australia	0.87	0.81	0.7992
Belgium	0.84	0.73	0.7942
Canada	0.90	0.83	0.7626
Czechia	0.77	0.63	0.8066
France	0.83	0.72	0.7853
Greece	0.67	0.51	0.8075
Iceland	0.78	0.66	0.8150
Italy	0.60	0.43	0.7744
Luxembourg	0.78	0.67	0.7817
The Netherlands	0.83	0.72	0.7975
Norway	0.81	0.69	0.8052
Portugal	0.89	0.82	0.7868
Romania	0.48	0.32	0.8291
Saudi Arabia	0.81	0.69	0.7033
Slovenia	0.77	0.64	0.7642
Spain	0.81	0.69	0.7565
Switzerland	0.79	0.65	0.7215
United States[1]	0.60	-	0.7829
Wales	0.86	0.76	0.8460

1. Patients not nested in practices.
Source: OECD PaRIS 2024 Database.

Annex Table 7.A.2. Instrument reliability: PROMIS Mental health scale

Multilevel reliability coefficient for PROMIS Mental health scale

	Reliability (multi-level) Reliability (single level; Cronbach's alpha)		Reliability (single level; Cronbach's alpha)
	Country reliability	Practice reliability	
Australia	0.94	0.74	0.8537
Belgium	0.92	0.65	0.8217
Canada	0.95	0.77	0.8299
Czechia	0.88	0.54	0.7926
France	0.91	0.64	0.7631
Greece	0.81	0.42	0.7995
Iceland	0.89	0.57	0.8193
Italy	0.76	0.34	0.7749
Luxembourg	0.89	0.57	0.7909
The Netherlands	0.91	0.63	0.8202
Norway	0.90	0.60	0.8463
Portugal	0.95	0.76	0.7718
Romania	0.66	0.24	0.7933
Saudi Arabia	0.90	0.60	0.7212
Slovenia	0.88	0.54	0.7658
Spain	0.90	0.60	0.7131
Switzerland	0.89	0.56	0.7935
United States[1]	0.83	-	0.8101
Wales	0.93	0.68	0.8460

1. Patients not nested in practices.
Source: OECD PaRIS 2024 Database.

Annex Table 7.A.3. Instrument reliability: WHO5 Well-being

Multilevel reliability coefficient for well-being index

	Reliability (multi-level) Reliability (single level; Cronbach's alpha)		Reliability (single level; Cronbach's alpha)
	Country reliability	Practice reliability	
Australia	0.79	0.73	0.9069
Belgium	0.73	0.64	0.9012
Canada	0.82	0.76	0.8979
Czechia	0.64	0.53	0.9054
France	0.73	0.63	0.9014
Greece	0.51	0.40	0.9064
Iceland	0.66	0.56	0.8935
Italy	0.43	0.32	0.8992
Luxembourg	0.66	0.56	0.9028
The Netherlands	0.72	0.62	0.8959
Norway	0.70	0.59	0.8906
Portugal	0.82	0.74	0.9110
Romania	0.32	0.23	0.9188
Saudi Arabia	0.69	0.59	0.8308
Slovenia	0.64	0.53	0.9104
Spain	0.70	0.59	0.8465
Switzerland	0.66	0.55	0.8933
United States[1]	0.58	-	0.8258
Wales	0.76	0.68	0.9149

1. Patients not nested in practices.
Source: OECD PaRIS 2024 Database.

Annex Table 7.A.4. Instrument reliability: P3CEQ person centredness

Multilevel reliability coefficient for P3CEQ person centredness

	Reliability (multi-level) Reliability (single level; Cronbach's alpha)		Reliability (single level; Cronbach's alpha)
	Country reliability	Practice reliability	
Australia	0.97	0.82	0.7621
Belgium	0.96	0.73	0.7035
Canada	0.98	0.83	0.7593
Czechia	0.94	0.64	0.7600
France	0.96	0.72	0.7070
Greece	0.89	0.47	0.7284
Iceland	0.94	0.66	0.7547
Italy	0.87	0.41	0.7894
Luxembourg	0.94	0.67	0.7364
The Netherlands	0.96	0.71	0.6662
Norway	0.95	0.69	0.7408
Portugal	0.97	0.81	0.8063
Romania	0.83	0.35	0.7221
Saudi Arabia	0.96	0.70	0.5904
Slovenia	0.93	0.60	0.8140
Spain	0.96	0.71	0.7561
Switzerland	0.94	0.65	0.7128
United States[1]	0.87	-	0.6994
Wales	0.97	0.77	0.8008

