Measurement of self-reported forgone health care and its reasons

Towards tackling unmet health care need

World Health Organization

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ISBN 978-92-4-012072-3 (electronic version)
ISBN 978-92-4-012073-0 (print version)

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Suggested citation. Measurement of self-reported forgone health care and its reasons: towards tackling unmet health care need. Geneva: World Health Organization; 2026. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at https://iris.who.int/.

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Cover photo credit: *© WHO / Christopher Black. Mobile medical team in Afghanistan. People cross a river near Khaspak village, Badakhshan Province. In many contexts, distance, travel time, travel cost and negotiation of adverse weather conditions or inadequate roads associated with reaching health care providers contribute to unmet health care needs. Adapted service delivery modalities can help to address this, as part of primary health care-oriented health systems strengthening.*

Contents

Acknowledgements

WHO gratefully acknowledges the many individuals who contributed to the development of this working paper. The paper is a deliverable of WHO's strategic programming initiative on the measurement of unmet health care need and barriers to effective coverage with health services. The initiative is advanced by the cross-cutting WHO Working Group on Unmet Health Care Need and Barriers. This document should be considered as a tool for sharing relevant findings for advancing future research and normative work on the quantitative measurement of unmet health care need (specifically, the component of self-reported forgone care and related barriers).

WHO's cross-cutting strategic programming initiatives are advanced under the general oversight of Alia El-Yassir (Director of the Department for Gender, Human Rights, Equity and Prevention of Sexual Misconduct, WHO headquarters, Geneva, Switzerland) and Razia Pendse (Chef de Cabinet, WHO Director-General's Office, WHO headquarters, Geneva, Switzerland), in coordination with relevant parts of WHO.

Theadora Swift Koller (Department for Gender, Human Rights, Equity and Prevention of Sexual Misconduct, WHO headquarters, Geneva, Switzerland) instigated and coordinated the WHO Working Group on Unmet Health Care Need and Barriers, anchored the collaborative design of the key research objectives and issues to be addressed, and commissioned, oversaw and co-drafted the paper. Megumi Rosenberg (WHO Centre for Health Development, Kobe, Japan) and Gabriela Flores (Performance, Financing and Delivery, WHO headquarters, Geneva, Switzerland) provided technical insights, co-drafted and contributed to the refinement of the paper, including the proposed module/question set.

The desk review, qualitative and quantitative analysis, initial drafting of findings and writing of this working paper were commissioned by WHO to the Health Data Analytics Team at the Australian National University, Canberra, Australia. The principal investigator and lead writer of the paper was Paul Kowal (Australian National University, Canberra, Australia). Team members included Ajay Adhikari, Meghana Bhat, Daniel Miller, Faith Ng and Tomoko Sugiura of the Health Data Analytics Team, Australian National University, Canberra, Australia.

During 2024-2025, the following additional WHO staff members or consultants of the WHO Working Group contributed to identifying the need for the paper and to its technical design and/or review (listed alphabetically): Cristin Alexis Fergus, Ernesto Bascolo, Jessica Chi Ying Ho, Anna Coates, Fahdi Dkhimi, Isabel Espinosa, Gabriela Flores, Andre Griekspoor, Natalia Houghton, Ahmad Reza Hosseinpoor, Katherine Kirkby, Joana Lima, Claude Meyer, Nirmala Naidoo, Devaki Nambiar, Ndungla Nangkeng, Taiwo Oyelade, Briana Rivas Morello, Nicole Valentine and Teresa Zakaria.

Special thanks are due to the external experts, partners and WHO staff who participated in a meeting in May 2025 and/or reviewed materials to provide technical input to the emerging analysis for the paper: Vas Yiengprugsawan (Asian Development Bank Health Sector Group, Manila, Philippines), Nawi Ng (University of Gothenburg, Gothenburg, Sweden), Julie Byles (University of Newcastle, Newcastle, Australia), Flavia Cristina Drumond Andrade (University of Illinois Urbana-Champaign, Urbana, United States of America), Samantha Smith (Economic and Social Research Institute, Dublin, Ireland), Ana Lorena Ruano (University of Bergen, Bergen, Norway), Srinath Reddy (Public Health Foundation of India, New Delhi, India), Owen McDonnell (Erasmus University, Rotterdam, The Netherlands), the members of the WHO Working Group and WHO staff members Maneeta Jain, Jayendra Sharma, and Ding Wang.

Thanks are also due to the following WHO experts who provided feedback on the revised draft module/question set in September 2025 (listed alphabetically): Cristin Alexis Fergus Anne-Marijn de Graafe, Natalia Houghton, Maneeta Jain, Ana Ortigoza, Sarah Thomson, Mark Humphrey van Ommeren and Benoit Varenne. The revised module was also reviewed by Marina Karanikolos (London School of Hygiene and Tropical Medicine, London, United Kingdom of Great Britain and Northern Ireland) and Walaiporn Patcharanarumol (Ministry of Public Health, Bangkok, Thailand).

WHO gratefully acknowledges the financial support of Bloomberg Philanthropies, New York, United States of America, towards the development and publication of this working paper. The contents of this document can under no circumstances be regarded as reflecting the position of Bloomberg Philanthropies.

Abbreviations

CFPS	China Family Panel Studies
CHARLS	China Health and Retirement Longitudinal Study
CI	confidence interval
CLHLS	Chinese Longitudinal Healthy Longevity Study
EHIS	European Health Interview Survey
EUROSTAT	Statistical Office of the European Union
EU-SILC	European Union Statistics on Income and Living Conditions
GP	general practitioner
HAALSA	Health and Aging in Africa: Longitudinal Study in South Africa
LASI	Longitudinal Ageing Study in India
MCSS	Multi-Country Survey Study
NSS	National Sample Survey [India]
SAGE	Study of global AGEing and adult health
SDG	Sustainable Development Goal
UHC	universal health coverage
WHO	World Health Organization
WHS	World Health Survey
WHS+	World Health Survey Plus

Part 1
Introduction and methods

1

Part 1. Introduction and methods

Purpose

The World Health Organization (WHO) has commenced work to standardize the definition and measurement of unmet health care need. This supports the commitments to equity and action on overcoming barriers to health care in WHO's Fourteenth General Programme of Work, 2025–2028 *(1)*. It also demonstrates accountability in responding to resolution WHA76.4, endorsed by the Seventy-sixth World Health Assembly in 2023, which requested WHO to review the importance and feasibility of using unmet health care need as an additional indicator for monitoring universal health coverage (UHC) *(2)*.

This technical report shares available definitions of the different types of unmet health care need and contributes to the global cataloguing and analysis of existing measurement approaches. The focus of the paper is on measuring self-reported forgone health care (as a component of unmet health care need) and identifying the barriers to receiving needed care.

Background and rationale

The measurement of unmet health care need has a long history. For example, studies implemented in the 1990s in Canada and the United States of America included questions on unmet medical or health care need *(3)*. The 2004 National Sample Survey in India included a question on unmet need for treatment-seeking *(4)*. Since 2009 – based on data collected as part of the European Union Statistics on Income and Living Conditions survey (EU-SILC) and the Commonwealth Fund's International Health Policy Survey – the Organisation for Economic Co-operation and Development (OECD) has used self-reported unmet need for medical and dental care to evaluate access to essential health services *(5, 6)*. In 2014, a special module with questions on unmet health care need was introduced in the European Social Survey *(7)*. Also in 2014, Member States of the Pan American Health Organization committed to achieving universal health coverage through resolution CD53.R14, which included a priority to "identify the unmet and differentiated needs of the population", although this was not accompanied by guidance on measurement approaches *(8)*. The 2017 European Pillar of Social Rights states that "everyone is entitled to timely access to good quality affordable health care", which the European Commission operationalized via a core indicator in its Social Scoreboard, based on foregone-care-related questions included in the European Health Interview Survey (EHIS) *(9, 10).*

The COVID-19 pandemic acted as a catalyst for greater recognition of unmet health care need *(11)*. In 2020, results from a WHO study estimated that nearly 90% of countries experienced disruptions to essential health services during the pandemic, with low- and middle-income countries disproportionately affected *(12)*. The pandemic-related movement restrictions that were enforced in countries created conditions for a natural experiment to examine how delayed or forgone health care impacted future health outcomes and health care needs. Evidence points to the significant effects of unmet health care need on health outcomes *(13–15)*.

Measurement of unmet health care need could be used to complement the two existing UHC metrics on service coverage and financial protection *(11),* as well as for monitoring health system performance, health workforce planning *(16–20)* and equity *(21)*. The WHO regional offices for the Americas and Europe already include unmet health care need in their indicator dashboards as an additional formal metric in the measurement of progress towards UHC *(22, 23)*.

UHC is achieved when all people have access to the full range of quality health services they need, when and where they need them, without financial hardship. Primary health care, as a foundation of UHC, is a common entry point for people into health systems and contributes to continuity of care and reduced morbidity, hospitalization and mortality, as well as helping to improve the efficiency of the health care system *(24)*. Regardless of the entry point for access to care, individuals who forgo or delay needed medical care can exacerbate existing health problems, potentially leading to an increase in the use of more costly health care services at a later point in time. Table 1 describes these potential consequences, alongside the key factors driving forgone and delayed health care, and important considerations for empirical analysis.

Table 1.
Potential consequences of unmet health care need

Unmet need trajectory	NON-USE OF HEALTH CARE	DELAYED USE OF HEALTH CARE
Describe	Need is perceived, but individual does not at any time convert that need into a demand for health care	Need is perceived and converted into a demand for health care, but there is a delay in seeking care, and/or receiving care
Examples	• Short-term illness that resolves without medical attention • Ongoing pain, disability or discomfort (constant, diminishes or worsens with time)	• Individual decides to wait before seeking medical attention (which could be emergency hospital care) • Individual is referred by general practitioner (GP) to consultant, specialist or other service, and is placed on waiting list
Health implications could include...	• No long-term implications • Development of preventable health problems • Poor quality of life or sudden death (without medical intervention)	• Poor or worsening health • Poor quality of life • Attenuated potential for recovery
Key driving factors	• Factors driving health care demand (e.g. individual, system, environment)	• Factors driving health care demand (e.g. barriers to access, leading to worsening condition and more advanced care needs) • Factors driving health care use (e.g. bottlenecks in system causing delays)
Implications for empirical analysis	• Specify service • Specify condition • Specify driving factors • Specify time period	• Analyse delays in converting need to demand • Identify diverted demands (e.g. conditions that if treated earlier could have been treated at lower levels of specialization) • Assess waiting lists

Note: Additional scenarios illustrating the interrelationships between health care need, demand, supply and access are available in Rodriguez Santana et al., 2023 (25); see Table 2.

Source: Smith & Connolly (26), with minor adaptations by the authors; reproduced with permission.

The 2023 WHO and World Bank global monitoring report on UHC profiled exemplary survey-data estimates of unmet health care need for selected countries and WHO regions, underscoring that advances in measuring unmet health care needs and understanding why populations forgo care are key to accelerating progress towards UHC *(27)*. Although unmet health care need is widely recognized as an important equity and health system performance metric, no consensus definition or approach to its measurement currently exists. While useful for examining progress towards UHC and health system performance, the lack of standardized questions and survey methods limits the comparability of survey-based estimates within and across many countries. Developing standardized survey questions to derive estimates of self-reported forgone care would speed its integration into UHC monitoring frameworks, and optimize its potential for designing, monitoring and evaluating service coverage and health policies.

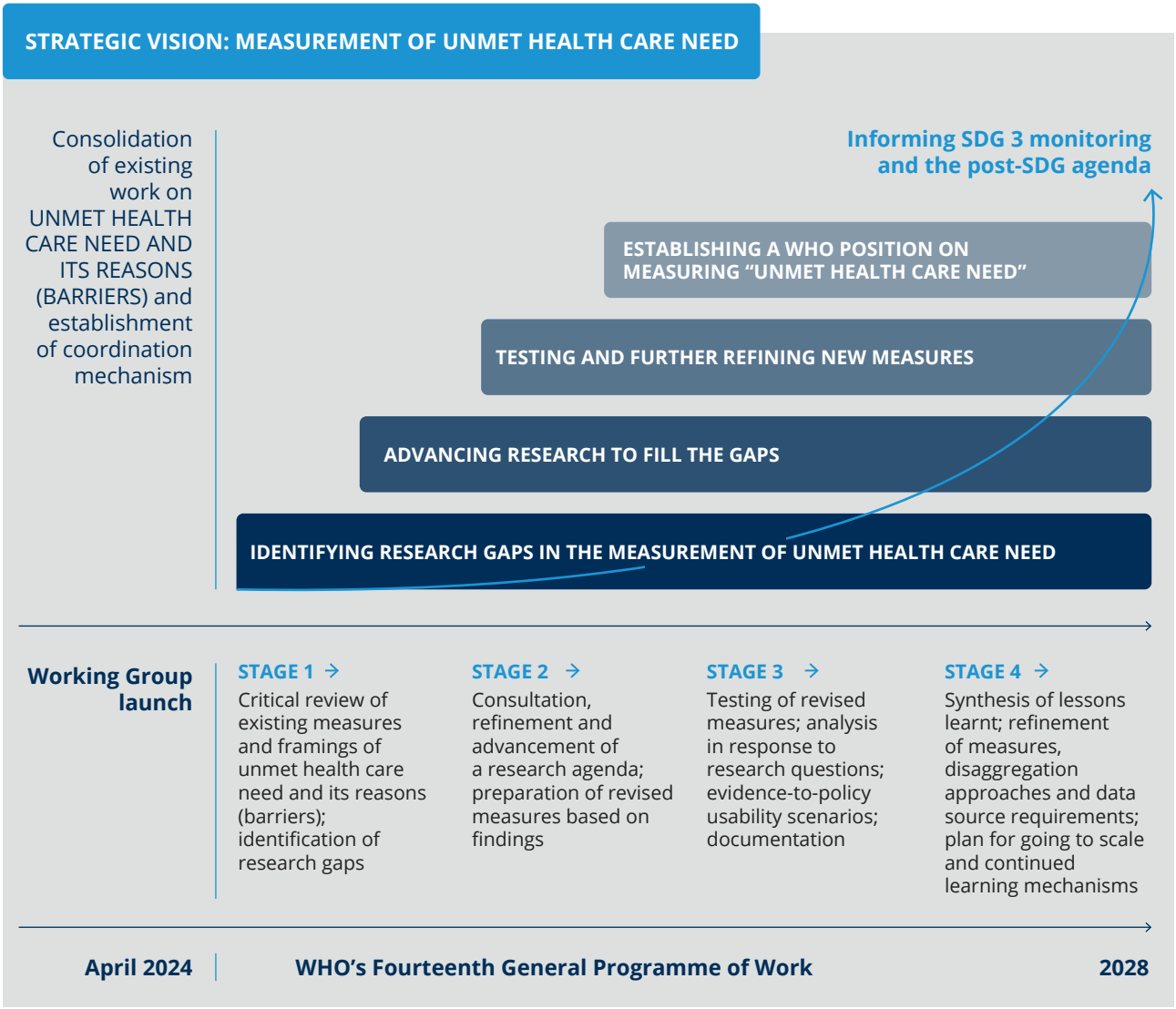
WHO Working Group on Unmet Health Care Need and Barriers

In response to resolution WHA76.4, WHO launched an internal technical working group in 2024 to advance research and normative work on the measurement of unmet health care need. Coordinated by the WHO Director-General's Office,[1] the cross-cutting group (henceforth referred to as the "WHO Working Group on Unmet Health Care Need and Barriers") comprises WHO headquarters staff working across technical areas, including health financing, data, analytics, impact assessment of WHO's General Programme of Work (delivery for impact), integrated health services, social determinants of health and health emergencies, as well as the WHO Centre for Health Development (the WHO Kobe Centre, Japan) and colleagues from WHO regional offices. (See Acknowledgements for a list of Working Group members from mid-2024 to mid-2025, when most of the inputs to this paper occurred.) The teams involved have been advancing related work (see Annex 1 for WHO-related publications and resources on unmet health care need and barriers).

The Working Group has two main aims: a) to advance the quantitative measurement of self-reported forgone care, as a component of unmet need; and b) to scale up the use of mixed methods approaches to assessment of barriers to effective coverage with health services at country level. The four-year workplan for 2024–2028 (subject to resource availability) for the first aim is shown in Fig. 1. This technical report is an output of stage 1 of the workplan. The need for a technical report was collectively identified by the Working Group, which also identified the domains of focus for the paper and a list of salient research needs (see Annex 2). The research was commissioned to the Australian National University, Canberra, Australia, building on an existing collaboration on unmet health care need.

[1] Through the strategic programming initiative on measurement of unmet health care needs and barriers to effective coverage with health services, led by the Department of Gender, Rights, Equity and Sexual Misconduct Prevention.

Fig. 1.
Four stages of WHO's approach to refining the measurement of unmet health care need



Methods and approaches

This technical report summarizes findings from a rapid review of literature on the measurement of unmet health care need, a desk review of questions on self-reported forgone care and its reasons in a subset of surveys, and a targeted analysis of this variable in selected surveys. The paper serves as input towards an emerging WHO position on the standardized quantitative measurement of self-reported forgone health care, as a component of unmet health care need.

The technical report addresses six research questions:

- How are types of unmet health care need defined, and how does self-reported forgone care sit within this conceptual landscape?
- Within a subset of surveys, which survey questions are currently used to capture self-reported unmet health care need?
- What are the similarities and differences in the wording of these questions?
- Is there any evidence of significant changes in findings when question formulation changes within a survey between waves?
- In which ways can questions on self-reported forgone health care be disaggregated?
- What are the characteristics – by inequality dimensions – of those with higher and lower levels of unmet health care need?

Methods included desktop research and a review of published and grey literature to identify a wide range of studies that include questions on unmet health care needs. The team's expertise allowed them to lean into snowballing techniques to identify additional surveys that have not had results published in the literature. Rapid literature reviews were also undertaken to address some (albeit not all) of the issues listed in Annex 2.

Two recently published studies provided a solid foundation for the rapid literature review. One was a global systematic review and meta-analysis of unmet needs for health care and long-term care, incorporating literature published up to June 2020 *(28)*. The other, which was a follow-up to the first study, involved a thorough examination of available data on unmet health and social care needs of older people in each WHO region *(29)*. Both studies were supported by the WHO Kobe Centre and were designed to be complementary to each other. The first study captured statistics published in the scientific literature, mainly from high-income countries. The second study revealed additional evidence from the literature as well as survey-data sources for a broader range of countries in each WHO region. While these studies had a focus on older populations, the research covered all types of surveys and adult populations (before narrowing down the scope to older populations).

Building on these resources, PubMed databases were searched for original articles that described surveys containing questions on unmet health care need or forgone health care. The search terms included: unmet health care need; forgone care; and forgone health care. These terms were then combined or tailored to address additional items requested by the WHO Working Group on Unmet Health Care Need and Barriers (see Annex 2). The inclusion and exclusion criteria were as follows:

- **inclusion criteria** – populations aged 18 years or older, published in English between 2000 and 2025, preferably using nationally representative study samples (subnational-level studies were included for countries where nationally representative data were limited);
- **exclusion criteria** – unmet need/forgone care related to specific diseases (for example, cancer, lupus), unmet need for family planning/contraception, and unmet need for information, social support, services and training.

Qualitative analysis

A total of 94 surveys were used for the qualitative analysis to ensure that a wide range of question formulations and response categories were captured. The survey instruments were identified through the literature review and professional connections.

A total of 210 questions about health care were identified from the 94 surveys, covering 152 countries across all WHO regions. Of the 210 questions, 135 asked specifically about unmet health care need: 35 questions on overall health care, 88 on outpatient care and 12 on inpatient care. All 135 questions were loaded into an Excel file to catalogue the question wording and response categories. The same was done for any follow-on questions related to reasons for not getting needed care. To support the development of a standard question set, the available questions were deconstructed into different elements related to, for example, timeframe, provider or service types, barriers and other elements. Researcher 1 led the review and compilation of the data, then researcher 2 checked and revised the results, after which the results were reviewed and discussed by the whole research team.

Examples from studies found by the literature review, coupled with guidance from WHO's *Handbook for conducting assessments of barriers to effective coverage with health services: in support of equity-oriented reforms towards universal health coverage (30)*, were used to map the reasons for self-reported forgone care onto the coverage domains of the Tanahashi framework for effective coverage *(31)*. Again, researcher 1 led the review and mapping, then researcher 2 checked and revised the results, after which results were reviewed and discussed by the whole research team. Any differences were reconciled to ensure that the categorization of reasons into barriers was consistent.

Quantitative analysis

The primary data sources for the quantitative analyses of survey questions on unmet health care need – and, specifically, forgone health care – were four WHO surveys, namely: the Multi-Country Survey Study (MCSS); the World Health Survey (WHS); the Study of global AGEing and adult health (SAGE); and the World Health Survey Plus (WHS+).

The quantitative analysis used the four WHO surveys plus a subset of surveys conducted in China and India, as these had large sample sizes and the majority had multiple waves of data collection. Descriptive analyses were used to generate prevalence estimates with 95% confidence intervals (CIs) and to disaggregate the results by selected population groups for an equity analysis (age, sex, residence/setting, education or wealth levels, and those living with no, one or more than one chronic condition). The majority of the studies did not have study weights – but when available, study weights were applied and noted.

Intersectional analyses, which involve disaggregation by a combination of sociodemographic categories (for example, poorer older women living in rural areas) and require very large sample sizes, were done in pooled samples for selected multi-country studies. For equity monitoring and policy purposes, the results of intersectional analyses can be particularly useful to identify specific "at risk" population groups for targeted policy.

Embedded outputs

As part of the 2024–2028 workplan of the WHO Working Group on Unmet Health Care Need and Barriers (Fig. 1), this paper aims to produce five outputs.

1. A working definition of self-reported forgone health care (to guide output 2, below).
2. A set of survey questions to be used for further testing the measurement of self-reported forgone health care.
3. A question about the reasons for self-reported forgone care, with response categories guided by current survey approaches and the Tanahashi framework for effective coverage.
4. A question set for three selected barrier domains of the Tanahashi framework: financial accessibility; acceptability; and effective coverage.
5. Suggested ways to further advance the research on the key measurement issues identified by the WHO Working Group (Annex 2).