1. Patients not nested in practices.
Source: OECD PaRIS 2024 Database.

Annex Table 7.A.5. Instrument reliability: P3CEQ care co-ordination

Multilevel reliability coefficient for P3CEQ care co-ordination

	Reliability (multi-level) Reliability (single level; Cronbach's alpha)		Reliability (single level; Cronbach's alpha)
	Country reliability	Practice reliability	
Australia	0.96	0.81	0.6599
Belgium	0.94	0.72	0.6109
Canada	0.97	0.83	0.6305
Czechia	0.92	0.63	0.6540
France	0.94	0.71	0.5794
Greece	0.85	0.46	0.6988
Iceland	0.92	0.65	0.6840
Italy	0.82	0.40	0.6217
Luxembourg	0.92	0.66	0.6166
The Netherlands	0.94	0.70	0.5595
Norway	0.93	0.68	0.6434
Portugal	0.96	0.81	0.7084
Romania	0.78	0.34	0.6990
Saudi Arabia	0.94	0.70	0.6644
Slovenia	0.90	0.59	0.6269
Spain	0.94	0.70	0.5634
Switzerland	0.92	0.64	0.5708
United States[1]	0.80	-	0.5571
Wales	0.95	0.77	0.6549

1. Patients not nested in practices.

Source: OECD PaRIS 2024 Database.

Statistical power to answer PaRIS' main research questions.

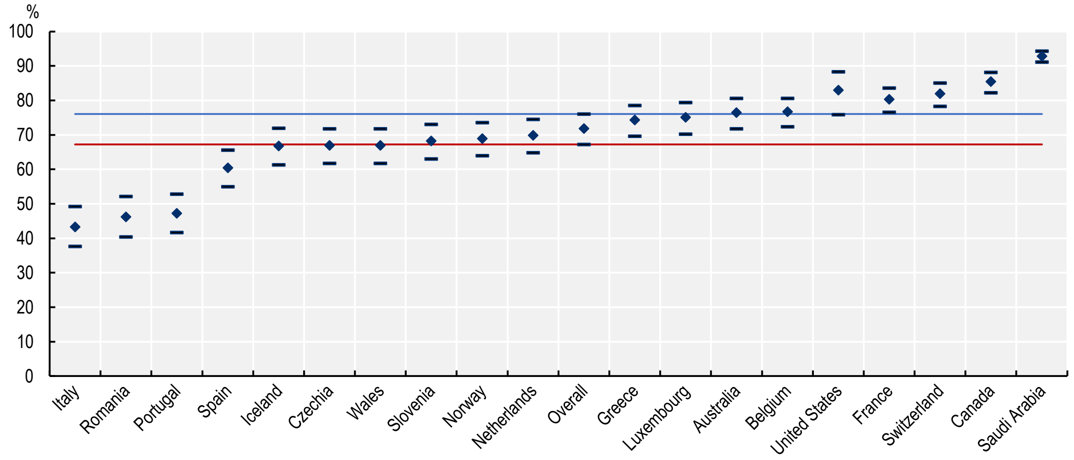
Research questions #1 and #2.

- What are the patient-reported outcomes of {the population}[4] with chronic conditions, compared to those without chronic conditions, in the areas of symptoms, physical, mental and social functioning, self-reported health, and health-related quality of life? How do these results vary across countries?
- What are the experiences of {the population} with chronic conditions, compared to those without chronic conditions, in the areas of access, comprehensiveness, continuity, co-ordination, safety and people-centredness of care, self-management support, trust, and overall perceived quality of care? How do these results vary across countries?

Calculations follow whether it is possible to demonstrate significant differences between three groups of countries based on the care experiences (as assessed with the P3CEQ) and outcomes (as assessed with WHO-5, PROMIS-physical and PROMIS-mental scales) as reported in PaRIS: 1. countries that did not deviate from the overall average on the specific PREM/PROM; 2. countries with a mean score and comparative interval on the PREM/PROM fully above the overall average; 3. countries with a mean score and comparative interval on the PREM/PROM fully below the overall average. This can be inspected visually in Annex Figure 7.A.1, where four countries have the upper bound of their comparative interval below the lower bound of the comparative interval of the average in the sample (red line), while five other countries have the lower bound of their comparative interval above the upper bound of the comparative interval of the average in the sample (blue line). This assessment is similar for all PaRIS ten key indicators.

Annex Figure 7.A.1. Assessing the power of PaRIS to capture significant differences in PREMS/PROMS across countries

Proportion of the population with good general health. Country average and comparative interval.



Note: Countries below the red line are statistically significantly below average. Countries above blue line are statistically significantly above average. Estimates are made over the whole PaRIS population; thus, measures can differ from those on the dashboard in Chapter 2. The "Overall" measure includes all 19 countries in PaRIS and represents the joint adjusted estimate of the indicator.
Source: OECD PaRIS 2024 Database.

StatLink https://stat.link/fx3uq1

Research question #4

- How do key characteristics of primary care practices relate to the care experiences and outcomes of primary care service users aged 45 and over with chronic conditions?

To assess the power of the survey to detect meaningful effects of primary care practice or country characteristics, we conducted a simulation-based power analysis of the multilevel regression model detailed in Section 7.7.7.

In this approach, we used the original model fitted to the survey data and simulated datasets with fixed sample sizes at each level, following the average number of practices within countries and patients within practices. The main source of variability in the simulations comes from the randomness inherent in the process, akin to a bootstrap method, which tests the robustness of the model. For each simulation, we tested the significance of a specified characteristic and calculated the proportion of times the characteristic's effect was statistically significant at a 0.05 significance level. Observed power is considered acceptable when it reaches at least 70%, indicating an 70% probability of detecting a true effect of the characteristic, if it exists. This analysis provides insights into whether the current survey design – considering the number of countries, respondents, and observations – is sufficient to robustly estimate the effect of the characteristics while accounting for random variation at multiple levels. Additionally, if available, some parameters (such as the real distribution of the characteristic of interest) can be adjusted to reflect the true data distribution, rather than using the sample distribution. The simulation analysis shows that the significant effects found in PaRIS are robust in all of the simulated datasets.

Annex Table 7.A.6. Power analysis for practice-level characteristics

Percentage of significant results among 100 simulated datasets

Practice characteristic	PROMIS Physical	PROMIS Mental	Person centredness	Care co-ordination
Datasets equivalent to the PaRIS sample				
Medical records available	100%	100%	NS	NS
Self-management support by providing written information	100%	NS	NS	NS
Scheduling appointment for more than 15 minutes	NS	NS	100%	100%
Prepared for co-ordinating care	NS	NS	100%	100%
Datasets equivalent to the optimal PaRIS sample				
Role of primary care staff	5%	9%	17%	33%

Note: The optimal Paris Sample considered 106 practice per country and 75 patients per practice. NS = Not significant in the PaRIS analysis.
Source: OECD PaRIS 2024 Database.

We tested the robustness of the non-significance of the role of primary care staff by simulating a larger number of average practices per country that those in PaRIS. The results show that in simulated samples with the optimal average number of practices per country by design (75), the effect size of the role of primary care staff we found in PaRIS was not significant in more than 65% of the simulated runs (Annex Table 7.A.6).