This technical report informs stage 1 of the workplan for 2024–2028 (Fig.1) and will be used to advance stage 1 in anticipation of stage 2 activities.

Consultation

Bilateral consultations were undertaken with WHO colleagues and other experts through email and online discussions between November 2024 and September 2025. A workshop on 1 May 2025 included WHO Working Group members and external experts (see Acknowledgements). Feedback from these individuals and groups was reviewed by the research team and incorporated into the methods and results, as well as shared and discussed with WHO colleagues. A peer review of the completed draft paper was undertaken, involving external and WHO collaborators (see Acknowledgements).

Outline of the paper

This paper is divided into six parts, as follows:

- introduction and methods;
- key definitions and conceptual framings underpinning the work;
- a discussion of self-reported forgone health care questions in a subset of surveys and related analyses, linking to Annex 3, Annex 4 and Annex 5;
- an exploration of supplemental questions on barriers to effective coverage with health services;
- a proposal for a module with questions for further testing and refinement; and
- discussion, next steps and areas for future research.

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Part 2

Key definitions and conceptual framing

2

Part 2. Key definitions and conceptual framing

Overview

The measurement of unmet health care need – itself a complex and multi-dimensional concept – is shaped by how need is defined and, at the individual level, by previous interactions with the health system. Additionally, the concept of unmet health care need is dynamic: need is influenced by a range of factors, including health system performance, individual and community values, social determinants of health, health literacy and expectations.

Currently, there is neither an agreed standardized definition nor a consensus conceptual framework for unmet health care need. In part, this is due to the diversity of health system contexts and country-specific policy objectives when using this metric to evaluate health system effectiveness and to identify inequities in effective coverage. The lack of an agreed standardized definition of unmet health care need poses challenges for its measurement and for making cross-country comparisons.

For the purpose of clarity in this paper – acknowledging the lack of a global consensus and drawing on a range of sources – Part 2 provides operative definitions for the following concepts:

- health care need – perceived or unperceived;
- unmet health care need;
- forgone health care as a component of unmet need;
- partially unmet health care need;
- delayed health care;
- self-reported forgone health care (the primary focus of this paper);
- self-reported anticipatory forgone health care due to perceived barriers; and
- refused health care.

Key definitions

Health care need – perceived or unperceived

There are many definitions of health care need. According to a 2023 paper on *Need, demand, supply in health care: working definitions, and their implications for defining access (1)*:

> *Need is the capacity to benefit from health care. Health care means treatment, prevention and supportive care that is effective – either alone or as part of a care pathway – in improving, maintaining, or slowing the deterioration of health now or in the future (or both). Need is for 'appropriate' health care: this excludes care that is known to be cost-ineffective and includes cost-effective care. For care of unknown cost-effectiveness, need is for the right care provided in the right place and at the right time.*

Health care need may be perceived or unperceived by the individual. A perceived need may arise in response to a new health condition, medical issue, injury or preventive health visit, or from previous interactions with a health provider. At the community level, perceived need could also be influenced by exposure to public health messages about preventive measures, which may shape awareness of the need for such services.

Unperceived need refers to a situation where individuals may not recognize or realize that they have a health condition or medical issue that could be addressed through screening, diagnosis or intervention. The reasons for this lack of recognition may relate to: limited awareness of preventive measures, symptoms or health conditions; a belief that certain symptoms are normal and do not require medical attention; misunderstanding or ignorance about the severity or treatability of a condition; cultural or societal factors that minimize or dismiss certain health issues; or socioeconomic and other factors that result in conscious or subconscious de-prioritization of health due to the need to focus on more pressing basic needs. Levels of unperceived health care need may also be influenced by insufficient health literacy, poor quality or integration of care, or public health systems that do not promote routine health screenings or check-ups. Unperceived health care need could be identified through clinical assessments or diagnostic testing, health surveys incorporating objective measures (for example, blood pressure), administrative data (showing utilization patterns) or – among typically more advantaged populations experiencing digital inclusion – wearable devices and digital health tools (such as fitness trackers or health applications) *(1)*.

Unmet health care need

The concept of "unmet health care need" can be defined in various ways depending on the context, perspective and criteria used. Generally speaking, an unmet health care need refers to a situation where an individual requires medical attention, treatment or health care services but does not receive them or is unable to access them due to various barriers. This could be a perceived/recognized need or a latent need that is unperceived/unrecognized. As explored in the previous subsection, this latter group of individuals are unlikely to seek treatment because they do not perceive a need for it, even though they may benefit from medical attention.

Table 2.
Definitions of unmet health care need

SYSTEM- OR POLICY-LEVEL DEFINITIONS	
WHO and World Bank, 2023 *(2)*	Collates multiple definitions, including: • Bakhuti et al. (2005) – individuals with unmet needs are those who have the potential to realize a health benefit from a given service, which may differ from perceived need due to a variety of social, cultural and economic factors *(3)*; and • Rahman et al. (2022) – an individual is categorized as having unmet needs if they are unable to access quality care when needed arising for various reasons, including barriers related to the availability, affordability, accessibility, and acceptability of services *(4)*.
Academy of Medical Sciences, 2017 *(5)*	Unmet need for healthcare can be seen as covering a spectrum of healthcare needs that are not optimally met … [from] "unexpressed demand" [to] … "expressed demand that is sub-optimally met".
Allin, Grignon & LeGrand, 2010 *(6)*	Unmet health care need is defined as the difference between the health care services judged necessary for a health problem and the actual services received. An unmet need is the absence of any, or of sufficient, or of appropriate care and services, and could include: 1) unperceived unmet need; 2) subjective, chosen unmet need; 3) subjective, not-chosen unmet need; 4) subjective, clinician-validated unmet need; and 5) subjective unmet expectations.
Watt, 2018 *(7)* Hart, 1971 *(8)*	The availability of good medical care tends to vary inversely with the need for it in the population served. The marginalized and hard-to-reach populations have poorer health and still have limited access and/or utilization of healthcare services because of various reasons and barriers related to availability, accessibility, acceptability, quality care … this may indicate unmet need.
OPERATIONAL-LEVEL/WORKING DEFINITIONS	
Pan American Health Organization, 2024 *(9)*	Unmet healthcare needs …[as] forgone care, expressed as the share of individuals who had a healthcare need but did not consult an appropriate provider or did not seek care at all for any reason.
WHO, 2024 *(10)*	Proportion (%) of the population that reports perceiving a need for health care but not receiving it over a given period.
Eurostat, 2024 *(11)*	Questions included in EU-SILC on medical and dental examination or treatment refer to a person's own assessment of whether they needed examination or treatment for the specific types of health care (medical and dental) in the previous 12 months but did not receive it or did not seek it. The variables on unmet needs for health care target two broad types of services: medical care and dental care.
WHO, 2024 *(12)*	Person who realizes that she/he/they need health services but is unable to access that care (including services, medications or other health products) due to a range of barriers. Can occur prior to establishing initial contact with health services or at any point along the patient pathway and continuum of care. Forgone care differs from unmet need: the latter can occur without someone realizing that they need care/services.

Forgone health care as a component of unmet need

Forgone health care is a specific type, or component, of unmet health care need. It occurs when an individual consciously decides, or is forced by circumstantial factors, to not seek or receive medical care – despite recognizing the need for care. Forgone health care can result in delayed diagnosis, progression of illness, higher mortality, increased treatment costs and indirect costs (for example, missed work). The reasons for forgone health care, often referred to as "barriers" in this paper, relate to both supply-side and demand-side factors. Barriers are discussed in more detail in Part 4.

The distinctions and relationships between unmet health care need and forgone health care are explained below.

- Unmet health care need includes all individuals with a health condition/issue or potential for a health condition that could benefit from medical examination (including proactive screening) and/or treatment but do not/cannot seek or receive services.
- Forgone health care is a component of unmet health care need and involves an individual, despite recognizing a need, and either by decision or forced by circumstances:
    - completely forgoing care;
    - delaying the seeking of care; or
    - receiving some but not all of the needed care.
- In this paper, forgone health care:
    - is relevant to preventive, curative, rehabilitative and palliative care;
    - is relevant to preventive screening and other diagnostics, treatment of existing conditions, and medical products (such as medicines and assistive devices);
    - is relevant to traditional medicine practices (where recognized by national authorities) as part of a potential treatment pathway for a given condition; and
    - can occur prior to establishing initial contact with health services or at any point along the patient pathway and continuum of care.

Forgone health care can also be "anticipatory" (see definition below).

Health promotion services (for example, iron fortification of flour, banning tobacco smoking in public places), which operate at the population level to modify risk factor exposure, require different conceptualization of indicators and are outside the scope of the paper.

Partially unmet health care need

A partially unmet health care need refers to a situation where an individual has a recognized health concern/condition that requires care and for which they have received some form of health care service, but not sufficient to fully address their need or to achieve optimal health benefits or outcomes (see Table 3).

Table 3.
Examples of partially unmet health care need

ISSUE	EXAMPLE
Insufficient frequency of services	Individual may experience suboptimal control of blood sugar levels due to not getting regular appointments
Incomplete treatment	Individual does not complete a full course of recommended treatment due to cost, time or perceived improvement
Lack of comprehensive care	Individual receives medications for a complex mental health condition but does not receive psychotherapy or group therapy
Lower quality of care	Individual receives lower quality of care than required, or care is not appropriate to their health condition
Partial services	Individual is referred for diagnostic tests and to see a specialist, and may attend the consultation, but the tests are not done or the results are significantly delayed

Delayed care-seeking

An individual may delay seeking health care services even though they may need care. In some cases, the delay may stretch into never seeking care. For episodic conditions, pain from a minor injury or some infectious diseases (such as seasonal bacterial or viral infections), the individual may fully recover and the delayed or forgone health care may have no or limited impact on health and well-being. In other situations where an acute or chronic health condition requires care, the individual may eventually seek and receive care, but the delay in accessing care may have worsened the condition or could lead to worse health outcomes and higher mortality.

Self-reported forgone health care

This paper specifically focuses on "self-reported forgone health care". Drawing from WHO's *Handbook for conducting assessments of barriers to effective coverage with health services: in support of equity-oriented reforms towards universal health coverage* (2024) *(12)* and maintaining the definitional attributes described for forgone health care in the previous subsection, self-reported forgone health care refers to a situation where:

- individuals report that they needed health care but did not receive health services, diagnostics, medications or other health products (either in full or in part) for their reported health need.

Quantitative surveys[2] are an important source for capturing this information to produce quantitative estimates of the levels of forgone health care in a target population. Inclusion of self-reported forgone health care indicators in surveys and subsequent UHC-related analyses represents a commitment to patient-centred and participatory evidence-gathering processes, by which the perspectives and expressed needs of individuals are valued. It also represents an acknowledgement of systems thinking to find solutions for closing coverage gaps on the road to UHC, as self-reported forgone care indicators give insights into the health system bottlenecks that result from malfunctions/underperformance across different functions. Such performance deficiencies often compound and intersect in ways that disproportionately affect people experiencing socioeconomic disadvantage, which can be illuminated through disaggregation of the indicators by equity stratifiers. Inclusion of self-reported forgone health care in surveys also acknowledges the role of wider social determinants – including poverty and gender inequality, among others – in inhibiting progress towards UHC. This evidence can be leveraged for cross-sectoral work by national authorities and partners to address the upstream determinants of health and health equity.

While recognizing their value, it is also important to understand the artefacts of data collection methods for self-reported forgone health care indicators in surveys. For instance, the survey context can significantly influence how an individual expresses their health care experiences. Factors such as trust in the survey administrator (person and/or organization), fear of retaliation by local health providers, shame or discomfort in disclosing demand-side factors influencing forgone care, and lack of autonomy within the household to clearly describe to an interviewer the reasons for forgone care can all lead to a person not admitting to and/or not truthfully describing the incident(s). This is an issue for all surveys and may lead to underreporting of forgone health care. There is also an additional subset of people who fall outside survey sampling frameworks (for example, homeless or internally displaced populations who may lack registration or a physical address, and hence remain invisible; or poorer rural populations who may only have access to a 2G or 3G phone network, so are excluded from phone surveys administered through a 5G carrier). These examples reflect general limitations with surveys; additional, specific limitations of survey questions on self-reported forgone care are described at various points throughout this paper.

[2] Qualitative research and participatory action research are also important sources of information and data, but are outside the scope of this paper.

Self-reported anticipatory forgone health care due to perceived barriers

The official list of outcome indicators of WHO's Fourteenth General Programme of Work[3] includes: "Percentage of population reporting perceived barriers to care (geographical, sociocultural, financial)" (indicator 35). Through exchanges for this paper, Professor Nawi Ng and colleagues at the University of Gothenburg, Sweden, have termed this as "anticipatory" forgone care – to distinguish it from forgone care that has already happened, while making the connection that perceived barriers are likely to lead a person to forgo necessary care in the future. Sources of data for this indicator include the Demographic and Health Surveys, as reported in the 2023 WHO and World Bank global monitoring report on UHC *(2)*.

Refused health care

Forgone care can be due to provider refusal related to factors such as ability to pay, nationality/migrant status or other types of discrimination. Not all types of refusal are documented in surveys. As an example, the long version of WHO's MCSS includes the following question: "In the last 12 months, were you ever refused health care because you could not afford it?" (see Annex 4 and Annex 5).

Conceptual frameworks underpinning this paper

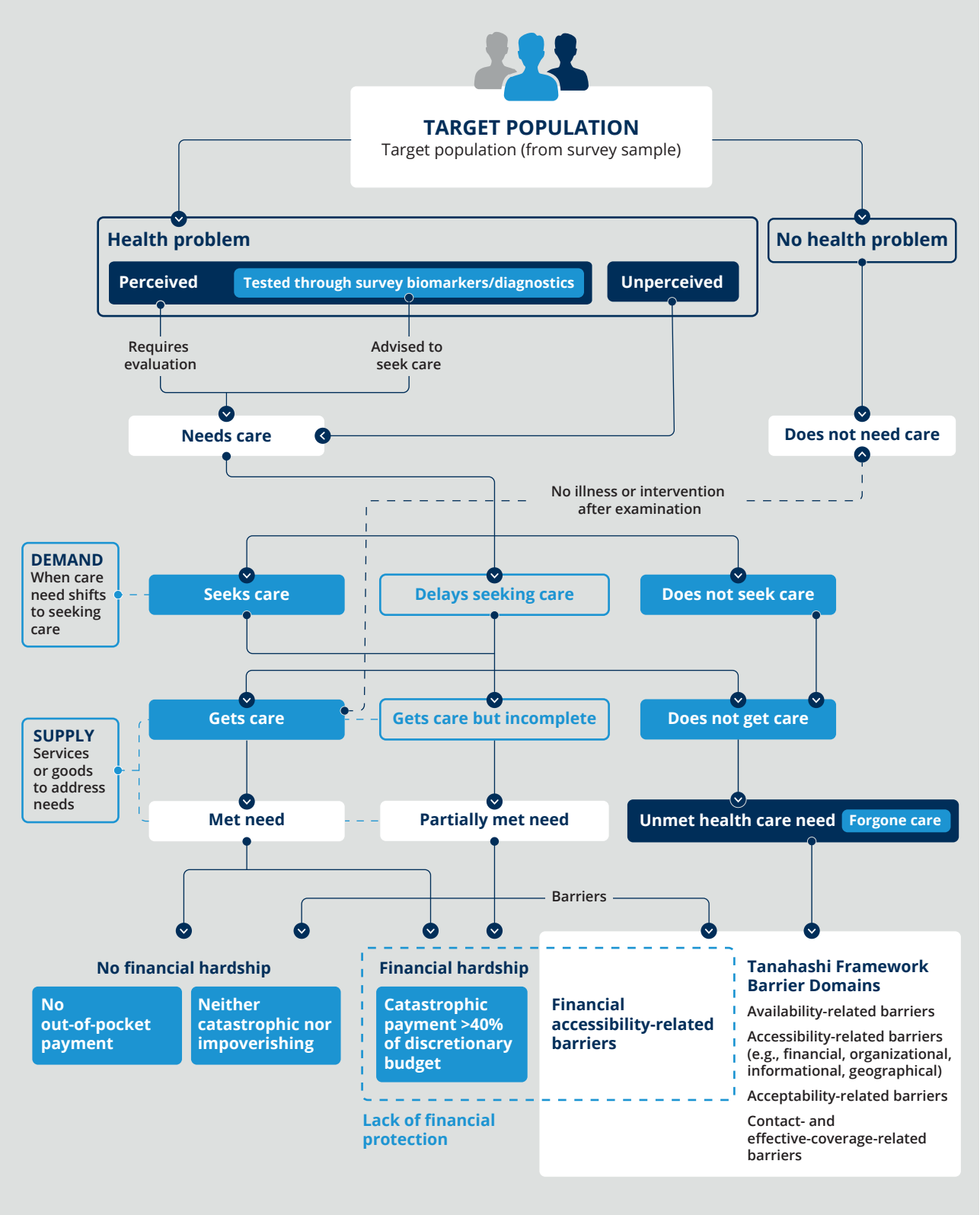
Three conceptual frameworks underpin the analysis and interpretation in this technical report. The first (Fig. 2) illustrates the pathways to determining self-reported forgone health care through household surveys. The second conceptual framework (Fig. 3) situates the measurement of self-reported forgone health care within a potential emerging "unmet need measurement package". The third (Fig. 4) is the Tanahashi framework for effective coverage, the domains of which are used to categorize the barriers to health services (i.e. the reasons for forgone health care).

Fig. 2 depicts the pathways to determining self-reported forgone health care through household surveys, with the black boxes indicating the focus of this technical report:

- household survey questions eliciting information on the receipt (or not) of services for a perceived health care need; and
- indicators enabling categorization of the reasons for not receiving those services.

[3] For the May 2025 official list of outcome indicators for the Fourteenth General Programme of Work, see WHO, 2025 *(13)*.

Fig. 2.
Pathways to determining forgone health care through household surveys



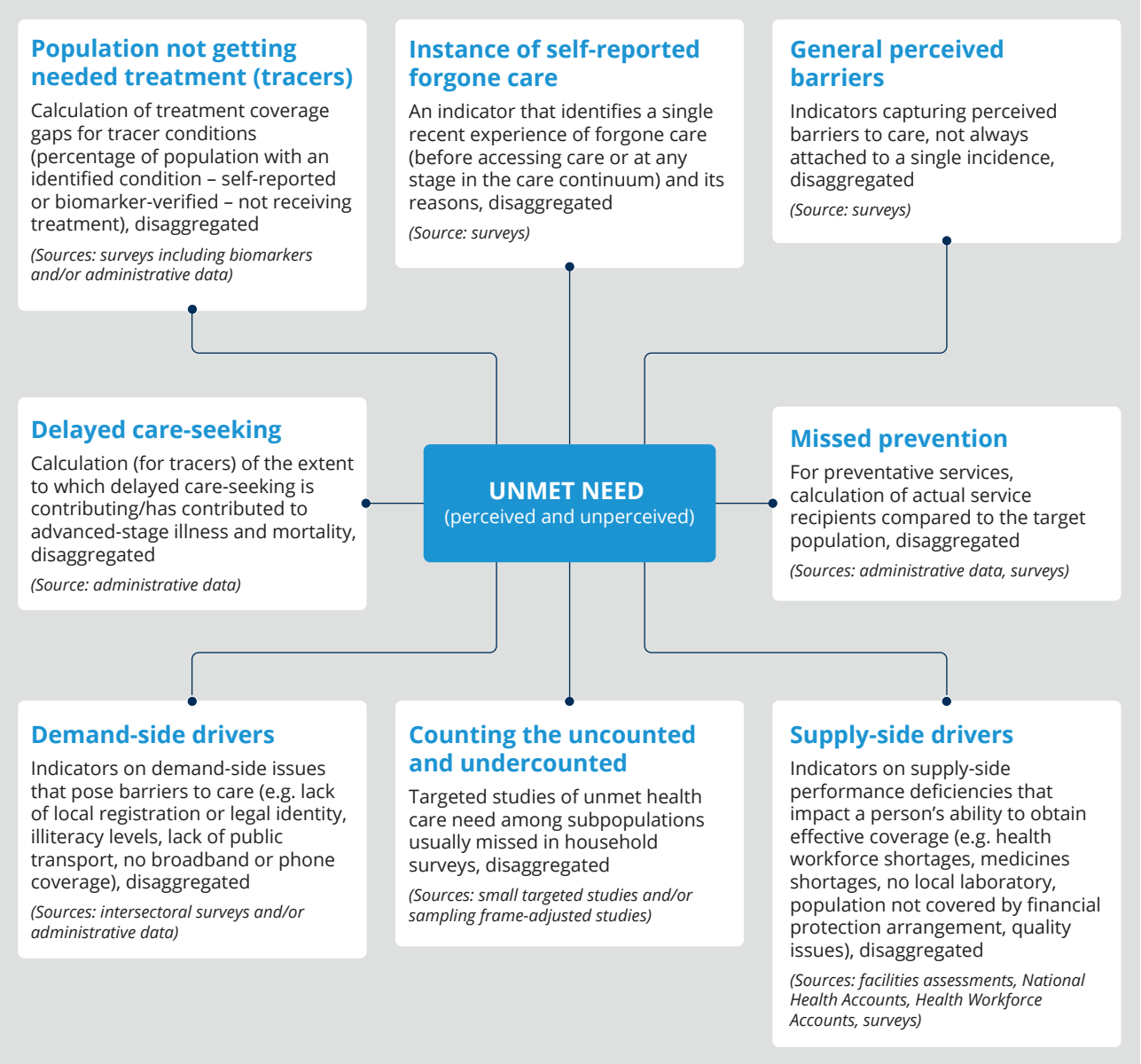
Note: in 2025, the SDG indicator 3.8.2 on financial protection was revised to: "the proportion of the population with positive out-of-pocket household expenditure on health exceeding 40 per cent of household discretionary budget" *(14)*.

Source: Kowal P, Sugiura T, Adhikari A, Bhat M, Ng F (Health Data Analytics Team, Australian National University) building on work by Flores G, Korachais C (Performance, Financing and Delivery team, WHO headquarters), Nawi Ng (University of Gothenburg, Sweden) and Rosenberg M (WHO Kobe Centre, Japan). An early version of this figure was presented at the May 2025 workshop and benefited from the inputs/reflections of participants (see Acknowledgements).