Annex 7.B. Characterisation of PaRIS patients

Annex Table 7.B.1. Characterisation of PaRIS patients

	Country averages and 95% Confidence Intervals												
	Age 45-54	Age 55-64	Age 65-74	Age 75+	Gender (male)	Education low	Education mid	Education high	Hypertension	Arthritis	CVD	Diabetes Mellitus	Asthma/ COPD
Australia	0.19 (0.17 – 0.2)	0.29 (0.28 – 0.31)	0.32 (0.3 – 0.34)	0.2 (0.18 – 0.22)	0.4 (0.38 – 0.42)	0.24 (0.23 – 0.26)	0.26 (0.24 – 0.28)	0.5 (0.47 – 0.52)	0.51 (0.49 – 0.53)	0.43 (0.4 – 0.45)	0.21 (0.19 – 0.23)	0.15 (0.13 – 0.16)	0.21 (0.2 – 0.23)
Belgium	0.24 (0.23 – 0.25)	0.33 (0.31 – 0.34)	0.29 (0.28 – 0.31)	0.14 (0.13 – 0.15)	0.45 (0.43 – 0.46)	0.27 (0.26 – 0.28)	0.29 (0.28 – 0.3)	0.44 (0.42 – 0.45)	0.38 (0.37 – 0.4)	0.32 (0.3 – 0.33)	0.16 (0.15 – 0.17)	0.12 (0.11 – 0.13)	0.12 (0.11 – 0.13)
Canada	0.22 (0.2 – 0.23)	0.3 (0.28 – 0.31)	0.32 (0.3 – 0.33)	0.17 (0.16 – 0.18)	0.36 (0.34 – 0.37)	0.17 (0.16 – 0.19)	0.32 (0.31 – 0.34)	0.5 (0.49 – 0.52)	0.4 (0.38 – 0.41)	0.37 (0.35 – 0.38)	0.15 (0.14 – 0.16)	0.17 (0.16 – 0.18)	0.16 (0.14 – 0.17)
Czechia	0.3 (0.28 – 0.31)	0.28 (0.26 – 0.29)	0.27 (0.25 – 0.28)	0.16 (0.15 – 0.17)	0.43 (0.42 – 0.45)	0.65 (0.64 – 0.67)	0.06 (0.05 – 0.07)	0.29 (0.27 – 0.3)	0.56 (0.55 – 0.58)	0.31 (0.3 – 0.33)	0.17 (0.16 – 0.18)	0.19 (0.18 – 0.2)	0.14 (0.13 – 0.15)
France	0.27 (0.26 – 0.27)	0.29 (0.28 – 0.29)	0.27 (0.26 – 0.28)	0.18 (0.17 – 0.19)	0.42 (0.41 – 0.43)	0.23 (0.22 – 0.24)	0.35 (0.34 – 0.36)	0.42 (0.41 – 0.43)	0.36 (0.35 – 0.37)	0.23 (0.23 – 0.24)	0.18 (0.17 – 0.18)	0.13 (0.12 – 0.13)	0.12 (0.11 – 0.12)
Greece	0.38 (0.36 – 0.4)	0.34 (0.32 – 0.36)	0.22 (0.2 – 0.24)	0.06 (0.05 – 0.07)	0.44 (0.42 – 0.46)	0.11 (0.1 – 0.13)	0.39 (0.36 – 0.41)	0.5 (0.48 – 0.53)	0.33 (0.31 – 0.35)	0.2 (0.18 – 0.22)	0.16 (0.15 – 0.18)	0.17 (0.15 – 0.19)	0.12 (0.11 – 0.14)
Iceland	0.2 (0.18 – 0.21)	0.33 (0.31 – 0.35)	0.32 (0.3 – 0.34)	0.16 (0.14 – 0.18)	0.38 (0.36 – 0.41)	0.2 (0.18 – 0.22)	0.36 (0.34 – 0.38)	0.44 (0.41 – 0.46)	0.5 (0.48 – 0.53)	0.26 (0.24 – 0.28)	0.24 (0.22 – 0.26)	0.13 (0.12 – 0.15)	0.16 (0.14 – 0.18)
Italy	0.18 (0.16 – 0.2)	0.31 (0.29 – 0.34)	0.32 (0.3 – 0.35)	0.18 (0.16 – 0.21)	0.49 (0.46 – 0.52)	0.38 (0.36 – 0.41)	0.43 (0.4 – 0.46)	0.19 (0.17 – 0.21)	0.49 (0.46 – 0.51)	0.26 (0.24 – 0.29)	0.29 (0.27 – 0.32)	0.33 (0.31 – 0.36)	0.2 (0.18 – 0.23)
Luxembourg	0.3 (0.28 – 0.32)	0.36 (0.34 – 0.39)	0.22 (0.2 – 0.24)	0.12 (0.1 – 0.14)	0.48 (0.46 – 0.51)	0.3 (0.27 – 0.32)	0.35 (0.32 – 0.37)	0.35 (0.33 – 0.38)	0.42 (0.4 – 0.45)	0.33 (0.31 – 0.36)	0.17 (0.15 – 0.19)	0.11 (0.1 – 0.13)	0.13 (0.11 – 0.15)
Netherlands	0.14 (0.13 – 0.15)	0.24 (0.23 – 0.25)	0.36 (0.34 – 0.37)	0.27 (0.25 – 0.28)	0.47 (0.46 – 0.48)	0.45 (0.43 – 0.46)	0.13 (0.12 – 0.14)	0.42 (0.41 – 0.43)	0.4 (0.39 – 0.42)	0.21 (0.2 – 0.22)	0.2 (0.18 – 0.21)	0.12 (0.11 – 0.13)	0.14 (0.13 – 0.15)
Norway	0.25 (0.24 – 0.26)	0.3 (0.29 – 0.31)	0.26 (0.25 – 0.27)	0.19 (0.18 – 0.2)	0.43 (0.42 – 0.44)	0.11 (0.1 – 0.11)	0.27 (0.26 – 0.28)	0.62 (0.61 – 0.63)	0.43 (0.42 – 0.45)	0.19 (0.18 – 0.19)	0.15 (0.14 – 0.16)	0.11 (0.1 – 0.12)	0.12 (0.12 – 0.13)
Portugal	0.43 (0.42 – 0.44)	0.32 (0.32 – 0.33)	0.18 (0.17 – 0.18)	0.07 (0.06 – 0.07)	0.46 (0.45 – 0.47)	0.34 (0.33 – 0.35)	0.31 (0.3 – 0.32)	0.35 (0.34 – 0.36)	0.42 (0.41 – 0.43)	0.32 (0.31 – 0.33)	0.15 (0.14 – 0.16)	0.15 (0.15 – 0.16)	0.13 (0.12 – 0.13)
Romania	0.22 (0.2 – 0.25)	0.39 (0.37 – 0.42)	0.31 (0.28 – 0.33)	0.08 (0.06 – 0.09)	0.4 (0.38 – 0.43)	0.59 (0.56 – 0.62)	0.16 (0.14 – 0.18)	0.25 (0.23 – 0.28)	0.56 (0.53 – 0.58)	0.29 (0.27 – 0.32)	0.36 (0.33 – 0.38)	0.19 (0.17 – 0.22)	0.13 (0.11 – 0.15)
Saudi Arabia	0.56 (0.54 – 0.57)	0.31 (0.3 – 0.32)	0.1 (0.09 – 0.11)	0.03 (0.03 – 0.04)	0.5 (0.48 – 0.51)	0.34 (0.32 – 0.35)	0.25 (0.24 – 0.26)	0.42 (0.4 – 0.43)	0.4 (0.39 – 0.41)	0.46 (0.45 – 0.48)	0.13 (0.12 – 0.13)	0.4 (0.39 – 0.41)	0.15 (0.14 – 0.16)

	Country averages and 95% Confidence Intervals												
	Age 45-54	Age 55-64	Age 65-74	Age 75+	Gender (male)	Education low	Education mid	Education high	Hypertension	Arthritis	CVD	Diabetes Mellitus	Asthma/ COPD
Slovenia	0.32 (0.3 – 0.34)	0.33 (0.32 – 0.35)	0.25 (0.23 – 0.26)	0.1 (0.09 – 0.11)	0.35 (0.34 – 0.37)	0.42 (0.4 – 0.43)	0.17 (0.15 – 0.18)	0.42 (0.4 – 0.44)	0.37 (0.36 – 0.39)	0.18 (0.16 – 0.19)	0.15 (0.14 – 0.17)	0.1 (0.09 – 0.11)	0.11 (0.1 – 0.12)
Spain	0.29 (0.28 – 0.29)	0.3 (0.29 – 0.3)	0.23 (0.22 – 0.23)	0.19 (0.18 – 0.19)	0.42 (0.42 – 0.43)	0.45 (0.44 – 0.45)	0.12 (0.12 – 0.13)	0.43 (0.43 – 0.44)	0.41 (0.4 – 0.41)	0.42 (0.41 – 0.43)	0.16 (0.16 – 0.17)	0.15 (0.15 – 0.16)	0.14 (0.13 – 0.14)
Switzerland	0.19 (0.18 – 0.2)	0.28 (0.27 – 0.29)	0.29 (0.27 – 0.3)	0.24 (0.23 – 0.26)	0.49 (0.47 – 0.5)	0.27 (0.25 – 0.28)	0.39 (0.38 – 0.41)	0.34 (0.32 – 0.35)	0.44 (0.42 – 0.45)	0.24 (0.23 – 0.25)	0.19 (0.18 – 0.2)	0.12 (0.11 – 0.13)	0.11 (0.1 – 0.12)
United States			0.38 (0.36 – 0.39)	0.62 (0.61 – 0.64)	0.42 (0.4 – 0.43)	0.14 (0.13 – 0.15)	0.34 (0.32 – 0.35)	0.52 (0.51 – 0.54)	0.69 (0.67 – 0.7)	0.63 (0.61 – 0.64)	0.36 (0.35 – 0.37)	0.25 (0.23 – 0.26)	0.23 (0.22 – 0.24)
Wales	0.15 (0.15 – 0.16)	0.27 (0.26 – 0.28)	0.33 (0.32 – 0.34)	0.25 (0.24 – 0.26)	0.45 (0.44 – 0.46)	0.43 (0.42 – 0.45)	0.11 (0.1 – 0.12)	0.46 (0.45 – 0.47)	0.4 (0.39 – 0.41)	0.35 (0.34 – 0.36)	0.16 (0.15 – 0.16)	0.15 (0.14 – 0.15)	0.18 (0.18 – 0.19)
OECD PaRIS	0.25 (0.25 - 0.27)	0.3 (0.27 - 0.3)	0.28 (0.26 - 0.28)	0.19 (0.18 - 0.2)	0.43 (0.42 - 0.45)	0.3 (0.31 - 0.34)	0.27 (0.23 - 0.26)	0.42 (0.42 - 0.45)	0.44 (0.41 - 0.44)	0.31 (0.31 - 0.33)	0.19 (0.17 - 0.19)	0.16 (0.14 - 0.16)	0.15 (0.13 - 0.15)

Note: The table presents the unstandardised prevalences per-country, of the sample used in multilevel analysis. Prevalence and 95% confidence interval for each binary variable using the Wilson score interval method. CVD: Cardiovascular disease. OECD PaRIS is the average of the 17 OECD countries participating in PaRIS.
Source: OECD PaRIS 2024 Database.