Fig. 3 adds to Fig. 2, providing a wider view of the complexity of measuring unmet health care need and showing the potential for going beyond self-reported forgone health care data gleaned from surveys. Indeed, rather than a single measure, it may be more appropriate to have a "package" of interlinked measurement approaches with the potential to counter the limitations of any one approach and bring enhanced insights from the triangulation of data. While it is beyond the scope of this paper to define such a package, the paper's discussion on the measurement of self-reported forgone care can be considered as an input to its further development. Since a package would include interlinked approaches, readers are encouraged to keep the following questions in mind:

- What can the measurement of self-reported forgone care through surveys realistically capture with regard to unmet health care need?
- Which dimensions are better covered by other data sources and measurement approaches?
- What are the limitations of or biases in measurement of self-reported forgone care that could be countered by other measurement approaches to more fully understand unmet health care need?
- What evidence would be sufficiently "actionable" by decision-makers and policy-makers on health systems strengthening and health equity?

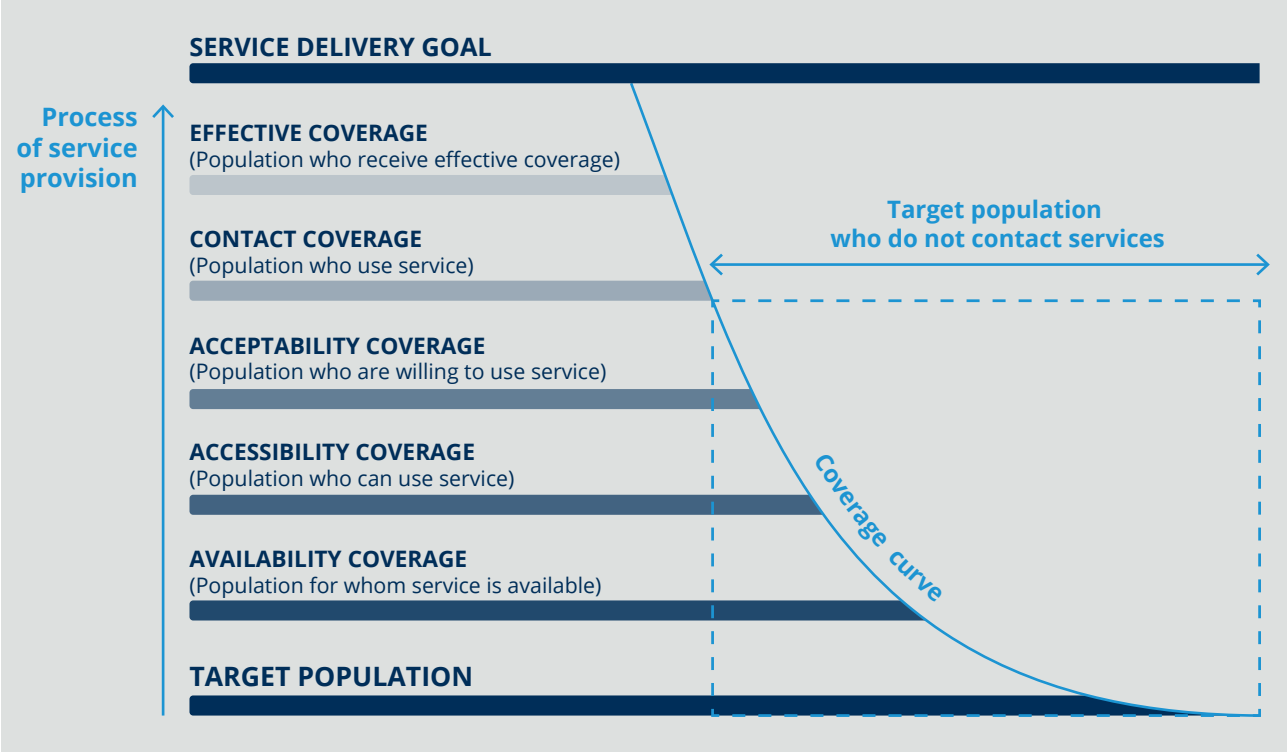
Fig. 3.
Living draft of a measurement package for unmet need



Source: Koller TS (WHO) with inputs from: Rosenberg M and other members of the WHO Working Group on Unmet Health Care Need and Barriers (see Acknowledgements); Kowal P and Sugiura T of the Australian National University; and participants of the May 2025 workshop (in particular, Smith S, Andrade FCD, Ruano AL and Byles J). The conceptualization of unmet need in this figure draws on lessons learned from the application of the WHO approach to conducting assessments of barriers to effective coverage with health services, which was developed through learning from mixed methods assessments conducted in diverse countries between 2011 and 2024. It also draws inspiration from indicator review work for the Tanahashi framework barrier domains commissioned by WHO to John Hopkins University (Principal Investigator: Peters D).

Fig. 4 shows the Tanahashi framework for effective coverage used by WHO's *Handbook for conducting assessments of barriers to effective coverage with health services: in support of equity-oriented reforms towards universal health coverage (12)*, which can be useful for categorizing reasons/barriers into the following domains: effective coverage; contact coverage; acceptability coverage; accessibility coverage (physical accessibility, financial accessibility, organizational and informational accessibility); and availability coverage *(12, 15)*. The Tanahashi framework is adaptable – acknowledging the barriers commonly identified across countries, as well as the location – and context-specific variables that constitute barriers in each domain.

Fig. 4.
Tanahashi framework for effective coverage



Source: WHO, 2024 *(12),* building on Tanahashi, 1978 *(15).*

There is wide variation in survey questions used to collect data on the reasons for not getting needed health care, as well as in how these reasons are then categorized into barrier groups. This variation in categories and wording of reasons is due to the differing purposes of data collection and the health system priorities operating in different countries. Table 4 provides a summary and examples of the various types of coverage barriers.[4] Notwithstanding the importance of meeting specific information needs, a lack of standardized questions on barriers limits the ability to compare across countries and regions in terms of current profiles of barriers and how they evolve over time. (The similarities and differences in questions about barriers will be further explored in Part 4.)

[4] For a more detailed list of barrier types, see Table 1 in Module 1 of WHO's *Handbook for conducting assessments of barriers to effective coverage with health services: in support of equity-oriented reforms towards universal health coverage (12).*

Table 4.
Examples of types of Tanahashi coverage barriers

DIMENSIONS	DESCRIPTION	EXAMPLES OF TYPES OF BARRIERS
Availability	Availability and sufficiency of resources for delivering comprehensive health services	• Insufficient number or density of health facilities • Insufficient number of health workers, staff absenteeism • Stockouts of medicines and equipment
Accessibility	**Geographical** – quality health services within reasonable reach to those who need them **Financial** – ability to pay for services without financial hardship **Organizational and informational** – adequate service organization and information on delivery that allow people to obtain the services when they need them	**Geographical** • Health facilities are too far from user's home • Long travel time to facilities • Lack of transport **Financial** • People cannot afford health care services and products or co-payments or user fees • Opportunity costs and transport costs • Health insurance status and type **Organizational and informational** • People are unable to take time off (from work or caretaking) to attend appointments • Inadequate schedules/opening hours • Complex appointment systems and administrative requirements • Long waiting times • Inadequate information about services in a language and format appropriate for users
Acceptability	Willingness to seek services when they are perceived to be effective, or when social and cultural factors do not discourage people from seeking services	• Lack of trust in health providers or prescribed treatment • Language, culture or religion • Gender norms, roles and relations • Negative perceptions of service quality • Provider's attitudes and practice
Contact	Willingness to contact health services when they are available, accessible and acceptable	• Health literacy • Lack of awareness of available health services • Insufficient understanding of the value of seeing services • Lack of health awareness, apparent unfelt need or lack of opportunity
Effective coverage	Ability to use health services when needed in a timely manner and at a level of quality necessary to obtain the desired effect and potential health gains	• Users seek inappropriate care • Diagnostic inaccuracy and inadequate provider compliance with protocols • Late referral or non-referral when needed • Low treatment adherence • Financial hardship due to health expenditure

Source: adapted from Houghton, Bascolo & Del Riego, 2020 *(16)*.

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Part 3

Analysis of survey questions on forgone health care

3

Part 3. Analysis of survey questions on forgone health care

Overview

There is currently no consensus approach for the measurement of self-reported forgone health care. Part 3 and its accompanying annexes (see Annex 3, Annex 4 and Annex 5) report on the range of existing measurement approaches, bringing the data together to understand the potential scope and key issues when developing a consensus approach.

Part 3 addresses five research questions, each of which is explored in the subsequent sections. A rapid review of a subset of household surveys was conducted to address the first two research questions.

- What questions are included in household surveys on self-reported forgone health care?
- What are the similarities and differences in the wording of these questions?

The other three research questions were explored through a targeted analysis of specific surveys.

- Is there any evidence of significant changes in findings when question formulation changes within a survey between waves?
- In which ways can questions on self-reported forgone care be disaggregated?
- What are the characteristics – by inequality dimensions – of those with higher and lower levels of unmet health care need?

Surveys incorporating questions on self-reported forgone health care

To assess how the collection of data on unmet health care need has been operationalized through survey methods, this paper reviewed surveys implemented by WHO as well as non-WHO surveys identified through a desk review (see Methods and approaches). A total of 94 surveys that included questions about self-reported forgone health care were identified (Table 5). Questions on health care need, unmet need and reasons for forgone care were reviewed from all 94 surveys.

All six WHO regions were covered by the 94 surveys. The majority of the surveys were from the African Region, the Region of the Americas and the Western Pacific Region. (Annex 3 contains a list of 94 surveys and one related publication with findings from a metanalysis and systematic review.) Noting that three of the five main objectives were related to question wording – this research needed to incorporate a range of older and newer data sources, the most recent from 2023, to capture a large number of survey questions. The research benefited from the breadth of different WHO and non-WHO data sources from the past two decades. This long timeframe was used to examine the range and evolution of questions over time. The estimates of forgone care derived from these different surveys were used in the service of examining the question wording and response categories – and therefore necessarily diverged somewhat from the more typical imperative per se placed on date-stamped “most recent” results that are used, for instance, to establish prevalence, examine health outcomes or inform policy.

Table 5.
Number of reviewed surveys with questions on self-reported forgone health care, by WHO region

WHO region(s) represented	Number of surveys	Single country surveys
All WHO regions	4	NA
African, Americas, South-East Asia, European and Western Pacific	2	NA
African, South-East Asia, European and Western Pacific	1	NA
African, South-East Asia and Western Pacific	1	NA
Americas, European and Western Pacific	1	NA
African	17	15
Americas	19	18
South-East Asia	12	12
European	13	9
Eastern Mediterranean	1	1
Western Pacific	23	23
TOTAL	**94**	**78**

NA: not applicable.

Of the 94 surveys, a subset of 10 surveys (see Table 6) had both their questionnaires accessed and publicly available datasets analysed for this paper. Additional attention was given to China and India, particularly for the quantitative analysis because of the availability of surveys with large survey sample sizes and multiple years of data. These surveys provided a large pool of general population data and ageing population data for the quantitative analysis.

Annex 3 includes a broader list of the surveys used in the qualitative analyses to address specific issues raised by the WHO Working Group (see Annex 2). This broader set included non-WHO studies; for example, the Ten to Men survey (the Australian Longitudinal Study on Male Health).

Table 6.
Surveys used for the quantitative analysis of questions on self-reported forgone care

No.	Survey	Countries	Wave (year)	N (age group)
WHO SURVEYS				
1	Multi-Country Survey Study (MCSS)	14 countries[a] (long version) 52 countries[b] (short version)	2000/2001	92 002 (18+ years), long version 100 444 (18+ years), short version
2	World Health Survey (WHS)	69 countries[c]	2002–2004	188 754 (18+ years), pooled
3	Study of global AGEing and adult health (SAGE)	China, Ghana, India, Mexico, Russian Federation, South Africa	Wave 1 (2007/2010)	47 443 (18+ years), pooled
			Wave 2 (2014/2015)	46 484 (18+ years; data not available for Russian Federation), pooled
			Wave 3 (2018/2019)	25 503 (18+ years; no Wave 3 in Russian Federation), pooled
	Mini-SAGE	Mongolia	2018	975 (60+ years)
4	WHS and SAGE	Tunisia	2016	8710 (15+ years)
5	World Health Survey Plus (WHS+)	Bangladesh, Cambodia, Ghana, Nepal	2023	25 343 (18+ years), pooled

[a] China, Colombia, Egypt, Georgia, India, Indonesia, Islamic Republic of Iran, Lebanon, Mexico, Nigeria, Singapore, Slovakia, Syrian Arab Republic and Türkiye.

[b] Argentina, Australia, Austria, Bahrain, Belgium, Bulgaria, Canada, Chile, China, Costa Rica, Croatia, Cyprus, Czechia, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Indonesia, Ireland, Italy, Jordan, Kyrgyzstan, Latvia, Lebanon, Lithuania, Luxembourg, Malta, Morocco, Netherlands, New Zealand, Oman, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Spain, Sweden, Switzerland, Thailand, Trinidad and Tobago, Türkiye, Ukraine, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United States of America and Venezuela.

[c] Australia, Austria, Bangladesh, Belgium, Bosnia, Burkina Faso, Brazil, Chad, Chile, China, Comoros, Congo, Côte d'Ivoire, Croatia, Czechia, Denmark, Dominican Republic, Ecuador, Estonia, Ethiopia, Finland, France, Georgia, Germany, Ghana, Greece, Guatemala, Hungary, India, Ireland, Israel, Italy, Kazakhstan, Kenya, Lao People's Democratic Republic, Latvia, Luxembourg, Malawi, Malaysia, Mali, Mauritania, Mauritius, Mexico, Morocco, Myanmar, Namibia, Nepal, Netherlands (Kingdom of the), Norway, Pakistan, Paraguay, Philippines, Portugal, Russian Federation, Senegal, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Swaziland*, Sweden, Tunisia, Türkiye, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, Ukraine, Uruguay, Viet Nam, Zambia and Zimbabwe.

** Name has since changed to Eswatini.*

No.	Survey	Countries	Wave (year)	N (age group)
NON-WHO SURVEYS				
6	China Family Panel Studies (CFPS)	China	Wave 1 (2010)	33 600 (16+ years)
			Wave 2 (2012)	35 719 (16+ years)
			Wave 3 (2014)	37 147 (16+ years)
			Wave 4 (2016)	36 892 (16+ years)
			Wave 5 (2018)	37 354 (16+ years)
			Wave 6 (2020)	28 530 (16+ years)
7	Chinese Longitudinal Healthy Longevity Study (CLHLS)	China	Wave 1 (1998)	9093 (35+ years)
			Wave 2 (2000)	11 200 (35+ years)
			Wave 3 (2002)	16 064 (35+ years)
			Wave 4 (2005)	15 638 (35+ years)
			Wave 5 (2008/2009)	16 540 (35+ years)
			Wave 6 (2011/2012)	9764 (35+ years)
			Wave 7 (2014)	7192 (35+ years)
			Wave 8 (2017/2018)	15 874 (35+ years)
			Wave 9[d] (2021)	Not available
8	China Health and Retirement Longitudinal Study (CHARLS)	China	Wave 1 (2011)	17 705 (45+ years)
			Wave 2 (2013)	18 605 (45+ years)
			Wave 3 (2015)	21 095 (45+ years)
			Wave 4 (2018)[e]	19 816 (45+ years)
			Wave 5 (2020)[e]	19 395 (45+ years)
9	National Sample Survey (NSS)	India	60th round (2004)	383 338 (0–100 years)
			71st round (2014)	333 104 (0–100 years)
			75th round (2018)	555 352 (0–100 years)
			79th round (2022)	Not available
10	Longitudinal Ageing Study in India (LASI)	India	Wave 1 (2017/2018)	72 262 (45+ years)
			Wave 2 (2024/2025)	Not available

[d] Ninth wave of CLHLS conducted in 2021 and extended as "the Chinese Longitudinal Healthy Longevity and Happy Family Study (CLHLS-HF)". The study was completed in November 2021, but data are not yet available in the public domain.

[e] Questions on forgone care were removed after the first three waves of the CHARLS study. Although outside the scope of this paper, Wave 4 and Wave 5 data could be used to look at health outcomes in those with forgone care in earlier waves (or for those interested in barriers to contact or effective coverage, for example).

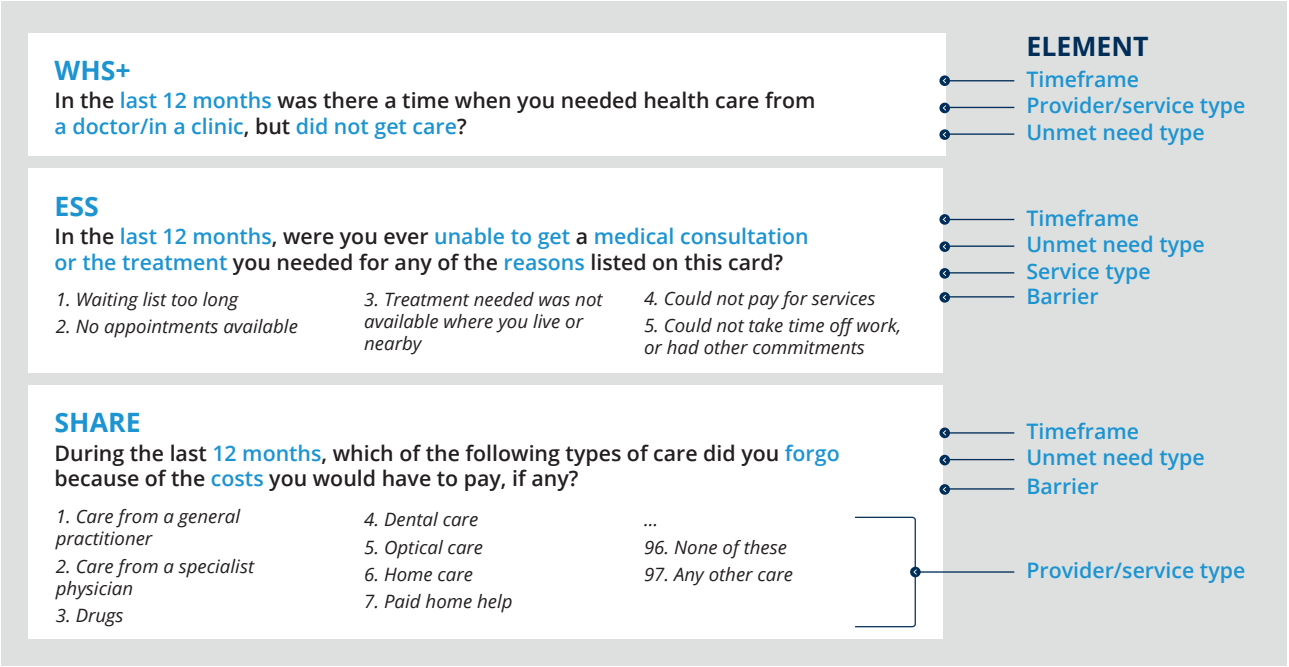
Similarities and differences in wording of the question(s)

Across the 94 surveys, 135 questions related to unmet health care need were identified for inclusion in the qualitative analysis (see Annex 4 and Annex 5 for the list of questions). The qualitative analysis involved a deconstruction of these questions, building on the research areas identified by the WHO Working Group on Unmet Health Care Need and Barriers (see Annex 2). Questions were deconstructed into the following elements:

- single or multiple questions – one question, or two or more questions;
- setting – inpatient (overnight stay) versus outpatient visit, versus "health care" in general;
- provider/service type – doctor, medical care, medical assessment/examination, oral health, specialist care, blood/laboratory test, diagnostic test, mental health care, medications, routine check-up (preventive health);
- timeframe/recall period – present time, 2 weeks, 1 month, 3 months, 6 months, 12 months, 5 years, open-ended (last episode/not defined);
- scope – non-specified (general) or other (guidance by using terms like "illness or accident");
- clinically diagnosed versus self-assessment – clinical assessment versus subjective perception;
- barriers/reasons – accessibility (geographical, informational, financial, organizational), acceptability, availability;
- unmet need type – forgone, refused, delayed, partially met; and
- population/denominator – total sample versus sample of people who reported health care need.

Fig. 5 provides some example questions to illustrate the differences in question wording that emerged from the deconstruction exercise. The deconstruction elements are further explained in the subsections that follow.

Fig. 5.
Examples of questions deconstructed into elements



ESS: European Social Survey; *SHARE:* Survey of Health, Ageing and Retirement in Europe; *WHS+:* World Health Survey Plus.

Single or multiple questions

Some surveys first established the need for health care and then asked a follow-up question on whether health care was accessed. Other surveys rolled the two elements (need and access) together into a single question, then determined need/unmet need/forgone care through the response options, for example, "not needed", "never needed" or "no".

Some surveys used questions that incorporated a barrier into the body of the question, for example, "did not get needed care because of cost", whereas others used two questions – one to establish forgone care and a separate question about the reasons for not getting care/barriers to care.

Setting

In most surveys, the questions were general and did not include details about the setting (such as home, outpatient or inpatient care). Where there was differentiation, a question about outpatient care would not necessarily use the term "outpatient" specifically, whereas a question about inpatient care was typically framed as whether a doctor had referred the individual to a hospital.

Provider/service type

People may avoid seeking health care/medical care for a range of reasons, even when they suspect that care is necessary. Depending on the general level of health literacy and the health system model, symptoms or specific health events might be the main impetus for perceiving a health care need. Asking the general population about what type of services they needed may not yield reliable results, or could result in high "missingness".[5] On the other hand, while questions about the type of service or provider needed (such as the question from SHARE in Fig. 5) may have low response rates, such questions can yield valuable information when answered.

Some of the survey questions capture the type of services needed within the inpatient and outpatient categories. Approximately two thirds of the questions on unmet health care (88 out of 135 questions) asked about outpatient care (Table 7). Typically, outpatient health care needs included a question about medical consultation or treatment need, medication need, specialist consultation, medical attention, accident or illness, surgical need, oral health need, illness or disability, and mental health care needs. Respondents were asked to select all that applied to them, rather than to select one. Broadly, the inpatient health care needs response options referred to an overnight stay, hospitalization, surgical need, medical examination or treatment need.