Annex 7.C. Data collection modes

Countries used four distinct modes for data collection: online, paper, telephone and assisted surveys. To understand the effect of collection mode on country estimates of PREMS and PROMS dichotomous variables were included indicating the collection mode into a random intercept model as described in model (1.) of Section 7.7.7. When compared to the online responses, completing the survey by telephone was significantly associated (at 5% error) with higher estimates in seven of the 10 PaRIS key indicators, with non-significant differences in P3CEQ person centredness and PROMIS physical, and significantly lower estimates in General Health. Completing the survey on pen and paper was significantly associated to lower estimates in seven of the PaRIS 10 indicators, with non-significant differences in Overall Quality of Care and significantly higher estimates in P3CEQ care co-ordination. In general, collection mode variables significantly improve model fit. These findings are consistent with literature (Katz, Pedro and Michaud, 2017[41]). Nevertheless, countries performed predominantly one mode of data collection, resulting in only a very small portion of the variance in the outcomes (less than 1%) being explain by collection mode variables. Annex Table 7.C.1summarises the collection modes by country.

Annex Table 7.C.1. Completion modes by country

Proportion of surveys completed by the distinct collection modes

	Online	Paper	Telephone	CAPI/CATI
Australia	95%	5%		
Belgium	62%	38%		
Canada	94%	3%	3%	
Czechia	84%	16%		
France	80%	9%	11%	
Greece	100%			
Iceland	100%			
Italy	100%			
Luxembourg	85%	15%		
Netherlands	90%	10%		
Norway	92%	8%		
Portugal	100%			
Romania	14%	85%		1%
Saudi Arabia			100%	
Slovenia	96%	4%		
Spain	8%		92%	
Switzerland	84%	16%		
United States				100%
Wales	86%	14%		

Note: CAPI: Computer assisted Personal Interviewing, CATI: Computer Assisted Telephone Interviewing.

The limited variation in collection modes within each country, entangle the impact of data collection mode with country-specific effects. This is evidenced in the variance diminution of the country average (how much of the outcome variation is explained by the country) when data collection modes are included in the model (see Box 7.8). Moreover, adding collection mode to the model does not significantly alter the country-level estimates of PREMs and PROMs. The model's multilevel structure implicitly accounts for survey collection mode as part of the country-specific effect.

Box 7.8. Adding collection mode variables has a minimal effect in country estimates of PREMS/PROMS

Taking PROMIS physical scale as an example, collection mode variables significantly improve model fit; however, these variables explain only 0.7% of the total variance in the outcome. Nevertheless, the inclusion of collection mode variables in the model has a small effect on the model intercept (Annex Table 7.C.2). Further explained in Section 7.7.7, the model intercept corresponds to the standardised overall measure of the outcome of interest. At the same time, including these variables diminishes the variance of the country-level random effect by 13% (Annex Table 7.C.2). This translates into smaller deviations of each country from the overall measure of the outcome.

Annex Table 7.C.2. A small increase in the model intercept counteracts with smaller country-specific random effects

Multilevel regression results of PROMIS physical with and without controlling for collection modes

PROMIS Physical	Not controlled by collection mode	Controlling for collection modes
Patient-level covariates (Fixed Effects)	**Estimate (Standard Error)**	
Intercept	46.14** (0.42)	46.34** (0.4)
MALE_std	2.07** (0.06)	2.05** (0.06)
Age2_std	-0.65** (0.07)	-0.63** (0.07)
Age3_std	-0.42** (0.08)	-0.36** (0.08)
Age4_std	-3.5** (0.09)	-3.31** (0.09)
Gender_missing	-1.61** (0.12)	-1.58** (0.12)
AGE_missing	0 (0.42)	0 (0.42)
Paper		-1.24** (0.12)
Telephone		-0.38 (0.23)
CAPI_CATI		0.77 (1.69)
Random effects	**Variance (proportion)**	
Country level	3.27 (4.07%)	2.84 (3.53%)
Practice level	2.23 (2.78%)	2.18 (2.71%)
Patient level	74.94 (93.15%)	74.87 (93.07%)
Other parameters		
Loglikelihood	-375 584.2	-375 529.7
Deviance	751 168.4	751 059.4
N of obs	104 768	104 768

Note: Model specifications are detailed on Section 7.7.7 model (1.) equation (1.). ** p-value<0.001, * p-value<0.05. PROMIS® Scale v1.2 – Global Health component for physical health is a T-score metric with a range of 16-68, and a good-fair cutoff of 42, higher values represent better physical health.
Source: OECD PaRIS 2024 Database.

Country estimates of PROMIS physical scale with and without accounting for collection modes

Collection mode variables are irrelevant for country estimates. Annex Table 7.C.3 shows that there are no statistically significant differences in the per-country estimates of the PROMIS physical scale, and this result is repeated for all PaRIS ten key indicators.

Annex Table 7.C.3. No statistical differences between estimates with and without controlling for collection modes

PROMIS physical scale score by country. Estimates include all patients.