Timeframe/recall period

Unmet need for health care in the last 12 months was the most commonly used timeframe in survey questions (91 out of 135 questions; Table 7). Only the CLHLS in China included unmet health care need-related questions with "present time" as a timeframe: "Get adequate medical service at present?". For general forgone care questions related to outpatient visits, the 12-month recall period may be a good balance between frequency of events and possible recall biases.

[5] In survey questionnaires, "missingness" refers to data that are unavailable for certain questions or respondents.

Table 7.
Summary of typical timeframes used in survey questions

Care type	Present time	2 weeks	1 month	3 months	12 months	24 months	36 months	60 months	Open-ended	TOTAL
Inpatient					10				2	12
Outpatient		4	10	2	62	1		2	7	88
Overall	1	2	2		19				11	35
TOTAL	**1**	**6**	**12**	**2**	**91**	**1**	**0**	**2**	**20**	**135**

Inpatient care – although likely to be more memorable than an outpatient visit – is generally a less frequent occurrence. This means that a 12-month timeframe may not capture sufficient numbers of people with unmet health care need from a survey. The WHO surveys ask first, "When was the last time you needed health care?" and if within the last three years (12 months for outpatient care and three years for inpatient care), a subsequent question was asked: "The last time you needed health care, did you get health care?". Table 8 gives examples of survey questions using different recall periods.

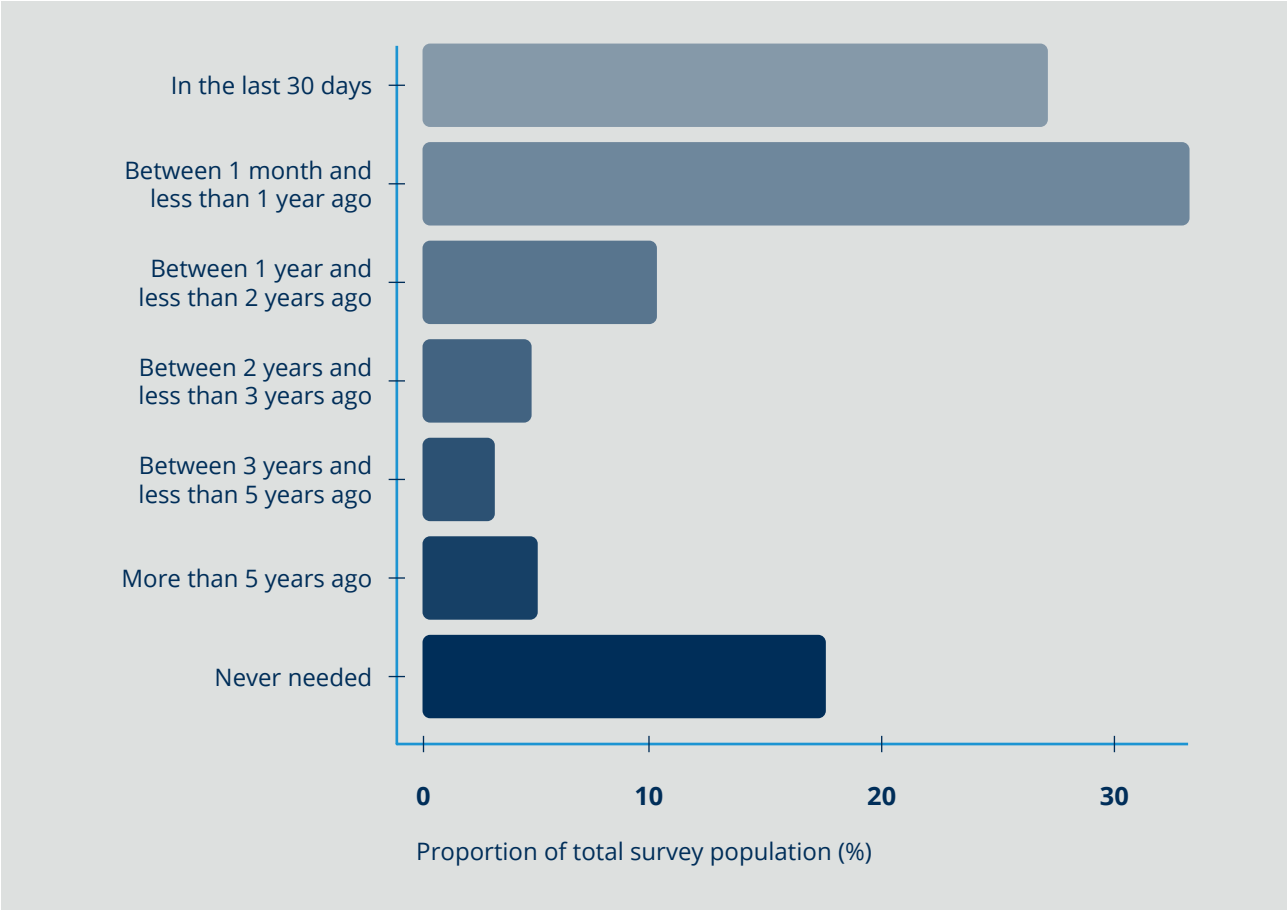
Table 8.
Example questions for different recall periods, by selected surveys

Care type	Survey	Question	Response
Inpatient	EHIS (Europe)	During the past 12 months, was there any time when you really needed to be hospitalized following a recommendation from a doctor, either as an inpatient or a day patient, but did not?	Yes/No
Outpatient	SAGE and WHS+ (multiple countries)	In the last 12 months, was there a time when you needed health care from a doctor/in a clinic, but did not get care?	Yes/No
	National Sample Survey (India)	In the last 15 days, did you demand any treatment or you needed any medical advice and you did not receive it?	Yes/No
Overall[a]	WHS+ (multiple countries)	The last time you needed health care, did you get health care? (Continue if within last 3 years)	Yes/No
	Turkish Health Survey (Türkiye)	Have you experienced a delay in getting health care in the past 12 months due to distance or transport?	Yes/No
	ELSI-Brasil (Brazil)	Have you looked for a health service to get an appointment related to your health, in the past 2 weeks? Were you immediately taken care of on the first time you sought care in this health service in the past 2 weeks?	Yes/No

[a] Refers to health care in general.

Question formulations relating to timeframes were examined using pooled data from all countries that implemented the WHS (2002–2004). Fig. 6 shows the distribution of categorical responses to WHS question Q7000: "When was the last time that you as an adult, or a child of yours aged 12 years or less, needed health care?" (pooled *n* = 188 754). Of the respondents who reported a need for health care, most specified that this need had occurred within the last year.

Fig. 6.
Distribution of categorical responses to question from WHS (2002–2004) on the last time health care was needed



Note: 188 754 - 157 644 (pooled WHS sample with a health care need) = 31 110 reported never needing health care.
This figure draws from data available in the public domain on WHO's data archive. *(1)*

Scope

Surveys differed in the scope of the unmet health care needs assessed and the way in which questions were framed. The questions can be broadly grouped into three categories: overall health care needs, inpatient care needs and outpatient care needs. For example, SAGE Wave 1 included only one question on overall unmet health care needs, while SAGE Wave 2 and Wave 3 supplemented this with questions on both inpatient and outpatient care needs (see Annex 4). The CHARLS in China asked about an illness (need), then a question about whether the individual visited an outpatient health care or home care provider, followed by a question about reasons for not seeking care. The CHARLS also asked a question related to inpatient unmet health care, but without a preceding question: "In the past year, did a doctor suggest that you needed inpatient care, but you were not/did not get hospitalized?' (see Annex 4).

Clinically diagnosed versus self-assessment

Typically, the survey questions on unmet health care need or outpatient need were based on self-assessment. A number of surveys used question wording on inpatient care that was explicit about a clinical assessment, for example: "In the past year, did a doctor suggest that you needed inpatient care, but you were not/did not get hospitalized?". Other surveys were not explicit about how health care need was established (clinical versus self-assessed).

Unmet need type

- Forgone care: is related to demand. It refers to when an individual does not seek health care despite perceiving the need for care. Such a case could be due to personal, social or economic reasons and/or service availability.
- Delayed care: could be related to either demand-side factors (for example, waiting to see if condition/illness improves or inability to get time off work) or supply-side factors (for example, no medical appointments available).
- Refused or partially met care: both are related to supply-side issues. Refused care refers to instances when care was sought but not made available or was not accessed (fully or partially). Partially met care refers to situations where a respondent reported receiving care, but it was not perceived to be the full amount or quality needed. (See also Rodriguez Santana et al., 2023 *(2)*).

Barriers/reasons listed

Of the 94 surveys reviewed, 42 included questions on the reasons for forgone health care. Most of the surveys that asked about the reasons included separate questions to first establish whether care was sought/received and then to ask the reasons for not seeking or receiving care, if applicable. Alternatively, some studies included forgone health care and a reason within a single question. For example, the Commonwealth Fund's International Health Policy Survey asked, "During the past 12 months, was there a time when you had a medical problem but did not consult with/visit a doctor because of the cost?", and the EU-SILC asked about individuals who felt they needed health care in the previous 12 months, but did not receive it for reasons including, "financial barriers, waiting lists, distance/transport" (see Table 9, Annex 4 and Annex 5).

In some surveys, the questions changed over time. For example, two questions were used in Wave 1 and Wave 2 of the Ten to Men survey: "In the past 12 months, was there any time that you needed health care but could not get it?", followed by a question about reasons. The subsequent two waves of the survey used one question: "During the past 12 months, have you been unable to access health care for any of the following reasons ...?".
WHO's WHS, SAGE and WHS+ used similar question formats and lists of reasons for forgone care. In the WHS and SAGE Wave 1, the reason question was asked in relation to overall unmet health care needs. However, SAGE Wave 2 and Wave 3 added questions about forgone inpatient and outpatient care and reasons (see Table 9, Annex 4 and Annex 5).

The response categories for reasons can be mapped to the coverage barriers described by Tanahashi *(3)* (see Table 4) – namely, acceptability, accessibility (financial), accessibility (geographical), accessibility (informational), accessibility (organizational) and availability. Additionally, a few surveys – the Commonwealth Fund's International Health Policy Survey, Ten to Men, AKCOVID (post-COVID-19), COVID-19 National Longitudinal Phone Survey (NLPS) and the World Bank's COVID-19 High Frequency Phone Survey – included reasons related to COVID-19, which have been categorized as: accessibility (COVID-19), availability (COVID-19) and acceptability (COVID-19) barriers (see Table 9, Annex 4 and Annex 5).

Table 9.
Example response options for the question related to reasons for unmet health care need

Survey	Response
SAGE Wave 1 Overall unmet health care need SAGE Wave 2 Inpatient unmet health care need SAGE Wave 2 Outpatient unmet health care need SAGE Wave 3 Inpatient unmet health care need SAGE Wave 3 Outpatient unmet health care need	Could not afford the cost of the visit No transport available Could not afford the cost of transport You were previously badly treated Could not take time off work or had other commitments The health care provider's drugs or equipment were inadequate The health care provider's skills were inadequate You did not know where to go You tried but were denied health care You thought you were not sick enough Other, specify
Commonwealth Fund's International Health Policy Survey, Australia	Not able to leave the house due to coronavirus restrictions Services restricted due to coronavirus Unvaccinated coronavirus status
AKCOVID (post-COVID-19), Austria	Practice/clinic was not open due to the coronavirus crisis Examination/treatment was postponed due to the coronavirus crisis Fear of getting infected with the coronavirus
COVID-19 NLPS, Nigeria	Due to movement restrictions
Ten to Men (Wave 3 and Wave 4), Australia	Not able to leave the house due to coronavirus restrictions Availability of services restricted due to the coronavirus

Population/denominator

Most surveys first established the population with a health care need and then generated estimates that segment the survey population based on need. For example, estimates of unmet health care need from the EHIS excluded respondents without a reported health care need, as the survey has a response option of "No need for health care" for the question on unmet need *(4)*. In contrast, earlier versions of the EU-SILC and the Commonwealth Fund's International Health Policy Survey included all adults when generating estimates of unmet health care need, as their questions did not allow for a distinction between individuals that had or did not have health care needs *(5, 6)*. Therefore, when comparing results across these three surveys, EHIS data would by design result in higher estimates. The 2023 version of the EU-SILC introduced a lead-in question to first establish health care need before asking whether individuals with a need actually received care *(5)*. To ensure the reliability and reproducibility of estimates presented in this paper, regardless of the question wording, numerators and denominators were defined for quantifying forgone health care (see Table 10).

Table 10.
Numerators and denominators of types of health care need and forgone care

Variable	Description	Numerator	Denominator
Did not need health care	Proportion of respondents who reported no health care need	Number of respondents who reported that they did not a have health problem or did not need health care	Number of respondents
Met health care need	Proportion of respondents who reported health care need and reported that their need was met	Number of respondents who reported that their need for health care service(s) was met	Number of respondents with health care needs
Partially met health care need	Proportion of respondents who accessed care but did not get needs fully met (did not complete treatment, poor quality or outcome...)	Number of respondents who reported accessing care, but with residual health care needs	Number of respondents with health care needs
Forgone health care	Proportion of respondents who reported health care need and reported that their need for health care was unmet	Number of respondents who reported that they needed health care service(s) but did not receive it/them*	Number of respondents with health care needs
Delayed	Proportion of respondents who needed health care, but delayed seeking or receiving/getting care	Number of respondents who reported that they delayed seeking or receiving/getting care	Number of respondents with health care needs
Anticipatory[a]	Proportion of respondents who reported possible/perceived barriers to seeking/receiving care – no question about health care need	Number of respondents who reported perceived barriers should health care be needed	Number of respondents

[a] See definition in Part 2, with thanks to Prof Nawi Ng and team at the University of Gothenburg, Sweden.

Exploring the implications of changes in question formulation

Using the results of Wave 2 and Wave 3 of the Ten to Men survey, the research team examined the effect of changes to question formulation on estimates of unmet health care. In Wave 2 of the survey, an initial question to establish need was followed by a question about reasons, whereas Wave 3 used a single question.

- Wave 2:
  - In the past 12 months, was there any time that you needed health care but could not get it?
  - Thinking about the most recent time, what were the reasons you could not get the health care you needed?

  Response categories: Yes/No; List of reasons covered barriers of availability, accessibility (including affordability) and acceptability
- Wave 3:
  - Below is a list of reasons why some people may be unable to access health care when they need it.
  - During the past 12 months, have you been unable to access health care for any of the following reasons?

  Response categories: List of reasons covered barriers of availability, accessibility (including affordability) and acceptability, plus COVID-related.

Table 11 shows that the question wording had a considerable impact on the estimates of forgone care: Wave 3 estimates were significantly higher than Wave 2 estimates across men of all age groups. Reviewing a list of possible reasons for forgone care before answering the question about forgone care may have primed the respondents to recall a relevant experience and made them more likely to give a positive response.

Table 11.
Effect of changes in question formulation between Wave 2 and Wave 3 of the Ten to Men survey

Survey wave	Proportion (%) of total survey sample with a response indicating forgone care			
	Age < 30	Age 30–49	Age 50–59	Age 60–69
Wave 2	6.0	7.0	5.8	–
Wave 3	27.5	28.5	23.3	20.5

Due to resource constraints, it was not feasible to explore the implications of changes to questions for more than one survey. That said, this example serves to flag the relevance of question formulation as a future area of research.

Exploring disaggregation approaches for self-reported forgone health care questions

To respond to the research question on disaggregation (i.e. In which ways can questions on self-reported forgone care be disaggregated?), the research team used the subset of 10 WHO and non-WHO surveys (listed in Table 6) as a basis for analysis. Surveys were assessed for the potential to disaggregate by the following inequality dimensions:

- age
- sex
- residence/setting (rural versus urban)
- income
- education.

Where possible, unmet health care need in individuals reporting one or more diagnosed chronic condition was examined. In addition, capacity for intersectionality analysis was also assessed. Intersectionality takes into consideration a range of intersections of social characteristics simultaneously to better understand health and social experiences or outcomes *(8)*. Table 12 highlights the inequality dimensions available for disaggregation, with subsequent analyses conditioned by survey sample size and the percentage reporting forgone care.

Table 12.
Inequality dimensions addressed in WHO and non-WHO surveys with data on self-reported forgone health care

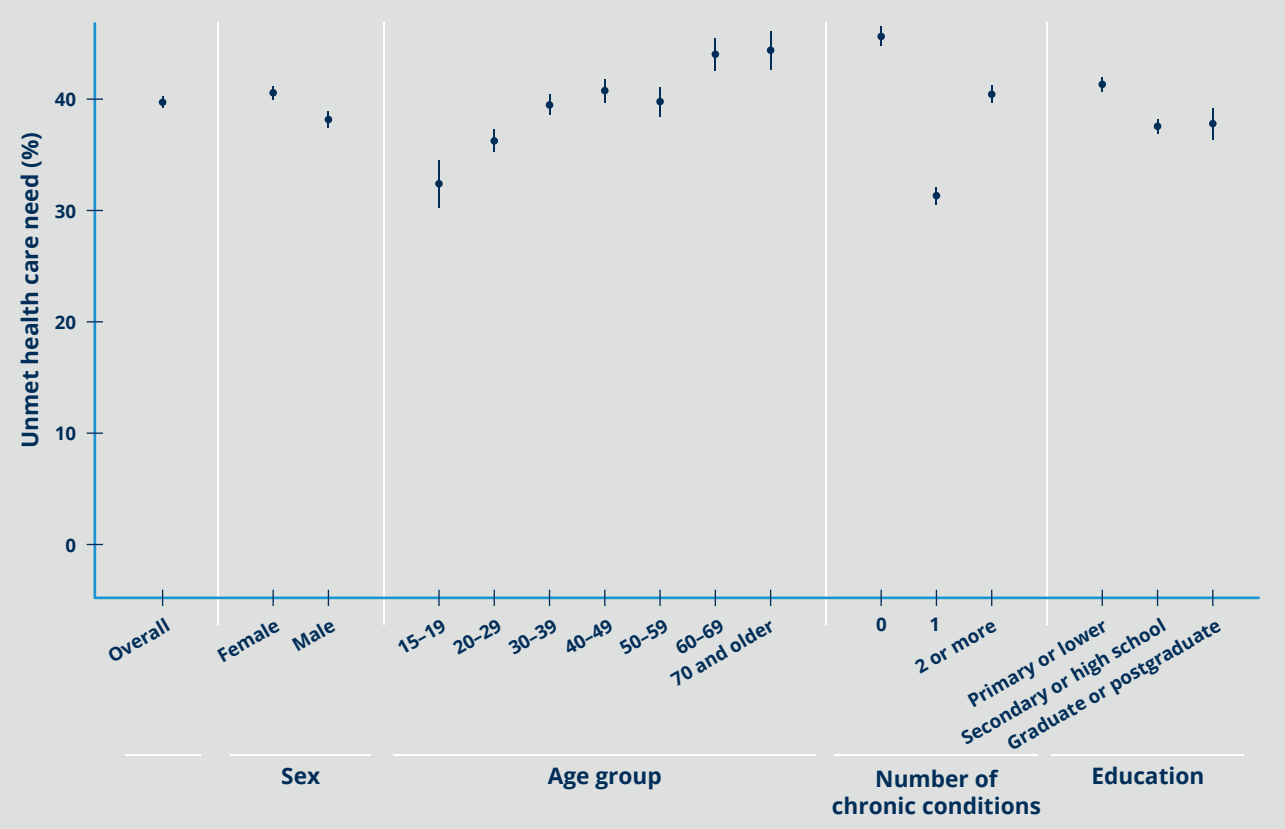
Survey	Wave (year)	Single/ multiple country	Sampling weights	Inequality dimension						Permits intersectionality analysis
				Age	Sex	Setting	Income	Education	Presence of chronic condition(s)	
MCSS (long version)	2000–2001	Multiple countries		X	X	X		X	X	
MCSS (short version)	2000–2001	Multiple countries		X	X	X				
WHS	2002–2004	Multiple countries		X	X	X	X	X	X	X
SAGE	Wave 1 (2007–2010)	Multiple countries		X	X	X		X		
SAGE	Wave 2 (2014–2015)	Multiple countries		X	X	X		X		
SAGE	Wave 3 (2018–2019)	Multiple countries		X	X	X		X		
WHS+	2023	Multiple countries		X	X	X		X		
CHARLS	Wave 1 (2011)	China		X	X	X			X	X
CHARLS	Wave 2 (2013)	China		X	X	X			X	X
CHARLS	Wave 3 (2015)	China		X	X	X			X	X
CLHLS	Wave 1 (1998)	China		X	X	X			X	X
CLHLS	Wave 2 (2000)	China		X	X	X			X	X
CLHLS	Wave 3 (2002)	China		X	X	X			X	X
CLHLS	Wave 4 (2005)	China		X	X	X			X	X
CLHLS	Wave 5 (2008–2009)	China		X	X	X			X	X
CLHLS	Wave 6 (2011–2012)	China		X	X	X			X	X
CLHLS	Wave 7 (2014)	China		X	X	X			X	X
CLHLS	Wave 8 (2017–2018)	China		X	X	X			X	X
CLHLS	Wave 9 (2021)	China		X	X	X	X	X	X	X
CFPS	Wave 1 (2012)	China		X	X	X				
CFPS	Wave 2 (2014)	China		X	X	X				
CFPS	Wave 3 (2016)	China		X	X	X				
CFPS	Wave 4 (2018)	China	X	X	X	X				X
CFPS	Wave 5 (2020)	China	X	X	X	X				X
NSS	Wave 1 (2004)	India	X	X	X	X				
NSS	Wave 2 (2014)	India	X	X	X	X				
NSS	Wave 3 (2018)	India	X	X		X				
LASI	Wave 1 (2017–2018)	India		X	X	X				
LASI	Wave 2 (2024–2025)	India		X	X	X				

Exploring characteristics of respondents with higher or lower levels of unmet health care need

To address the research question on characteristics of respondents (i.e. What are the characteristics – by inequality dimensions – of those with higher and lower levels of unmet health care need?), the research team analysed the levels of self-reported forgone health care in subpopulations with different sociodemographic and residential characteristics. The data used for this analysis are the pooled data from MCSS 2000-2001 and WHS 2002-2004. As stated at the outset of this section, the purpose of this analysis is not to describe or infer current status or trends, but to explore the ability to disaggregate the unmet health care indicator and examine inequalities by different dimensions. This also allows us to identify ways in which surveys could be better designed to enhance the capacity for health inequality assessments using this indicator. Although it is beyond the scope of this paper to report on this in detail for all of the studies, three example outputs (using WHO surveys) are provided in Fig. 7, Fig. 8 and Fig. 9. While not extensive, this analysis builds on existing work (for example, Mahapatro, James & Mishra, 2021 *(9)* and Anticona et al., 2024 *(10)*) and contributes to advancing the understanding of inequalities in unmet health care need.