	Estimate w/o c. modes (Comparative interval)	Estimate with c. mode (Comparative interval)
Australia	47.5 (46.7-48.3)	47.6 (46.9-48.3)
Belgium	46.0 (45.4-46.7)	46.5 (45.9-47.2)
Canada	47.8 (47.1-48.5)	47.9 (47.2-48.6)
Czechia	46.5 (45.9-47.2)	46.7 (46.1-47.3)
France	45.8 (45.2-46.4)	45.9 (45.3-46.5)
Greece	46.3 (45.7-47.0)	46.4 (45.7-47.0)
Iceland	44.8 (44.1-45.6)	44.9 (44.2-45.6)
Italy	44.6 (43.9-45.3)	44.6 (44-45.3.0)
Luxembourg	46.4 (45.6-47.1)	46.6 (45.9-47.3)
Netherlands	48.3 (47.6-48.9)	48.4 (47.7-49.0)
Norway	47.9 (47.3-48.6)	48.0 (47.4-48.6)
Portugal	43.4 (42.7-44.0)	43.4 (42.8-44.0)
Romania	41.9 (41.2-42.6)	42.9 (42.3-43.6)
Saudi Arabia	46.6 (45.9-47.2)	47.0 (46.3-47.6)
Slovenia	47.3 (46.6-47.9)	47.4 (46.7-48.0)
Spain	44.6 (43.9-45.2)	44.9 (44.3-45.5)
Switzerland	48.4 (47.7-49.0)	48.6 (47.9-49.2)
United States	48.1 (46.5-49.8)	47.6 (45.6-49.6)
Wales	45.0 (44.4-45.7)	45.2 (44.6-45.8)

Note: Estimates are calculated over the total number of valid patients (including patients without chronic conditions) thus estimates vary from those presented on Chapter 2, table 2.2. c.mode = collection mode. PROMIS® Scale v1.2 – Global Health component for physical health is a T-score metric with a range of 16-68, and a good-fair cutoff of 42, higher values represent better physical health.
Source: OECD PaRIS 2024 Database

Notes

[1] Indicator per outcome. Generally, a larger number of items tends to improve reliability, as it provides a more comprehensive and diverse set of indicators for the construct being measured.

[2] The sum of the error variances at item level, also known as the measurement error.

[3] In general, a Cronbach's alpha value above 0.70 is considered acceptable for most social science research situations.

[4] Note: The target population are primary care service users aged 45 and over living in the community.

Annex A. The development of PaRIS: A collaborative effort

The PaRIS-SUR consortium

The International PaRIS-SUR Consortium supported the development of the survey tools and survey design, implementation, testing and data collection and data analyses. The Consortium was led by NIVEL, the Netherlands Institute for Health Services Research (NIVEL); Mieke Rijken, Dolf de Boer and Judith de Jong. Nivel also contributed to questionnaire development, data analysis and scientific reporting. Other contributors from NIVEL were Rob Timans (supporting data collection, variable design, data analysis, scientific reporting), Peter Spreeuwenberg (data analyses and analysis plan), Peter Groenewegen (analysis plan, variable design, scientific reporting), Wienke Boerma (supporting data collection and variable design) and Astrid Doorduijn (supporting data collection).

The University of Exeter contributed to questionnaire development, data analysis plan and data collection support, (José María Valderas, Ian Porter, Jonathan Evans, Jimmy Martín Delgado), Optimedis contributed to questionnaire development, data analysis plan and data collection support (Oliver Groene and Jannika Bloemeke-Cammin), the Avis Donabedian Research Institute (FAD) contributed to questionnaire development, data collection support and variable design (Rosa Suñol, Marta Ballester, Pilar Illarramendi, Marc Gibert), IPSOS contributed to questionnaire testing, translation, survey design and data collection (Rachel Williams, Laura Thomas, Jean-Michel Lebrun, Claire Deverill, Amun Rehsi, Lucija Bosnjak, Maya Bozhikova, George Worlledge and Laura Threadgold). cApStAn contributed to translation, linguistic quality assurance and quality control of translations (Elica Krajceva, Danina Lupsa, Roberta Lizzi, Steve Dept).

National project managers

National project managers (NPMs) and their teams played a central role in the development and implementation of PaRIS in the countries. NPMs supported the translation and testing of survey instruments, the co-ordination with stakeholders in the country, recruitment and sampling of practices and patients, data collection, communication and often provided essential national context information.

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Greece	Daphne Kaitelidou, Olympia Konstantakopoulou, Olga Siskou
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Glossary

Adverse event	Event or circumstance that could have resulted, or did result, in unnecessary harm to themselves, such as not getting an appointment when needed; receiving a wrong or delayed diagnosis or treatment; or experiencing problems with communications between health care professionals.
Care continuity	Consistent and seamless provision of healthcare services over time, co-ordinated across different providers and care settings.
Care co-ordination	Organising patient care activities and sharing information among all of the participants concerned with a patient's care to achieve safer and more effective care.
Care managers	Healthcare professionals responsible for co-ordinating care, ensuring patients receive appropriate treatments and follow-ups.
Care plan	A written agreement between an individual and their healthcare professional outlining the type of care to be provided over an extended period, how the care will be delivered, and the individual's responsibilities in managing their care.
Chronic care	Healthcare services focused on managing and improving outcomes for people with chronic conditions.
Chronic condition	A long-term health condition requiring ongoing care and management.
Confidence to self-manage	Degree of confidence to manage one’s own health and well-being
Co-production of health care	The active participation of individuals in managing their own health, encompassing self-management, co-ordination of care, shared decision-making, and choosing treatments in collaboration with healthcare professionals.
Experienced co-ordination	Extent to which a person experiences a seamless and continuous journey through different healthcare practices and settings.
Experienced quality	Overall measure of how a person rates the care they have received over the past 12 months.
Family doctors	General practitioners providing comprehensive and continuing care for individuals and families in a community irrespective of age, sex and illness.
General health	Individual’s perception of their overall health status.
Generalist care	Comprehensive, continuous, and co-ordinated care that addresses a wide range of health needs, considering patients as whole individuals, regardless of age, sex, or health condition.
Goal-oriented care	Care focusing on achieving specific health outcomes that align with a patient's preferences and life circumstances.
Healthcare capabilities	The skills and resources of patients to manage their care.
Healthcare provider	An individual or organisation delivering medical or associated services, such as primary care practices , outpatient specialist practices, clinics, hospitals, laboratories, imaging centres, medical insurance companies, etc.
Medical record	The comprehensive collection of information containing a patient’s health history, treatments, and outcomes.
Mental health	Emotional, psychological, and social well-being, influencing how individuals think, feel, and act.
Multimorbidity	Multiple chronic conditions (multimorbidity) refers to the presence of two or more chronic conditions in an individual.
Out-of-hours care	Healthcare services provided outside of regular clinic hours, including evenings, weekends, and holidays.
Patient empowerment	Enabling patients to take control of their health decisions and actions.
Patient engagement	Active involvement of patients in their own care, including planning and decision-making.
Patient participation	Involvement of patients in healthcare processes, including care plan design and quality improvement.
Patient-reported experience measures (PREMs)	Patients' feedback on the quality and nature of the care and process of healthcare they received.
Patient-reported outcome measures (PROMs)	Health outcomes directly reported by the patient without interpretation by healthcare providers.

People-centred care	Healthcare that are organised around the preferences, needs, and values of people.
Person-centred care	Individual care that are organised around the preferences, needs, and values of the person. It can be understood as the overall measurement of the experience of people-centredness of a given health system, from the perspective of the patient.
Physical health	Individual’s ability to carry out everyday physical activities, considering degree of pain and fatigue.
Primary care / Primary healthcare	First point of contact with the health service for a wide range of new and long-term health problems. They are frequently delivered by teams of health care professionals, usually co-ordinated by a family doctor or a general practitioner working in a primary care centre.
Primary care practice / Practice	Healthcare settings where people receive care, such as practices or medical offices, rather than - but not excluding - individual healthcare professionals. These settings may vary in size, ranging from small single-practitioner offices to larger facilities with multiple healthcare professionals.
Primary care practitioner/ professional	Healthcare workers delivering generalist care, covering a broad spectrum of health needs, including the management of chronic conditions. This can be doctors, nurses, and allied healthcare professionals.
Quality of life	The general well-being of individuals, encompassing physical health, mental health, and social functioning.
Responsiveness	The ability of the healthcare system to meet patients' needs and preferences in a timely manner.
Social functioning	Extent to which a person can carry out their usual social activities and roles.
Trust in healthcare system	Degree to which a person trusts the healthcare system overall.
Well-being	Degree to which a person feels positive in terms of their mood, vitality, and fulfilment.

Does Healthcare Deliver?

Results from the Patient-Reported Indicator Surveys (PaRIS)

For far too long, we have lacked meaningful insights into people's experiences of healthcare and their health outcomes. The Patient-Reported Indicator Surveys (PaRIS) is a groundbreaking OECD initiative that captures health outcomes and experiences from over 107 000 patients aged 45 years and older across more than 1 800 primary care practices in 19 countries. Traditionally, health system performance indicators have focused on inputs and processes as well as clinical indicators rather than on how healthcare delivers care from patients' perspectives and how it influences their lives. PaRIS fills this gap. It offers a unique set of indicators revealing how people with chronic conditions experience healthcare and how it affects their lives. By highlighting what matters most to patients, PaRIS provides valuable insights into how healthcare models perform in delivering meaningful and people-centred care and what can be done to improve outcomes and experiences of care for people with chronic conditions.

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