As shown in Fig. 7, results from a pooled dataset analysis of WHO's MCSS suggest that levels of self-reported forgone care were higher in progressively older age groups and in persons with lower levels of education. Among individuals that reported living with no, one or more than one chronic condition, the pattern was not linear: individuals reporting no chronic conditions showed the highest levels of self-reported forgone care and those reporting only one chronic condition had the lowest levels.

Fig. 7.
Self-reported forgone care by selected sociodemographic characteristics (percentage; 95% CI) (MCSS pooled data, 2000–2001) (long version, *n* = 14 countries)

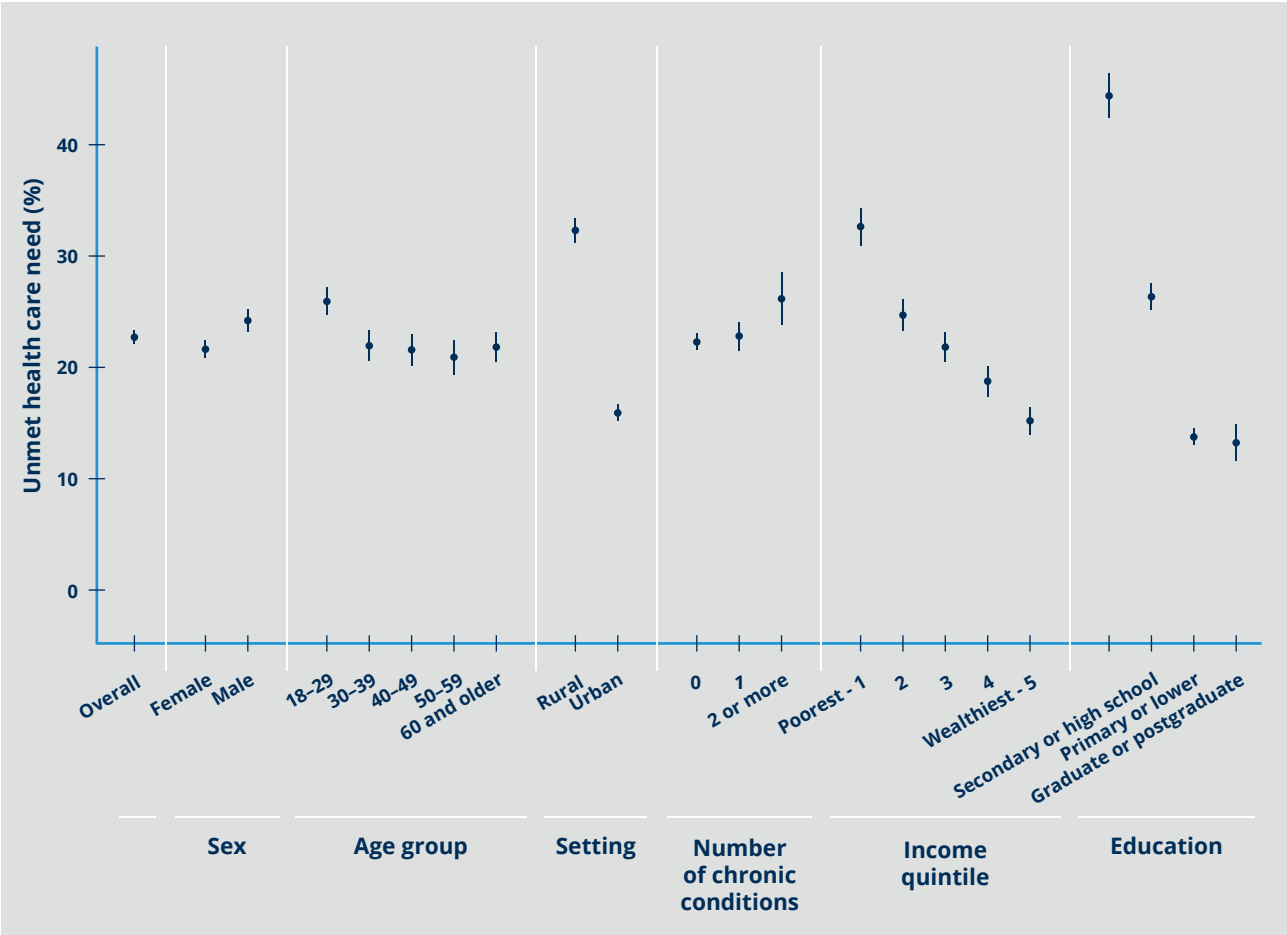


Note: pooled data; survey weights were not available.

Fig. 7 uses results from the long version of the MCSS (*n* = 14 countries). The MCSS short version (not shown here) (*n* = 52 countries) also included a question on unmet health care need, however, it did not include a question about reasons or questions on education and the presence of chronic conditions. The pooled short version of the MCSS showed lower levels of unmet health care need (23%) than the pooled long version (39%), with similar results observed by sex. The pooled short version showed incrementally lower levels of unmet health care need from age 40 years onwards, whereas the pooled long version showed somewhat higher levels in the two oldest age groups.

Fig. 8 depicts WHS pooled data on self-reported forgone health care disaggregated by different inequality dimensions, highlighting important differences by location of residence and wealth proxies. It can be noted that the sex and age patterns differ from that seen in the MCSS (see Fig. 7).

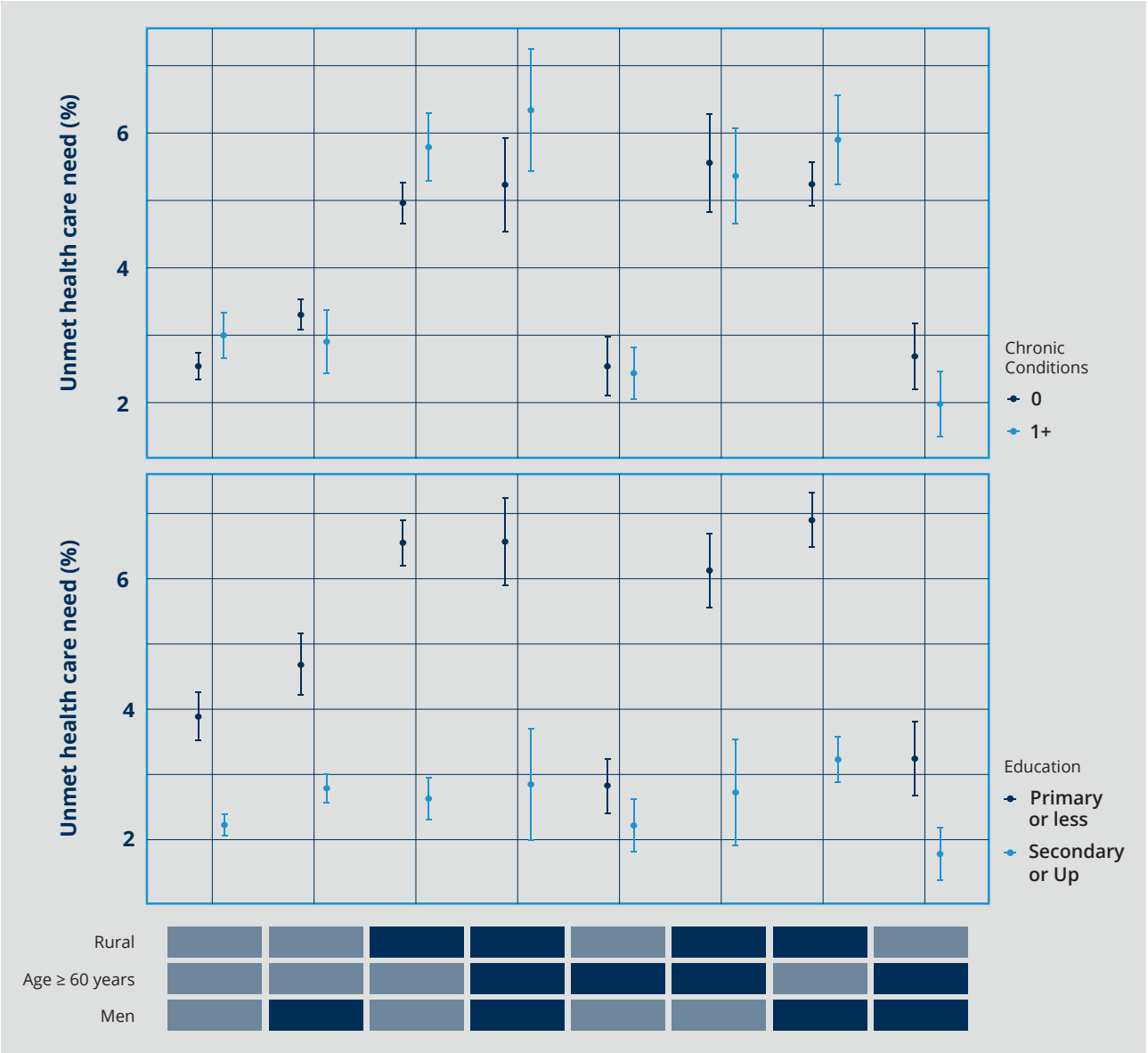
Fig. 8.
Self-reported forgone care by selected sociodemographic characteristics (percentage; 95% CI) (WHS pooled data, 2002–2004)



Note: Pooled data, survey weights were not used.

The WHS pooled data allows for a robust enough sample size to move beyond looking at breakdowns by single inequality characteristics. People's lives are shaped by combinations of factors – rather than a single characteristic – so intersectional analysis helps to examine how multiple characteristics intersect to affect health risks and outcomes. Fig. 9 depicts this intersectionality. The upper graph shows that living with or without a chronic condition had no significance in any of the intersectional groups. The lower graph shows that individuals with lower levels of education had higher levels of forgone health care, with even greater significance among those residing in rural settings.

Figure 9.
Self-reported forgone care in individuals with different education levels or chronic condition(s) status by age group, place of residence and sex (percentage; 95% CI) (WHS pooled data, 2002–2004)



Note: Dark box indicates the presence of the label – so, for example, the first column with three clear boxes indicates urban dwelling, younger women.

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Part 4

Measuring the reasons for self-reported forgone health care

4

Part 4. Measuring the reasons for self-reported forgone health care

Overview

Part 4 explores the quantitative measurement of the reasons driving unmet health care need, also often referred to as the "barriers" to effective coverage with health services. Specifically, the section explores:

- the range of response options on reasons for self-reported forgone health care/ barriers;
- findings from selected surveys on the reported prevalence of different barriers; and
- the potential to further refine data collection for selected Tanahashi coverage domains.

Range of response options on reasons driving self-reported forgone health care

The research team reviewed the formulation of response options on reasons for self-reported forgone care (i.e. barriers to effective coverage with health services) across 94 surveys. The aim was to understand the range of variation in the formulations and to identify which dimensions of the Tanahashi framework for effective coverage were present and which were absent in these formulations. Table 13 shows response option formulations from a selection of surveys, demonstrating the breadth of ways in which reasons for self-reported forgone health care can be phrased. This underlines the need for further global work to refine and standardize a list of barrier types across the full range of Tanahashi domains.

Table 13.
Examples of response options on reasons for self-reported forgone health care

Survey	Formulation of response options on reasons for self-reported forgone health care
MCSS (long version)	Refused health care because you could not afford it
WHS/SAGE/WHS+ [same dimensions of formulation with slight variations in order]	Could not afford the cost of the visit
	No transport
	Could not afford the cost of transport
	The health care provider's drugs or equipment are inadequate
	The health care provider's skills are inadequate
	You were previously treated badly
	Could not take time off of work or had other commitments
	You did not know where to go
	You thought that you were not sick enough
	You tried but were denied health care
	Other/other, specify

Survey	Formulation of response options on reasons for self-reported forgone health care
China Health and Retirement Longitudinal Study (CHARLS)	Already under treatment Illness is not serious / Don't need treatment Poor No time Inconvenient traffic Poor service No availability Not enough money Not willing to go to hospital Felt that hospital was unlikely to cure the problem No ward available Other
Chinese Longitudinal Healthy Longevity Study (CLHLS)	No money to pay for expenses Far away Inconvenient in movement Nobody with whom to go Didn't want to go Other
China National Health Service Survey	Illness is not serious Financial difficulties The procedure of seeing a doctor is too complex Having no time Transportation problems No effective treatment Financial difficulties Poor service of hospital There is no bed available Other
Longitudinal Ageing Study in India (LASI)	Did not get sick Needed to work Didn't want to give up a day's work Not enough money or cost was too high Treatment was unlikely to be effective Illness was not serious Nobody to accompany No quality facilities available nearby Had medicine at home Family member(s) decided it wasn't required No health care facility nearby Difficult to get to the health care provider Other

Survey	Formulation of response options on reasons for self-reported forgone health care
National Sample Survey [India]	No medical facility available in the neighbourhood Facilities available but no treatment sought owing to lack of faith Facility of satisfactory quality not available Ailment not considered serious Financial reasons Facility too expensive Long waiting Facility of satisfactory quality involves long waiting Cannot afford to wait due to domestic/economic engagement Familial/religious belief Others

Based on mapping of all the reasons to the Tanahashi domains, "accessibility" was identified as the most frequently represented domain – particularly organizational accessibility, followed by financial, geographical and informational accessibility. "Availability" was the second most commonly represented domain, while "acceptability" and "effective coverage" appeared least frequently in the formulation of response options.

Reported prevalence of barriers

The research team analysed the barriers that featured in WHO's WHS (2002–2004) and WHS+ (2023) to explore which barriers to care were most frequently reported, noting that (as described above) surveys most often asked about accessibility barriers and much less frequently about other types of barrier.

In the WHS pooled sample of respondents with a health care need (*n* = 157 644), 3.9% (*n* = 6128) reported forgone health care. Accessibility barriers were found to be the main types of barriers to care reported – with informational accessibility the most frequently reported, closely followed by financial accessibility barriers (cost of visit and cost of transportation) (Table 14).

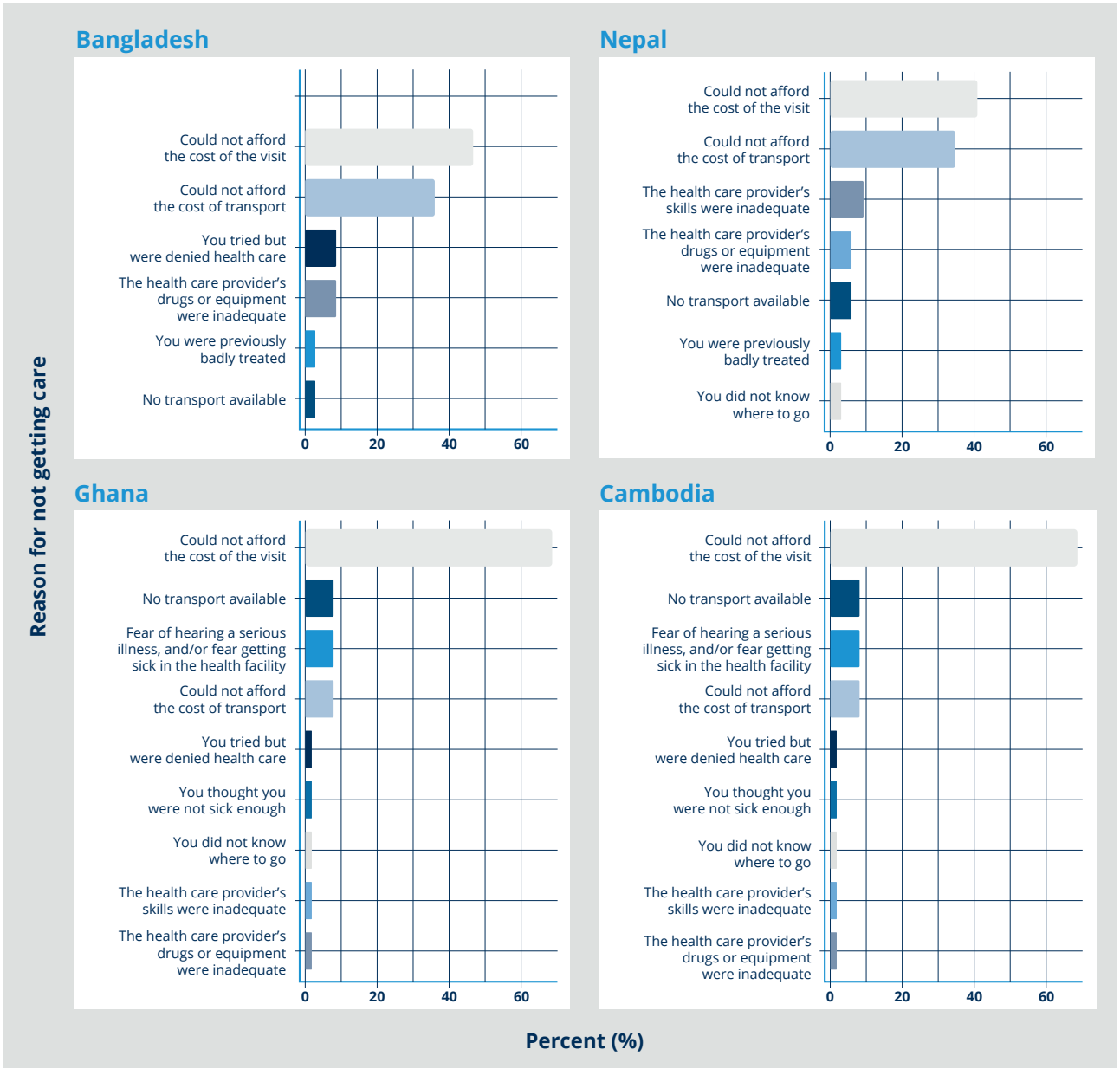
Table 14.
Reported barriers to receiving needed health care (%), all ages, WHS pooled data (2002–2004)

Barrier category	Percentage (%)*
Accessibility (informational)	36.5
Accessibility (financial)	29.7
Accessibility (geographical)	14.9
Accessibility (organizational)	8.6
Availability	8.7
Acceptability	7.9
Other	18.0

** Respondents could select more than one reason/barrier – therefore, sum total will exceed 100% (n = 6128).*

In WHO's WHS+, financial accessibility barriers were found to be the main type of barrier to care in all four countries surveyed (Fig. 10) – especially when combining the cost of visit and cost of transportation.

Fig. 10.
Reasons[a] (as a percentage) for not getting needed care in Bangladesh, Cambodia, Ghana and Nepal, WHS+ (2023)



[a] *Respondents could select more than one reason. Reasons can be mapped onto the Tanahashi barrier categories.*

Potential to further refine data collection for selected Tanahashi domains

As part of the main objectives, three barrier domains were examined in greater depth: acceptability; effective coverage; and financial accessibility. Acceptability and effective coverage have been less covered in surveys to date, while financial accessibility (cost) is particularly relevant to assessing the dimension of financial protection in UHC. The purpose of this exploration was to identify which barrier-related issues could be addressed by a set of self-reported forgone care questions in omnibus household surveys (see Part 5). While other types of barriers are important (i.e. across the Tanahashi domains), these three barrier domains have been prioritized for future data collection due to survey-related resource constraints in many contexts and in an effort to keep the proposed module/question set short.

Acceptability

This barrier domain encompasses personal preferences, cultural factors (including gender norms, roles and relations), trust in the health care system and/or providers, and stigma (Box 2). As described by Levesque, Harris & Russell (2013), acceptability relates to cultural and social factors that shape whether individuals accept aspects of the health care service (for example, the sex or social background of providers, or the beliefs associated with systems of medicine) and the judged appropriateness for individuals to seek care *(2)*.

Box 2. Types of acceptability-related barriers

- Cultural beliefs about health and illness, as well as perception of health needs
- Extent of connectivity/integration of health services with Indigenous/traditional health systems
- Gender norms, roles and relations that inhibit access (e.g. limited autonomy of some women in making decisions about their health, or gender norms on masculinity that delay treatment-seeking)
- Age-appropriateness of services (e.g. adolescent-friendly services may not be provided)
- Perceptions of service quality, as well as perceived and actual corruption among health providers
- Discriminatory attitudes by providers (e.g. based on sex, ethnicity, marital status, religion, caste, disability, health status, or sexual orientation of the person seeking care)
- Extent to which confidentiality is protected

***Source**: Koller, 2021 (3)*

While financial and availability barriers are often recognized as leading reasons for forgone health care, acceptability factors nevertheless represent a significant and complex dimension of unmet need. One of the central findings from the 21-country Pandemic Recovery Survey, implemented in 2023, was the role of trust in health care professionals as a key mediator of care-seeking behaviour during the COVID-19 pandemic *(4)*. Reasons such as "too busy," "didn't get around to it," "fear," "mistrust" or "didn't know where to go" point to barriers that are not purely structural but rooted in individual behaviour, knowledge and social context.

Addressing acceptability-related barriers requires strategies that enhance health literacy, promote culturally competent care, and build trust between communities and health providers, and which offer flexible service delivery models (for example, extended hours, telemedicine) that accommodate individuals' life circumstances. Ignoring these behavioural and cultural dimensions will lead to persistent unmet health care needs, even in well-funded systems.

Effective coverage

Effective coverage is defined as the proportion of individuals in need of a health service who receive care of sufficient quality to achieve the desired health outcome *(5)*. Tanahashi's "contact coverage" and other intervention coverage indicators related to cascades of care do not fully capture care quality and the process of care (i.e. what is actually done during the provision of health services or interventions to help to ensure the effectiveness, safety, people-centredness, efficiency, timeliness and equity of such processes) *(6, 7)*. Effective coverage incorporates three fundamental components – need and use (contact coverage), plus quality.

Health care use, health outcomes and health care quality measures are beyond the scope of this paper but are essential components of the effective coverage-related barrier domain. As such, questions including elements of health care use and quality were reviewed from three of the targeted WHO studies (WHS, SAGE and WHS+, covering the period 2002–2023). While no direct questions about perceived quality of care were included in the reviewed studies, sets of questions were asked about experiences with the care received that, when combined, could be used as a quality metric. Survey review findings for WHS are featured in Table 15, followed by findings from SAGE and WHS+ in Table 16. As can be seen when comparing the two tables, some small changes in question formulation were made between Q7317/Q5019, Q7322/Q5021 and Q7323/Q5022, and some questions in WHS were not included in SAGE or WHS+. A worked example using WHO survey data from these questions could be used to investigate ways that this could approximate effective coverage. The results could be used to examine the feasibility and value of this approach.

Table 15.
Questions used to quantify respondent-perceived care quality, WHS (2002–2004)

Questions	Response categories
In your opinion ...	
... was the [health care provider's] skill adequate for your treatment? Q7304	• Yes • No
... was [the health care provider's] equipment adequate for your treatment? Q7305	
... were [the health care provider's] drug supplies adequate for your treatment? Q7306	
From your last visit, how would you rate ...	
... the amount of time you waited before being attended to? Q7316	• Very good • Good • Moderate • Bad • Very bad
... the experience of how clearly health care providers explained things to you? Q7319	
... your experience of being involved in making decisions about your health care or treatment? Q7322	
... your experience of being greeted and talked to respectfully? Q7317	
... your experience of getting enough time to ask questions about your health problem or treatment? Q7320	
... the way the health services ensured you could talk privately to health care providers? Q7323	
... the way your privacy was respected during physical examinations and treatments? Q7318	
... your experience of getting information about other types of treatments or tests? Q7321	

Table 16.
Questions used to define perceived care quality, SAGE (Wave 1, 2007–2010; Wave 2, 2014–2015; Wave 3, 2018–2019) and WHS+ (2023)

Questions	Response categories
Overall, how satisfied were you with the care you received during your last visit? Q5013 Inpatient & Q5034 Outpatient	• Very satisfied • Satisfied • Neither satisfied nor dissatisfied • Dissatisfied • Very dissatisfied
What was the outcome of your visit to the health care provider? Did your condition ...? Q5014 Inpatient & Q5035 Outpatient	• Get much better • Get better • No change • Get worse • Get much worse
Was this the outcome/result you had expected? Q5015 Inpatient & Q5036 Outpatient	• Yes • No
For your last visit to a doctor or clinic (not an overnight stay), how would you rate ... ... the amount of time you waited before being attended to? Q5018 ... your experience of being treated respectfully? Q5019 ... how clearly health care providers explained things to you? Q5020 ... your experience of being involved in making decisions for your treatment? Q5021 ... the way the health services ensured that you could talk privately to providers? Q5022	• Very good • Good • Moderate • Bad • Very bad

Based on these questions, estimates of overall (i.e. not quality-adjusted) met need and quality-adjusted met need were generated from WHO's WHS, SAGE and WHS+ (covering the period 2002–2023). These preliminary analyses suggest that further exploration is warranted on whether respondent-reported perceptions of care quality could serve as a useful tool for framing how to measure elements of Tanahashi's effective coverage barrier domain.

Financial accessibility

As described by Penchansky & Thomas (1981), the financial accessibility barrier domain is a combination of the cost of service, the user's ability to pay and the availability of health insurance (if appropriate in the country context) *(8)*. WHO's handbook on the assessment of barriers provides additional orientation on the types of financial accessibility-related barriers *(9)*:

- official out-of-pocket expenditures for services (e.g. co-payment for services, laboratory tests, exams);
- official out-of-pocket expenditures for medicines and health products (e.g. assistive devices);
- transport and accommodation costs linked to using services;
- opportunity costs (e.g. lost work, cost of child/older person care during absence, paying someone to do one's job during absence, such as managing livestock/farm);
- informal payments (cash or in-kind); and
- public health service capacity and provider incentive structure influencing patients' use of private services.

A range of financial barriers contribute to delayed, forgone or poor quality care, as well as driving catastrophic or impoverishing health expenditures. Financial hardship is experienced as catastrophic or impoverishing health expenditure by those who manage to pay out-of-pocket for the service, treatment or medicine they need *(10)*.

Financial barriers can be direct or indirect, and many people experience both. Examples of direct financial barriers include out-of-pocket expenditures for services, devices and medications, and diagnostic, medical or imaging tests. Indirect costs include transport and accommodation costs linked to accessing and using services, costs incurred from having to pay for childcare and income lost from missed work. This may include informal payments that are necessary to access care *(11)*. Indirect financial barriers may be of particular significance in humanitarian contexts as there could be travel restrictions, an elevated risk of exploitation of vulnerability by people offering transport and accommodation, lower capacity for out-of-pocket expenses, weakened livelihood generation opportunities, fewer services being offered, ineligibility for accessing safety-net provisions, and differential treatment of nationals and non-nationals *(12)*.

Persons with lower household income may experience a broader array of health risks in general *(13)* but also face increased difficulties in accessing medical services *(14)*. Results from a study covering 28 countries showed a strong social gradient between income and self-reported forgone care, while country-specific analyses detected a statistically significant linkage between these two variables in 21 of 28 countries, a finding consistent with other studies *(14)*. This underlines the need for further research, systematization in UHC measurement frameworks and scaled-up action on this linkage. Current global monitoring indicators for SDG 3.8.2 on UHC/financial protection only capture the extent of financial hardship due to out-of-pocket spending on health care. Complementary information on unmet need/forgone care due to financial barriers is essential to obtain the full picture of financial protection *(15)*.

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Part 5

Survey module/question set for testing and refinement

5

Part 5. Survey module/question set for testing and refinement

A "living" version of a survey module/question set was developed drawing on the research undertaken for this technical report, particularly the information and insights gleaned from the survey reviews and targeted analyses presented in Part 3 and Part 4. Its core function is to support further testing and refinement of the measurement of unmet health care need. Inputs from the WHO Working Group and a wider group of experts informed the scope, framing and content of the module/question set, which focuses on:

- capturing individuals with a perceived/recognized health need or problem;
- capturing self-reported delayed or forgone health care;
- capturing self-reported forgone health care in a variety of settings;
- capturing reasons for self-reported forgone care due to financial accessibility-, acceptability- and effective coverage-related barriers[6]; and
- ensuring parsimony for integration into WHO's WHS+ and a range of other surveys.

The module/question set feeds into the next stages of WHO's strategy for refining the measurement of unmet health care need. The quantitative results and qualitative analyses of existing questions were used to generate a core question set and an expanded set of supplementary questions, which can be further developed through piloting, focus and expert group discussions, and potential linkages to administrative data. By combining survey data on self-reported forgone health care with these further steps, an empirically grounded working definition of forgone care and question set can be generated. An iterative process is required, including continuous refinement as more data become available and contextual understanding deepens.

The module/question set is divided into three parts:

- **core set** – focused on self-reported forgone care;
- **supplementary set 1** – focused on three barrier domains: financial accessibility; acceptability; and effective coverage focused on quality; and
- **supplementary set 2** – focused on self-reported forgone care for two tracer conditions: oral health care; and mental health support, care or treatment.

The question set was developed as a module that can be embedded in existing national household survey platforms, including country-specific surveys as well as multi-country surveys, such as WHO's WHS+ or the International Labour Organization's Household Income and Expenditure Survey. For policy purposes, the question(s) on unmet need/forgone care should be accompanied by at least one question on reasons for not getting needed care. As part of a broader survey, it is assumed that the survey instrument would include a household roster and questions that cover a range of contextual variables for understanding forgone health care, including questions on sociodemographic and socioeconomic characteristics. These are essential for assessing the determinants of forgone health care, reasons for not getting health care, and both demand- and supply-side drivers.

[6] As discussed in Part 4, the prioritization of these three barrier domains does not diminish the importance of the other domains of the Tanahashi framework.

Regardless of the survey platform, a concise set of questions is more likely to be adopted and implemented in a survey platform than a complex and lengthy set. While this presents a challenge for a multifaceted issue such as unmet health care need, it is still feasible. Box 2 below outlines the key issues to consider for the further testing of this living module/question set.

Box 2. Key considerations in further testing of "living" version of module/question set

Further pilot-testing in diverse contexts is needed, as reflected in the WHO Working Group's strategic vision (see Fig. 1). This will require developing adapted versions of the example questions and a pilot-testing manual. In addition to common issues when testing survey questionnaires – such as question clarity, survey length and respondent experience – a few key areas for pilot-testing were identified during the course of the research.

- **Anchoring of timeframe:** Compare the effects of anchoring questions on health-seeking, need and receipt of services to "the last time you needed health care (in the last 12 months)" (as is presented in the sample questionnaire, below) versus not anchoring them to the most recent instance. The former approach is expected to increase the specificity of the information gained and reduce recall bias. The latter is expected to capture a broader range of services needed but not sought/received, and the barriers causing this. To complement either approach, a further question on the number of instances of forgone care in the last 12 months may also be required to understand the magnitude and pattern of the issue.
- **Open-ended questions versus closed response options:** Compare the effects of using an open-ended question (Q04 and Q05 in the sample questionnaire) versus reading out the predefined response options and allowing multiple responses. The former approach would shorten the amount of time needed to administer the question, but the responses would be heavily influenced by the respondent's assumptions about what might be "reportable" reasons for not getting needed care and their understanding of what "barriers to health care" are. This can make the responses less comparable and would also add another layer of subjectivity, whereby the interviewer or analyst would need to code the respondent's answers based on the predefined response categories. The latter approach is expected to elicit more comprehensive and comparable answers, but the length of time it takes to read out all the response options would increase the burden on both interviewer and respondent.
- **Service-specific versus general questions on barriers:** Compare the effects of repeating the question on barriers/reasons for forgone care (question Q05) for each type of health service/product that the respondent delayed getting or did not receive (as identified in response to question Q04) versus asking the question only once for "outpatient care" in general (as is presented in the sample questionnaire, below). The former approach is expected to increase the specificity of the information gained and its potential utility for policy formulation, but will lengthen the survey time. The latter approach requires fewer questions and captures a broader range of potentially cross-cutting barriers, but limits the ability to link the barriers to specific services/products.

Decisions on whether to include only the core question set or also some/all of the supplementary questions – and on the exact formulation of questions and response options – should be made case by case, considering several factors. These include, for example, whether a few questions are being added to an existing survey with limited space or scope, or whether a new standalone survey is being developed to investigate the nature and drivers of forgone care in detail.

Decisions should also balance the trade-offs between the specificity and generality of the information to be collected. More specific questions (such as those assessing barriers related to certain health services/products needed in a situation) may lead to more actionable insights, but will require a longer survey and potentially perpetuate siloed policy responses. More general questions (such as those assessing broader health system barriers) can be captured by a shorter survey and may help to identify cross-cutting barriers, but may lack sufficient detail to fully inform targeted policy development.

Core set

Note: this is a "living" version for further testing and should not be considered final

Core* questions on outpatient health care services and products

INTERVIEWER to read to respondent:

I would like to ask about your recent experiences with obtaining health care (including health services and/or products) from health care workers, hospitals, clinics or other parts of the health care system. I would like to know whether you needed any health care recently, whether you received it, and if not, why.

I will start with questions related to outpatient care. Outpatient health care includes services you may have received at a hospital, health centre, clinic, private office, diagnostic centre or at home from a health care provider that did not require an overnight stay in a health facility. It also includes health care products such as prescription medicines, assistive devices and diagnostic products.

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
Q00	In the last 12 months, did you need outpatient health care (either services or products, or both)? *[Note: the description of outpatient health care services and products is provided in the introduction to the question set]*	1. Yes 2. No	No	If (2), go to Q06	Need
Q01	The last time you needed outpatient health care, did you seek care?	1. Yes 2. Yes, but delayed 3. No	No	If (3), go to Q04	Access
Q02	The last time you sought outpatient health care, did you receive it?	1. Yes 2. Yes, but delayed 3. No	No	If (3), go to Q04	Access
Q03	The last time you sought outpatient health care (including services and products) were your needs: fully met, partially met or not met at all?	1. Fully met need 2. Partially met need 3. Not met at all	No	If (1), go to Q06 If (2) or (3), go to Q04	Access

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
Q04	What type(s) of services and products did you delay getting, only partially receive or did not receive at all last time? *[Note: read out options]* *[Select all that apply]*	1. GP visit *(or local term for primary care provider)* 2. Medical specialist consultation/ referral 3. Diagnostic tests (e.g. blood tests, scans (X-ray, ultrasound, MRI or other)) 4. Mental health care support, services or treatment 5. Prescribed medicines** 6. Assistive devices for vision, hearing and communication (e.g. corrective eyeglasses, hearing aids, crutches) 7. Other health products for personal diagnostics (e.g. thermometer), prevention (e.g. contraceptives, face masks, insecticide-treated nets) or treatment (e.g. inhalers, syringes) 8. Preventive health care (routine check-up) or vaccinations 9. Oral health care for a problem with teeth, gums or mouth 87. Other, specify _____	Yes		Access

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
Q05	What reason(s) best explain(s) why you delayed, did not receive or only partially received the outpatient health care you needed last time? OR If Q03 = (2) or (3), ask: What reason(s) best explain(s) why your health care needs were not fully met? *[Note: Allow respondent to answer as an open-ended question first; then read out all the response options and confirm their choices.]* [7] *[Select all that apply]*	1. Health service/ facility not available 2. Health products (e.g. medicines, devices and/or equipment) not available or inadequate 3. Direct cost of care itself (e.g. provider fees, medicines, products) was too expensive 4. Insurance or government coverage did not pay for the care needed 5. Indirect costs (e.g. transport, accommodation, lost income while seeking care) were prohibitive 6. No transport available and/or problems physically accessing the facility 7. No time 8. Long waiting time 9. Provider hours limited 10. Did not know where to go 11. Facility/laboratory/pharmacy did not accept the referral or prescription 12. No one to accompany me 13. Did not have permission to go or use funds for care (e.g. needed approval from spouse/household to travel or spend) 14. Difficulties due to gender, language, lack of privacy or other sociocultural barriers 15. Fear of staff/tests/treatment/ results or getting sicker at facility due to exposure to other illnesses 16. Illness/sickness/health problem not serious enough 17. Chose to self-treat 18. Care was denied 19. Negative perception of providers (due to previous bad treatment or perceived lack of skills) 87. Other, specify_____	Yes	*[If the respondent selects (3), (4) or (5) (i.e. cost-related reasons), the supplementary questions on financial accessibility could be asked to further explore the cost-related barriers.]* *[If the respondent selects (14), (15), (16), (17), (18) or (19), the supplementary questions on acceptability-related barriers are relevant.]*	Barrier

[7] In testing this set of reasons, responses should be tested using two approaches. First, by allowing respondents to reply to an open question with no prompting and then coding their answer to one of the response options; second, by reading out the response options and asking them to select all that apply. This dual approach is important to assess whether the method of elicitation significantly influences the response.

Core* questions on inpatient health care services (focused on overnight stays)

INTERVIEWER to read to respondent:

I now want to ask you about any recent overnight stays in a health facility.

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
Q06	In the last 12 months, did a doctor or other health care professional tell you that you needed to stay overnight in a health facility?	1. Yes 2. No	No	If (2), go to —END—	Barrier
Q07	During the last 12 months, the last time you needed overnight health care, did you receive it?	1. Yes, immediately 2. Yes, but delayed 3. No	No	If (1), go to —END—	Access

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
Q08	Thinking about the last time you needed overnight health care, what reason(s) best explain(s) why you delayed staying or did not stay overnight in a health facility? *[Note: Allow respondent to answer as an open-ended question first; then read out all the response options and confirm their choices.] [Select all that apply]*	1. Health service/facility not available 2. Health products (e.g. medicines, devices and/or equipment) not available or inadequate 3. Direct cost of care itself (e.g. provider fees, medicines, products) was too expensive 4. Insurance or government coverage did not pay for the care needed 5. Indirect costs (e.g. transport, accommodation, lost income while seeking care) were prohibitive 6. No transport available and/or problems physically accessing the facility 7. No time 8. Long waiting time 9. Provider hours limited 10. Did not know where to go 11. Facility/laboratory/pharmacy did not accept the referral or prescription 12. No one to accompany me 13. Did not have permission to go or use funds for care (e.g. needed approval from spouse/household to travel or spend) 14. Difficulties due to gender, language, lack of privacy or other sociocultural barriers 15. Fear of staff/tests/treatment/ results or getting sicker at facility due to exposure to other illnesses 16. Illness/sickness/health problem not serious enough 17. Chose to self-treat 18. Care was denied 19. Negative perception of providers (due to previous bad treatment or perceived lack of skills) 87. Other, specify _____	Yes	Go to —END— *[If the respondent selects (3), (4) or (5) (i.e. cost-related reasons), the supplementary questions on financial accessibility could be asked to further explore the cost-related barriers.]* *[If the respondent selects (14), (15), (16), (17), (18) or (19), the supplementary questions on acceptability-related barriers are relevant.]*	Barrier

—NOTES—

** In an omnibus health, social or economic survey, if a respondent reports having received care, additional questions would be asked about that episode of health care utilization. These may include questions on the reasons for needing care, reasons for any delay in seeking or receiving care, and the outcomes, costs and quality of care received, as well as other details about the care received. For partially met health care need, the questions on forgone health care would accompany questions on health care utilization (see, for example, WHO's WHS+ module on health care utilization). Health care utilization questions are also important for respondents who may have forgone care in one area (such as outpatient care or mental health services) but were, for example, hospitalized during the timeframe queried by the survey.*

*** The regulation of prescribed medicines varies widely across countries, which means the scope of medicines referred to in this question will also differ. In some countries, a prescription is not always required to purchase medicines such as antibiotics, opioids or oral contraceptives. Consequently, in settings where the range of prescription-only medicines is limited, this question captures a narrower scope and should therefore be interpreted with caution, especially when comparing observations across countries.*

—END—

– OR Health care utilization questions, if part of an omnibus survey (for example, WHO's WHS+)
– AND/OR Supplementary set 1 questions on barriers (below)
– AND/OR Supplementary set 2 questions on tracer conditions (below)

Supplementary set 1: Selected barrier domains

Note: this is a "living" version for further testing and should not be considered final

The questions in Supplementary set 1 can be added to a survey to supplement the core set, enabling further investigation of the barriers related to financial accessibility, acceptability and effective coverage.

Supplementary questions on financial accessibility-related barriers

If the response to Q05 or Q08 in the core set is (3), (4) or (5), then supplemental questions on costs can be asked to respondents who indicated one of the following barriers to outpatient and inpatient care:

- direct cost of care itself (e.g. provider fees, medicines, products) was too expensive;
- insurance or government coverage did not pay for the care needed; or
- indirect costs (e.g. transport, accommodation, lost income while seeking care) were prohibitive.

INTERVIEWER to read to respondent:

Now I would like to ask about what types of costs you could not afford in the last 12 months, and why.

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
FA1	Just to confirm: In the last 12 months, you said you could not afford the cost of health care. Is that correct?	1. Yes 2. No	No		Cost
FA2	What type(s) of cost(s) could you not afford to pay? *[Select all that apply]*	1. Cost of visits to a health professional and related interventions (e.g. surgery, physical therapy) 2. Cost of prescribed medicines or health products (e.g. assistive devices such as hearing aids, or other) 3. Cost of prescribed diagnostic tests (e.g. laboratory tests, scans) 4. Cost of overnight stay(s) in a health facility 5. Informal payments (cash or in-kind) to the provider of the service or product 6. Transport and accommodation costs to travel to the provider of the service or product 7. Cost of childcare or care for older persons during my absence 8. Loss of income due to missing work or other income-generating activities while receiving treatment	Yes		Type of cost

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
FA3	Why could you not afford to pay? *[Select all that apply]* *[Adapt for country context by removing or refining options (5), (6), (7), (8) and (9), if needed]*	1. Do not earn enough money 2. Do not have enough savings 3. Would need to borrow money or take on debt to pay 4. Would need to reduce consumption of other essentials (e.g. housing/rent, food, utilities) to pay 5. Do not have health insurance 6. Not covered by a government scheme, or only partially covered 7. Have health insurance, but it does not cover the cost of the care needed 8. Have health insurance, but it does not cover the full amount (there are user charges) 9. Have health insurance, but it requires me to pay and then get reimbursed later, which I cannot afford 10. Not covered by charitable institutions or other institutions that provide care 11. Did not get permission to use household money to pay	Yes	If (5) or (6), go to FA4	Reason
FA4	What is the main reason you do not have health insurance or are not covered by a government scheme? *[Select all that apply]*	1. Too expensive 2. Not eligible 3. Unaware of health insurance or government schemes 4. Paperwork is too complex, or do not understand how to subscribe/ sign up 5. Unable to renew in time 6. Lost my job 7. Found it is not worth it, as extent of coverage is low and/or reimbursement takes too long 8. Other, specify _____	Yes	Go to —END—	Insurance coverage

—END—

Supplementary questions on acceptability-related barriers

If the response to Q05 or Q08 in the core set is (14), (15), (16), (17), (18) or (19), then supplemental questions on acceptability can be asked to respondents who indicated one of the following barriers to outpatient and inpatient care:

- difficulties due to gender, language, lack of privacy or other sociocultural barriers;
- fear of staff/tests/treatment/results or getting sicker at facility due to exposure to other illnesses;
- illness/sickness/health problem not serious enough;
- chose to self-treat;
- care was denied; or
- negative perception of providers (due to previous bad treatment or perceived lack of skills).

INTERVIEWER to read to respondent:

Now I would like to ask about some of the reasons you did not get health care in the last 12 months.

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
A1	Just to confirm: In the past 12 months, was there a time when you delayed or did not get health care due to any of the following reasons? *[Select all that apply]*	1. Language barrier 2. Received/used traditional healing methods 3. Self-treatment 4. Lack of trust in providers 5. Lack of privacy 6. Had to prioritize work 7. Had to prioritize taking care of family members 8. Illness/sickness or health problem was not serious enough or did not take precedence over other priorities 9. Fear of results and inability to confront or address them 10. Lack of provider of the same sex	Yes	If (2), go to A2 If (4), go to A3 If (2) and (4), go to A2 and A3	Acceptability

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
A2	What led you to seek care from a traditional/local healer only (i.e. not in combination with conventional health care)? *[Select all that apply]*	1. Prefer and trust them more than, or as much as, conventional health care 2. Was referred to a traditional/ local healer by a conventional health care provider 3. Experienced barriers in accessing conventional health care, and going to a traditional/ local healer was my only or faster option 4. Experienced conflicting advice between medical professionals and traditional healers, and felt I had to choose one approach 5. Was concerned about disapproval or judgement from my community if I used non-traditional or conventional health care services	Yes		Acceptability (traditional medicine)
A3	What are the main reasons you do not trust the health system? *[Select all that apply]*	1. Previous experience of discrimination (e.g. based on sex, gender, ethnicity, disability, religion, caste, occupation, income) 2. Health care providers do not show respect, or did not listen to me 3. Informal payments or bribes (including in-kind) 4. Fear that my medical condition would not be kept confidential 5. Fear of getting sicker at health facility due to medical errors or exposure to other illnesses	Yes		Acceptability (trust)

—END—

Supplementary questions on effective coverage-related barriers

If the response to Q02 or Q07 in the core question set is (1) or (2), then supplemental questions on effective coverage-related barriers can be asked to respondents who indicated that the last time they needed outpatient or inpatient care, they received it immediately or after some delay. Alternatively, the supplemental questions on effective coverage-related barriers can be asked after the "Health care utilization" questions of a given survey to respondents who indicated any use of health care.

INTERVIEWER to read to respondent:

I would like to ask a few more questions about the care you received. When answering, please consider all aspects of your experience related to that care.

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
EC1	Overall, how would you rate the quality of care you received?	1. Very good 2. Good 3. Moderate 4. Poor 5. Very poor	No		Quality
EC2	Overall, how satisfied were you with the care you received?	1. Very satisfied 2. Satisfied 3. Neither satisfied nor dissatisfied 4. Dissatisfied 5. Very dissatisfied	No		Quality
EC3	What was the outcome of your visit to the health care provider?	1. Got much better 2. Got better 3. No change 4. Got worse 5. Got much worse	No		Outcome
EC4	Was this the outcome/result you had expected?	1. Yes 2. No	No		Outcome

—NOTES—

Effective coverage is a concept that – when used in relation to (full or partial) unmet health care need – can be particularly useful to understand why individuals in need of services did not receive care of sufficient quality to obtain potential health gains, or had negative experiences that could contribute to them forgoing health care in the future. The question can gather overarching information on levels of satisfaction with the care received. Although limited in scope, when combined with other survey dimensions and/or mixed methods approaches, the question can also generate insights into patients' experiences across the seven dimensions of quality: equity, safety, effectiveness, people-centredness, efficiency, timeliness and integration (2).

—END—

Supplementary set 2: Selected tracer conditions

Note: this is a "living" version for further testing and should not be considered final

The questions in Supplementary set 2 can be added to a survey to supplement the core set, serving as tracer conditions for self-reported forgone care.

Supplementary questions on oral health care

This set of supplemental questions (OHC1 and OHC2) focuses on oral health care. If the response to Q04 in the core set is (9) (among other reasons selected, and not as the sole response to Q04), then these supplemental questions enable identification of the specific reasons for self-reported forgone oral health care. Oral health care is included as a tracer for two main reasons: a) it can be used as an indirect measure of health equity, as oral diseases disproportionately affect poorer and disadvantaged groups, and oral health care services are often unavailable, unaffordable or inappropriate – and less likely to be covered by essential service packages contributing to progress towards UHC *(3, 4)*; and b) it supports data collection on oral health care coverage *(5)*.

INTERVIEWER to read to respondent:

Among the types of health care that you did not receive, you specifically mentioned oral health care. We understand that some of the reasons you gave for not getting the care you needed may have applied to oral health care, while others may have applied to different types of care. We would now like to ask specifically about the reasons why you could not get oral health care.

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
OHC1	Just to confirm: In the last 12 months, did you need any care or treatment from a health care provider for a problem with your teeth, gums or mouth?	1. Yes 2. No	No		Need

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
OHC2	What reason(s) best explain(s) why you delayed, did not receive or only partially received the oral health care you needed last time? OR If Q03 in core set = (2) or (3), ask: What reason(s) best explain(s) why your health care needs were not fully met? *[Note: Allow respondent to answer as an open-ended question first; then read out all the response options and confirm their choices.]* *[Select all that apply]*	1. Health service/facility not available 2. Health products (e.g. medicines, devices and/or equipment) not available or inadequate 3. Direct cost of care itself (e.g. provider fees, medicines, products) was too expensive 4. Insurance or government coverage did not pay for the care needed 5. Indirect costs (e.g. transport, accommodation, lost income while seeking care) were prohibitive 6. No transport available and/or problems physically accessing the facility 7. No time 8. Long waiting time 9. Provider hours limited 10. Did not know where to go 11. Facility/laboratory/pharmacy did not accept the referral or prescription 12. No one to accompany me 13. Did not have permission to go or use funds for care (e.g. needed approval from spouse/household to travel or spend) 14. Difficulties due to gender, language, lack of privacy or other sociocultural barriers 15. Fear of staff/tests/treatment/ results or getting sicker at facility due to exposure to other illnesses 16. Illness/sickness/health problem not serious enough 17. Chose to self-treat 18. Care was denied 19. Negative perception of providers (due to previous bad treatment or perceived lack of skills) 87. Other, specify____	Yes		Barriers

Supplementary questions on mental health support, care or treatment

This set of supplemental questions (MHC1 and MCH2) focuses on mental health support, care or treatment. If the response to Q04 in the core set is (4) (among other reasons selected, and not as the sole response to Q04), then these supplemental questions enable identification of the specific reasons for self-reported forgone mental health care. Mental health care is included as a tracer because of its relevance to health equity: structural determinants such as poverty and insecure/adverse employment conditions can have significant impacts on mental health, while individuals experiencing these factors are also among those least likely to have access to effective and appropriate care *(6)*.

INTERVIEWER to read to respondent:

Among the types of health care that you did not receive, you specifically mentioned mental health support, care or treatment. We understand that some of the reasons you gave for not getting the care you needed may have applied to mental health support, care or treatment, while others may have applied to different types of care. We would now like to ask specifically about the reasons why you could not get mental health support, care or treatment.

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
MHC1	Just to confirm: In the last 12 months, did you need any care or treatment (such as psychological therapy, counselling sessions or medication from a doctor or other health worker) for symptoms of depression, anxiety or any other mental health condition?	1. Yes 2. No	No		Need

Question number	Questions	Response options	Multiple responses allowed?	Skip pattern/ filters	Measured construct
MHC2	What reason(s) best explain(s) why you delayed, did not receive or only partially received the mental health support, care or treatment you needed last time? OR If Q03 = (2) or (3), ask: What reason(s) best explain(s) why your health care needs were not fully met? *[Note: Allow respondent to answer as an open-ended question first; then read out all the response options and confirm their choices.]* *[Select all that apply]*	1. Health service/ facility not available 2. Health products (e.g. medicines, devices and/or equipment) not available or inadequate 3. Direct cost of care itself (e.g. provider fees, medicines, products) was too expensive 4. Insurance or government coverage did not pay for the care needed 5. Indirect costs (e.g. transport, accommodation, lost income while seeking care) were prohibitive 6. No transport available and/or problems physically accessing the facility 7. No time 8. Long waiting time 9. Provider hours limited 10. Did not know where to go 11. Facility/laboratory/pharmacy did not accept the referral or prescription 12. No one to accompany me 13. Did not have permission to go or use funds for care (e.g. needed approval from spouse/household to travel or spend) 14. Difficulties due to gender, language, lack of privacy or other sociocultural barriers 15. Fear of staff/tests/treatment/ results or getting sicker at facility due to exposure to other illnesses 16. Illness/sickness/health problem not serious enough 17. Chose to self-treat 18. Care was denied 19. Negative perception of providers (due to previous bad treatment or perceived lack of skills) 87. Other, specify____	Yes		Barriers

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Part 6

Discussion, next steps and future research areas

6

Part 6. Discussion, next steps and future research areas

Added value of measuring self-reported forgone health care in relation to UHC

This technical report responds to World Health Assembly resolution WHA76.4, which requested WHO to review the importance and feasibility of using unmet health care need as an additional indicator for monitoring UHC *(1)*. While noting there are numerous methods for measuring unmet health care need, this research specifically reviewed the measurement of self-reported forgone care and its reasons as captured in health and social surveys. Measuring self-reported forgone care offers an important opportunity to bring person-centred perceptions of health system deficiencies into the measurement of UHC. The measurement of self-reported forgone care through survey interviews provides a structured mechanism for people to express their needs and shed light on where and how the system may not be adequately responding to the supply- and demand-side factors that contribute to unmet health care need.

Survey-based data on unmet health care need have been included in the indicator dashboards of the WHO regional offices for the Americas and Europe as part of regional-level health systems and equity monitoring mechanisms *(*see *2, 3)*. These and other survey-derived data can complement the data used for monitoring the service coverage and financial protection dimensions of UHC. In addition to measuring forgone care, analysing the barriers to receiving care – coupled with disaggregation and deconstruction by barrier type – has the potential to enhance the people-centredness and responsiveness of health systems, and may also provide a target for reforms that advance progress towards UHC. Measurement of self-reported forgone health care could also have additional applications, including use alongside other health-related SDG indicators, health system performance and equity measures, and cross-sectoral population health interventions such as the planning of integrated service delivery for social protection programmes and/or long-term integrated social and health care services.

Contribution of the paper to measurement of self-reported forgone health care

This technical report summarizes findings from a rapid review of literature on the measurement of unmet health care need, a desk review of survey questions on self-reported forgone care and its reasons, and a targeted analysis of this variable in selected surveys. Although previous studies have summarized results using quantitative analysis of survey data and/or within regional/geographical contexts (see Pan American Health Organization, 2024 *(4)*, Rahman et al., 2022 *(5)*, OECD, 2020 *(6)*, Kowal et al., 2023 *(7)*, WHO, 2024 *(8)*), or have deliberated theoretical definitions and framing (see Carroll et al., 2022 *(9)*, Rodriguez Santana et al., 2023 *(10)*; Smith & Connolly, 2020 *(11)*), or attempted to assess perceived and unperceived health care need (Ranjan, Thiagarajan & Garg, 2023 *(12)*), this paper makes a unique contribution through the breadth of surveys and volume of questions reviewed. The results will help to provide a foundation for WHO's strategy to standardize measurement methods of self-reported forgone health care. This research has reviewed questions across a large number of surveys covering all WHO regions, deconstructed the questions into their core elements and, based on both qualitative synthesis and statistical analysis of the data, developed a concise survey module/question set for further testing and development.

Many of the primary research queries raised by the WHO Working Group on Unmet Health Care Need and Barriers (see Annex 2) have been addressed in this paper; however, the survey reviews and targeted analyses also raised more questions. The Working Group foresaw this and, therefore, incorporated multiple interconnected work stages as part of its overall strategy (see Fig.1 in the Introduction and methods), including further scientific exploration and in-country testing.

The paper serves as input towards an emerging WHO position on the standardized quantitative measurement of self-reported forgone care and its reasons, as a component of unmet health care need. This normative position, alongside future global normative tools and the availability of data in relevant WHO online databases for a growing set of countries over time, will help to:

- support national authorities (including statistical authorities and survey managers) and development partners in refining their approaches to the measurement of self-reported forgone care;
- support researchers in the analysis of self-reported forgone care (including over time) within and across countries;
- contribute to the refinement of global metrics for the measurement of UHC; and,
- inform the integration of health care needs and unmet health care needs in the post-SDG agenda.

Methodological and analytical challenges

The research team and WHO Working Group observed several methodological and analytical challenges related to the measurement of self-reported forgone care that should be noted. While these build on some of the original queries identified (see Annex 2), the research conducted for this paper offered additional insights and prompted reflections on areas for further research or consideration. These are listed below.

1. **Mind the social gradient.** The survey module/question set presented in this technical report will not capture data on respondents with unperceived health care needs, unless other parts of the survey tool (such as biomarker testing) indirectly facilitate this. As there can be a social gradient in undiagnosed health conditions, socioeconomically disadvantaged populations are more likely to be undiagnosed and unaware of having a health condition, and therefore be underrepresented in the survey sample itself *(13–17)*. As a result, the survey data may underestimate the true level of self-reported forgone care or the proportionate weight of unmet need among the most socioeconomically disadvantaged groups (particularly for undiagnosed chronic conditions that are asymptomatic). In situations where there is a high potential for this, due to limited diagnostic capacity and/or proven levels of under/undiagnosed persons identified through other means, further research and testing are required on ways to best address unperceived health care needs.

2. **Mind the missing respondents.** Capturing unmet health care need among disempowered populations or groups not sufficiently incorporated into survey sampling frames presents a challenge. This could include underreporting of unmet need in unmarried women or girls, even when captured as part of a household roster, as well as populations traditionally not included in survey sampling or other data collection efforts (for example, nomadic or homeless people, institutionalized populations) or not adequately captured by existing standard survey questions (for example, Indigenous or non-binary populations) *(18, 19)*.

3. **Mind the "most recent incident".** Questions in omnibus health surveys typically focus on the most recent episode of met or unmet need in an effort to reduce recall (and other) biases and maintain reliability of results. This may miss instances where a person had multiple interactions with the health care system in the 12 months prior to interview where their needs were met, but only the most recent episode was unmet. General recall biases affect self-reported instances of health care visits and some studies suggest that older people, for example, tend to underreport health care use *(20, 21)*.

4. **Mind the denominators**. Variations in how the denominator is defined when calculating the proportion of unmet health care need can influence estimates across studies, even when using survey data from the same year/wave *(6)*. Also, it is important to understand how forgone care estimates may differ when the denominator is the total population versus only the respondents who reported a health care need. For instance, surveys such as the EU-SILC and the Commonwealth Fund's International Health Policy Survey generate estimates from the full survey population, whereas most studies included in this paper use a denominator of the population who reported a need or health problem. Further research is required, including at country level and through mixed methods and data triangulation, to determine the most accurate way to quantify forgone care and the most precise means to identify its underlying reasons in different settings.

5. **Mind interpretation/understanding across languages.** Designing questions that reduce variability in how respondents interpret a question about health care need could help to derive more consistent estimates across studies. Questions that include a subjective word or phrase such as "really needed care" can lead to differences in meaning across different population groups or language translations *(22)*. For example, in the EU-SILC question: "Was there any time during the last 12 months when you, personally, really needed a medical examination or treatment for a health problem but you did not receive it?"

6. **Mind variation in variables and population subsets across surveys.** The specific survey questions used to calculate the proportion of people with unmet health care needs may differ from study to study. For example, in analyses of the CHARLS survey, some studies estimated overall (general) unmet health care need based on combining the outpatient and inpatient care questions *(23)*, while others estimated these two dimensions separately. In addition, different studies may focus on different population subsets, possibly leading to variations in estimates of unmet health care need. For instance, estimates can vary depending on whether they are based on participants who completed follow-up in one wave (for a longitudinal study) *(24)* or use all available waves of data *(25)*.

7. **Mind variation in what prescription medicine questions cover across countries.** The control of medicines varies widely across countries, which means the scope of medicines in the example survey questions in Part 5 also differs. In some countries, a prescription is not always required to purchase medicines such as antibiotics, opioids or oral contraceptives. Consequently, in settings where the range of prescription-only medicines is limited, this question captures a narrower scope and should therefore be interpreted with caution – especially when comparing observations across countries. Notwithstanding this issue, a question set on medicines is included because their cost can cause catastrophic out-of-pocket expenditure for households, and therefore is central to unmet health care need and barriers data collection. There may be additional interest in collecting data about non-prescription medicines, but the example module focuses on prescription medicine alone for simplicity.

The above list is not exhaustive. Many additional reflections on methodological and analytical challenges (and opportunities) were identified, including, but not limited to: using objective health measures to identify general and disease-specific need; expanding the exploration of effective coverage issues such as care coordination and continuity and health outcomes among those who report met need; considering the value and best means of triangulating self-reported forgone care data with administrative/utilization data; and – for cross-sectoral analysis – how to measure met and unmet needs for integrated social and health services. While important, these issues were outside of the scope of this paper to sufficiently cover in detail.[8]

Limitations

The complex nature of health care needs and access presents a significant measurement challenge. Unmet health care needs are influenced by the interplay of multiple factors, including social determinants of health, community norms and individual values, health literacy and current symptoms. Measurement of unmet health care need in surveys does not capture those who do not perceive a need, a limitation that may also disproportionately impact certain populations, particularly those facing greater barriers to accessing care. This complexity makes it difficult to develop questions that are reliable and practical for inclusion in omnibus household surveys. In addition, surveys often lack regular and frequent data collection cycles – or questions may change over time. Reliance on self-reported data from surveys alone introduces potential biases that can vary across cultural and country contexts, as respondents may interpret and respond to questions about unmet needs differently. Where other information sources on unmet health care need exist (such as service utilization or administrative data), multiple sources of information could potentially be used to refine estimates of unmet health care need.

Some of the limitations of survey data discussed in this paper are not unique to the topic of unmet health care need. However, in the case of forgone care, these limitations could potentially be overcome by using other data sources and data collection methods. Unfortunately, these options may also have limitations. For example, measurement of unmet health care need based on administrative data, clinical practice guidelines or burden of disease-based estimates of treatment gaps/preventable mortality are disease-specific and may still miss individuals who do not access care or do not perceive a need for care *(11)*.

Drawing on additional sources of information on unmet health care needs – such as data on oral or mental health, potentially preventable hospitalizations and hospital emergencies – may help to refine estimates, especially when used to assess severity of illness/injury or different types of care that respondents may not consider when answering survey questions about need. However, these options also have limitations, such as difficulties in accessing administrative data, the different populations covered and longer interview times due to more questions. Data availability is also country-specific and data development costly, meaning triangulation of data may only be feasible in some settings.

Entry points to health care vary by country and this may contribute to variability in respondents' understanding of questions about unmet health care need and variability in results. For example, some health systems require referral from a primary care doctor to access tertiary care, while this gatekeeping role is not present in other systems. To account for these health system variations, some surveys (for example, WHS+, SAGE, CHARLS) differentiate between outpatient and inpatient care in their question design.

[8] This can include exploring the benefits of addressing social care needs (and unmet needs) as a mechanism to reduce unnecessary health system utilization and related costs, in particular among ageing populations.

The research methods used for this paper involved identifying and reviewing a large number of surveys across all WHO regions, including several international (WHO and non-WHO) surveys, and extracting questions on perceived general (non-disease/condition-specific) need for and receipt of health care. The main limitations of this approach relate to the inclusion/exclusion criteria applied to the search for surveys. These criteria were necessary for practical and technical reasons (i.e. inclusion of recent surveys to reflect current best practices and exclusion of disease/condition-specific questions to identify questions that assess health needs for any reason). As a result, some relevant surveys and the questions therein may have been missed – those not in the public domain, those not conducted in English or published in journal articles in the English language during 2020–2025, those not based on nationally representative samples, or those that had a focus on specific health conditions or needs.

The deconstruction of relevant survey questions into their basic elements (for example, timeframe, provider/service type) was undertaken using an inductive approach in the absence of a predefined framework. The categorization of reasons for unmet need into barrier categories was guided by the literature and the WHO handbook on barriers assessment *(26)*. While reliable overall, this process involved an element of subjective judgment and (with different researchers) may result in slightly different categorization.

Next steps and future research

WHO's next steps on the measurement of self-reported forgone health care are embedded in the four-year workplan of the WHO Working Group on Unmet Health Care Need and Barriers. A synopsis of this plan is provided in Annex 6. The ability to execute these plans will depend on resource availability and strategic partnerships. Envisaged activities involve actions at country and regional/global levels.

At global level, following the publication of this technical report and module/question set, a process of deepened review and exploration of key measurement issues is envisaged. The key measurement issues could be summarized in a potential scientific journal special edition on measurement of unmet needs, widening the debate to international expert groups and through a global consultation/think tank meeting (resources permitting). This process would be undertaken to move towards an agreed standard survey module/question set (see Part 5 of this paper) for the measurement of forgone health care. Related country-level activities involve: coordinating with national authorities for testing the module/question as part of the roll-out of WHS+ in selected countries, including with oversampling of underrepresented subpopulations; collaborating with government authorities and others to test the module/question set in national and partner surveys; and supporting authorities and partners in mixed methods assessments of barriers to health services and data-to-action participatory stakeholder meetings. The latter includes testing in humanitarian and other contexts. A culture of learning will be adopted whereby lessons in using the instruments will be documented, policy relevance and transferability to action analysed, and critical refinement of measurement approaches done.

Priorities for future research, beyond those already mentioned, include further exploration of the issues listed in Annex 2, as it was not possible to address them all in sufficient detail in this paper. This is a necessary step to provide evidence for further refining questions on self-reported forgone care and/or to maximize usefulness of the data obtained as evidence for health care delivery and for monitoring progress towards UHC.

Critical issues to be further researched in the immediate term include:

- choice of denominators and recall periods;
- choice of focus (e.g. including public sector provider and/or private sector provider);
- linkages to a health condition (e.g. based on self-reported status or biomarker verification);
- location of the questions set in a survey (health block, expenditure block or elsewhere);
- potential biases introduced through sampling approaches;
- approaches to disaggregation by inequality dimensions;
- potential use of the unmet health care need indicator as a stratifier for other indicators; and
- measurement approaches for humanitarian contexts.

Finally, while the research methods for this paper involved identifying and reviewing 94 surveys across 152 countries, this is not an exhaustive list and some WHO regions were less represented than others. WHO aims to enhance the availability of data on self-reported forgone care – drawing from surveys featured in Annex 3 and by steadily adding others – through the WHO Health Inequality Data Repository *(27)*.

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Annex 1.
WHO-related publications and resources on unmet health care need and barriers

Publications

Analyzing and overcoming access barriers to strengthen primary health care. Washington, DC: Pan American Health Organization/World Health Organization Regional Office for the Americas; 2023 (https://iris.paho.org/handle/10665.2/59292).

Assessment of barriers to accessing health services for disadvantaged adolescents in Nigeria. Brazzaville: WHO Regional Office for Africa; 2019 (https://iris.who.int/handle/10665/324926).

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Barriers and facilitating factors in access to health services in the Republic of Moldova. Copenhagen: WHO Regional Office for Europe; 2011 (https://iris.who.int/handle/10665/375372).

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Handbook for conducting assessments of barriers to effective coverage with health services: in support of equity-oriented reforms towards universal health coverage . Geneva: World Health Organization; 2024 (https://iris.who.int/handle/10665/377956).

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Tracking universal health coverage: 2021 global monitoring report. Geneva: World Health Organization, World Bank; 2021 (https://iris.who.int/handle/10665/357607).

Tracking universal health coverage: 2023 global monitoring report. Geneva: World Health Organization, World Bank; 2023 (https://iris.who.int/handle/10665/374059).

WHO surveys that include measures for unmet health care need

Model Disability Survey:
https://www.who.int/news-room/questions-and-answers/item/model-disability-survey.

World Health Survey (WHS) and World Health Survey Plus (WHS+)[9]:
https://www.who.int/data/data-collection-tools/world-health-survey-plus.

WHO Study on global AGEing and adult health (SAGE)1:
https://www.who.int/data/data-collection-tools/study-on-global-ageing-and-adult-health.

WHO dashboards, databases and tools

The Global Health Observatory: https://www.who.int/data/gho/indicator-metadata-registry/imr-details/855.

WHO Health Equity Assessment Toolkit (for disaggregation of unmet health care indicators by inequality dimensions):
https://www.who.int/data/inequality-monitor/assessment_toolkit.

WHO Regional Office for the Americas/Pan American Health Organization. Dashboard of indicators for health systems based on primary health care: https://www.paho.org/en/tablero-indicadores-aps.

WHO Regional Office for Europe. UHC watch: indicator explorer:
https://apps.who.int/dhis2/uhcwatch/#/indicator-explorer.

[9] At the time of writing, WHO had conducted the WHS in 69 countries, SAGE in more than 10 countries and WHS+ in four countries to gather data on population health needs, unmet health care needs and health system performance. Subject to resource availability, WHS+ will be implemented in additional countries in 2025 and beyond. These surveys collect information on self-reported unmet needs for health care services, unmet social care need, reasons for not accessing health care and the impact of financial barriers.

Annex 2. Issues identified by the WHO Working Group on Unmet Health Care Need and Barriers

At its April 2024 meeting, the WHO Working Group on Unmet Health Care Need and Barriers identified a list of issues to be addressed by a background paper. Due to resource considerations, not all of the issues could be addressed and/or covered in detail in the paper. Nevertheless, they oriented the longer-term workplan for the group (Fig. 1) and the areas identified in this paper as requiring further research.

1. **Definitions** of unmet need, forgone care and barriers/reasons for unmet need to be applied.

2. Existing **example indicators** across sources, and core differences and similarities.

3. Choice of **denominators** and **recall periods**, including measurement and interpretation implications, and strengths and limitations of each choice.

4. Choice of **focus** (e.g. outpatient care, inpatient care, prescriptions and medicines included or not, formal care and/or informal care including self-treatment, public sector provider and/or private sector provider, type of provider).

5. If the unmet need indicator is **linked to a health condition**, is this based on self-reported status or biomarker verification?

6. Inclusion of a **standard set of barriers/reasons** for unmet need, albeit now this may be modified for countries based on the health system model (e.g. whether there is a Bismarckian or Beveridge system, or other context such as a humanitarian situation).

7. Most **relevant existing data sources** for scaling up standardized monitoring of unmet need and barriers, **how WHS+ can be used** to further refine and scale up monitoring, and processes for influencing the instrument updates for those data sources.

8. **Location** of the questions in a survey (health block, expenditure block or elsewhere).

9. Processes for **culling data** on unmet need that are not available in usable form (i.e. in PDFs).

10. **Sampling approaches introducing biases** (e.g. collection using telephone surveys potentially having an urban plus higher socioeconomic level bias) and general considerations on drawbacks of using household surveys alone for measurement of self-reported forgone care (as those most likely to experience it may be missed by the surveys).

11. **Additional indicators on barriers** that could accompany the unmet need indicator (e.g. drawing from North Macedonian example, the global handbook on barriers assessments and the SDH measurement framework, among other sources).

12. Approaches to **disaggregation** by equity stratifiers and potential use of the unmet need indicator as a stratifier for other indicators, as well as potential means to **capture intra-household dynamics** in resource allocation leading to forgone care.

13. Testing the indicator set and its disaggregation through **four to five progressive-universalism-oriented policy scenarios**, to see how the data can inform closing coverage gaps.

14. Measurement approaches for **humanitarian contexts**.

15. Ways to measure unmet need for **integrated health and social services**.

16. **Research gaps** and key questions for refinement of an unmet need indicator and development of a shared research agenda across partners in the global UHC monitoring space.

17. **Preliminary draft questionnaire for further testing in surveys** (unmet need indicator and select other indicators on barriers to effective coverage with health services).

18. **Limitations** of the preliminary draft questionnaire.

Annex 3.
Details of surveys and studies measuring unmet health care need

WHO region(s) represented	Multiple/ single country	Survey	Year	Reference publication (if any)
All WHO regions	Multiple	Multi-Country Survey Study (MCSS)	2000/2001	
All WHO regions	Multiple	World Health Survey (WHS)	2002–2004	
All WHO regions	Multiple	World Values Survey – Wave 6 and Wave 7	2010–2014, 2016–2020	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
All WHO regions	Multiple	COVID-19 High-Frequency Phone Surveys	2020, 2021	
African, Americas, South-East Asia, European and Western Pacific	Multiple	Study on global AGEing and adult health (SAGE) – Wave 1, Wave 2, Wave 3 and Wave 4 *[Note: The same questions were used in the Mongolia Mini-SAGE in 2018, as per Table 6].*	2007–2010, 2015, 2018/2019, 2021	Kailembo A, Preet R, Stewart Williams J. Socioeconomic inequality in self-reported unmet need for oral health services in adults aged 50 years and over in China, Ghana, and India. Int J Equity Health. 2018;17:99 (https://doi.org/10.1186/s12939-018-0812-2). Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
African, Americas, South-East Asia, European and Western Pacific	Multiple	People's Voice Survey (PVS)	2022/2023	Kruk ME, Sabwa S, Lewis TP, Aneibo I, Arsenoult C, Carai S et al. Population assessment of health system performance in 16 countries. Bull World Health Organ. 2024;102(7):486–97. doi:10.2471/BLT.23.291184.
African, South-East Asia, European and Western Pacific	Multiple	Multiple surveys were included in this systematic review and meta-analysis	1996–2020	Rahman MM, Rosenberg M, Flores G, Parsell N, Akter S, Alam MA et al. A systematic review and meta-analysis of unmet needs for healthcare and long-term care among older people. Health Econ Rev. 2022;12(1):60 (https://doi.org/10.1186/s13561-022-00398-4).
African, South-East Asia and Western Pacific	Multiple	World Health Survey Plus (WHS+)	2023	

Annex 3.

WHO region(s) represented	Multiple/ single country	Survey	Year	Reference publication (if any)
Americas, European and Western Pacific	Multiple	Commonwealth Fund's International Health Policy Survey	2017, 2022	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8). 2017 Commonwealth Fund International Health Policy Survey of Older Adults [website]. The Commonwealth Fund; 2017 (https://www.commonwealthfund.org/publications/surveys/2017/nov/2017-commonwealth-fund-international-health-policy-survey-older).
African	Multiple	Harmonized Survey on Household Living Conditions, Panel Survey	2018/2019	
African	South Africa and Uganda	SAGE Well-being of Older People Study (SAGE-WOPS) (HIV study, 4 waves)	2009–2019	Mugisha JO, Edwards A, Naidoo N, Chatterji S, Seeley J, Kowal P. Longitudinal data resource from the wellbeing of older people cohort of people aged >50 years in Uganda and South Africa from 2009 to 2019. S Afr Med J. 2023;113(9):36–41. (https://doi.org/10.7196/SAMJ.2023.v113i8.16706).
African	Ethiopia	Socio-Economic Panel Survey	2021/2022	Evidence gaps on unmet health and social care needs in the WHO African Region: research report. Geneva: World Health Organization; 2025 (https://iris.who.int/handle/10665/381642).
African	Ghana	Ghana Living Standards Survey (GLSS)	1987–2016	
African	Kenya	Integrated Household Budget Survey (IHBS) (International Labour Organization)	2005/2006, 2015/2016	
African	Kenya	Kenya Household Health Expenditure and Utilization Survey (KHHEUS)	2003, 2007, 2013, 2018	Evidence gaps on unmet health and social care needs in the WHO African Region: research report. Geneva: World Health Organization; 2025 (https://iris.who.int/handle/10665/381642).
African	Malawi	Integrated Household Panel Survey (IHPS)	2019/20	
African	Nigeria	COVID-19 National Longitudinal Phone Survey (NLPS)	Phase 1: 2020/2021; Phase 2: 2021/2022	Odunyemi A, Sohrabi H, Alam K. The evolution of household forgone essential care and its determinants during the COVID-19 pandemic in Nigeria: a longitudinal analysis. PLoS One. 2024;19(4):e0296301 (https://doi.org/10.1371/journal.pone.0296301).

WHO region(s) represented	Multiple/ single country	Survey	Year	Reference publication (if any)
African	Nigeria	National Survey on Household Living Conditions and Agriculture	2023/2024	Evidence gaps on unmet health and social care needs in the WHO African Region: research report. Geneva: World Health Organization; 2025 (https://iris.who.int/handle/10665/381642).
African	Nigeria	Nigeria General Household Survey-Panel (GHS-Panel)	2023/2024	
African	Nigeria	Nigeria Living Standards Survey (NLSS)	2018/2019	
African	Rwanda	Rwanda Integrated Household Living Conditions Survey (EICV)	2000–2020	
African	Sierra Leone	Integrated Household Survey (IHS)	2003/2004, 2011, 2018	
African	South Africa	Health and Aging in Africa: Longitudinal Studies in South Africa (HAALSI)	2014/2015, 2018/2019, 2021/2022	Kowal P, Kahn K, Ng N, Naidoo N, Abdullah S, Bawah A et al. Ageing and adult health status in eight lower-income countries: the INDEPTH WHO-SAGE collaboration. Glob Health Action. 2010;3(1) (https://doi.org/10.3402/gha.v3i0.5302).
African	Gambia	Gambia Integrated Household Survey (GIHS)	2003/2004, 2010, 2015/2016, 2020	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
African	Uganda	National Panel Survey	2018/2019	Evidence gaps on unmet health and social care needs in the WHO African Region: research report. Geneva: World Health Organization; 2025 (https://iris.who.int/handle/10665/381642).
African	Uganda	Uganda National Household Survey (UNHS)	1999/2000, 2002/2003, 2005/06, 2009/2010, 2012/2013, 2016/2017, 2019/2020	
Americas	Multiple	SAlud, Bienestar y Envejecimiento (SABE) survey	2018	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).

WHO region(s) represented	Multiple/ single country	Survey	Year	Reference publication (if any)
Americas	Brazil	Brazilian National Health Survey (BNHS)	2013, 2019	Coube M, Nikoloski Z, Mrejen M, Mossialos E. Inequalities in unmet need for health care services and medications in Brazil: a decomposition analysis. Lancet Reg Health Am. 2023;19:100426 (https://doi.org/10.1016/j.lana.2022.100426).
Americas	Brazil	Brazilian Longitudinal Study of Aging (ELSI-Brazil)	2015/2016	Lima-Costa MF, de Andrade FB, de Souza PRB Jr, Neri AL, Duarte YAO, Castro-Costa E et al. The Brazilian Longitudinal Study of Aging (ELSI-Brazil): objectives and design. Am J Epidemiol. 2018;187(7):1345–53 (https://doi.org/10.1093/aje/kwx387). Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
Americas	Barbados	Barbados Survey of Living Conditions (BSLC)	2016	Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).
Americas	Bolivia (Plurinational State of)	Encuesta de Hogares	2017, 2019–2021	Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).
Americas	Canada	Canadian Community Health Survey (CCHS)	2016, 2018	Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).
Americas	Chile	Encuesta de Caracterización Socioeconómica Nacional (CASEN)	2011, 2013, 2015, 2017, 2020, 2022	Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).
Americas	Colombia	Encuesta Nacional de Calidad de Vida (ECV)	2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022	Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).
Americas	Costa Rica	Encuesta Nacional de Salud (ENSA)	2006	Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).

WHO region(s) represented	Multiple/ single country	Survey	Year	Reference publication (if any)
Americas	Ecuador	Encuesta Nacional Multipropósito de Hogares (ENMH)	2018–2020	Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).
Americas	El Salvador	Encuesta de Propósitos Múltiple (EHPM)	2016–2022	Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).
Americas	Guatemala	Encuesta Nacional de Condiciones de Vida (ENCV)	2014	Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).
Americas	Mexico	Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH)	2016, 2018, 2020, 2022	Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).
Americas	Mexico	Mexican Health and Aging Study (MHAS)	2001–2018	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
Americas	Paraguay	Encuesta permanente de hogares continua (EPHC)	2019–2022	Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).
Americas	Peru	Encuesta Nacional de Hogares (ENAHO)	2002–2022	
Americas	Puerto Rico	Puerto Rican Elder: Health Conditions (PREHCO)	2003, 2007	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
Americas	United States of America	Medical Expenditure Panel Survey (MEPS)	2018	Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).

WHO region(s) represented	Multiple/ single country	Survey	Year	Reference publication (if any)
Americas	Uruguay	Encuesta Nacional de Salud (ENS)	2014	
South-East Asia	Bangladesh	Cross-sectional, population-based household survey	No date	Pryor W, Nguyen L, Islam QN, Jalal FA, Marella M. Unmet needs and use of assistive products in two districts of Bangladesh: findings from a household survey. Int J Environ Res Public Health. 2018;15(12):2901 (https://doi.org/10.3390/ijerph15122901).
South-East Asia	Democratic People's Republic of Korea	Respondent-Driven Sampling (RDS) study	2015	Lee H, Robinson C, Kim J, Mckee M, Cha J. Health and healthcare in North Korea: a retrospective study among defectors. Confl Health. 2020;14(1):41 (https://doi.org/10.1186/s13031-020-00284-y).
South-East Asia	India	Community-based cross-sectional survey	2021	Vora K, Saiyed S, Salvi F, Baines LS, Mavalankar D, Jindal RM. Unmet surgical needs and trust deficit in marginalized communities in India: a comparative cross-sectional survey. J Surg Res. 2023;292:239–46 (https://doi.org/10.1016/j.jss.2023.08.001).
South-East Asia	India	Longitudinal Ageing Survey of India (LASI)	2017/2018	Das J, Kundu S, Hossain B. Rural-urban difference in meeting the need for healthcare and food among older adults: evidence from India. BMC Public Health. 2023;23(1):1231 (https://doi.org/10.1186/s12889-023-16126-4).
South-East Asia	India	National Sample survey (NSS) – 75th round	2018	Yadav R, Yadav J, Shekhar C. Unmet need for treatment-seeking from public health facilities in India: an analysis of sociodemographic, regional and disease-wise variations. PLOS Glob Public Health. 2022;2(4):e0000148 (https://doi.org/10.1371/journal.pgph.0000148). Yadav J, Devi S, Singh MN, Manchanda N, Moradhawaj. Health care utilization and expenditure inequities in India: benefit incidence analysis. Clin Epidemiol Glob Health. 2022;15:101053 (https://doi.org/10.1016/j.cegh.2022.101053).
South-East Asia	Indonesia	Cross-sectional survey	2022	Kusnadi G, Fletcher E, Espressivo A, Fitrianingrum NM, Saputra MA, Sophiarany N et al. Essential healthcare services during the COVID-19 pandemic: a cross-sectional study of community needs and perspectives in West Java, Indonesia. BMJ Open. 2024;14(1):e077585 (http://bmjopen.bmj.com/content/14/1/e077585).
South-East Asia	Maldives	Population-based, nationally representative survey	2017	Banks LM, O'Fallon T, Hameed S, Usman SK, Polack S, Kuper H. Disability and the achievement of universal health coverage in the Maldives. PLoS One. 2022;17(12):e0278292 (https://doi.org/10.1371/journal.pone.0278292).

WHO region(s) represented	Multiple/ single country	Survey	Year	Reference publication (if any)
South-East Asia	Myanmar	Cross-sectional survey	2022	Tinn CS, Paek SC, Meemon N. Unmet healthcare needs and their determining factors: addressing inequalities in access to healthcare in Myanmar. JPSS. 2024;32:591–608 (http://doi.org/10.25133/JPSSv322024.035).
South-East Asia	Nepal	Descriptive cross-sectional survey	2009	Kshetri DBB, Smith WCS. Self-reported health problems, health care utilisation and unmet health care needs of elderly men and women in an urban municipality and a rural area of Bhaktapur District of Nepal. Aging Male. 2010;14(2):127–31 (https://doi.org/10.3109/13685538.2010.502272).
South-East Asia	Thailand	Cross-sectional survey	2019	Kunpeuk W, Julchoo S, Phaiyarom M, Sinam P, Pudpong N, Suphanchaimat R. A cross-sectional study on disparities in unmet need among refugees and asylum seekers in Thailand in 2019. Int J Environ Res Public Health. 2021;18(8):3901 (https://doi.org/10.3390/ijerph18083901).
South-East Asia	Thailand	Health and Welfare Survey (HWS) – 5 waves	2011–2019	Meemon N, Paek SC. Factors associated with unmet need for healthcare among older adults in Thailand. APSSR. 2019;19(2):14 (https://www.dlsu.edu.ph/wp-content/uploads/pdf/research/journals/apssr/2019-June-vol19-2/14-factors-associated-with-unmet-need-for-healthcare-among-older-adults-in-thailand.pdf). Suphanchaimat R, Sinam P, Phaiyarom M, Pudpong N, Julchoo S, Kunpeuk S et al. A cross sectional study of unmet need for health services amongst urban refugees and asylum seekers in Thailand in comparison with Thai population, 2019. Int J Equity Health. 2020;19:205 (https://doi.org/10.1186/s12939-020-01316-y). Chongthawonsatid S. Identification of unmet healthcare needs: a national survey in Thailand. J Prev Med Public Health. 2021;54(2):129–36 (https://doi.org/10.3961/jpmph.20.318). Vongmongkol V, Viriyathorn S, Wanwong Y, Wangbanjongkun W, Tangcharoensathien V. Annual prevalence of unmet healthcare need in Thailand: evidence from national household surveys between 2011 and 2019. Int J Equity Health. 2021;20(1):244 (https://doi.org/10.1186/s12939-021-01578-0). Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).

WHO region(s) represented	Multiple/ single country	Survey	Year	Reference publication (if any)
South-East Asia	Thailand	Panel Socio-Economic Survey (PSES)	2005–2007	Thammatacharee N, Tisayaticom K, Suphanchaimat R, Limwattananon S, Putthasri W, Netsaengtip R et al. Prevalence and profiles of unmet healthcare need in Thailand. BMC Public Health. 2012;12:923 (https://doi.org/10.1186/1471-2458-12-923).
European	Multiple	European Health Interview Survey (EHIS)	2006–2019	Evidence gaps on unmet health and social care needs in the WHO European Region. Geneva: World Health Organization; 2025 (https://wkc.who.int/resources/publications/i/item/evidence-gaps-on-unmet-health-and-social-care-needs-in-the-who-european-region-research-report).
European	Multiple	European Social Survey (ESS)	2014/2015	Fjær EL, Stornes P, Borisova LV, McNamara CL, Eikemo TA. Subjective perceptions of unmet need for health care in Europe among social groups: findings from the European social survey (2014) special module on the social determinants of health. Eur J Public Health. 2017;27(suppl_1):82–9 (https://doi.org/10.1093/eurpub/ckw219). Schmidt AE, Rodrigues R, Simmons C, Steiber N. A crisis like no other? Unmet needs in healthcare during the first wave of the COVID-19 crisis in Austria. Eur J Public Health. 2022;32(6):969–75 (https://doi.org/10.1093/eurpub/ckac136).
European	Multiple	Survey of Health, Ageing and Retirement in Europe (SHARE)	2004–2023	
European	Multiple	EU Statistics on Income and Living Conditions (EU-SILC) Survey	2004–2015	Connolly S, Wren MA. Unmet healthcare needs in Ireland: analysis using the EU-SILC survey. Health Policy. 2017;121(4):434–41 (https://doi.org/10.1016/j.healthpol.2017.02.009). Popovic N, Terzic-Supic Z, Simic S, Mladenovic B. Predictors of unmet health care needs in Serbia: analysis based on EU-SILC data. PLoS One. 2017;12(11):e0187866 (https://doi.org/10.1371/journal.pone.0187866).
European	Austria	AKCOVID-Survey (pandemic)	2020	Schmidt AE, Rodrigues R, Simmons C, Steiber N. A crisis like no other? Unmet needs in healthcare during the first wave of the COVID-19 crisis in Austria. Eur J Public Health. 2022;32(6):969–75 (https://doi.org/10.1093/eurpub/ckac136).
European	Belgium	Mental health survey (MHS)	2021	Rens E, Michielsen J, Dom G, Remmen R, Van den Broeck K. Clinically assessed and perceived unmet mental health needs, health care use and barriers to care for mental health problems in a Belgian general population sample. BMC Psychiatry. 2022;22(1):455 (https://doi.org/10.1186/s12888-022-04094-9).

WHO region(s) represented	Multiple/ single country	Survey	Year	Reference publication (if any)
European	France	Cross-sectional study	2015–2018	Daabek N, Bailly S, Foote A, Warin P, Tamisier R, Revil H et al. Why people forgo healthcare in France: a national survey of 164 092 individuals to inform healthcare policy-makers. Int J Health Policy Manag. 2022;11(12):2972–81. doi:10.34172/ijhpm.2022.6310.
European	France	Health and Disability Survey	2008/2009	Maille G, Saliba-Serre B, Ferrandez AM, Ruquet M. Use of care and the oral health status of people aged 60 years and older in France: results from the National Health and Disability Survey. Clin Interv Aging. 2017;12:1159–66 (https://doi.org/10.2147/CIA.S135542).
European	Germany	Cross-sectional Survey	October–December 2018	Achstetter K, Blümel M, Köppen J, Hengel P, Busse R. Assessment of health system performance in Germany: survey-based insights into the perspective of people with private health insurance. Int J Health Plann Manage. 2022;37(6):3103–25 (https://doi.org/10.1002/hpm.3541).
European	Hungary	Patient Experiences in Healthcare Survey (PEHS)	2019	Lucevic A, Péntek M, Kringos D, Klazinga N, Gulácsi L, Brito Fernandes Ó et al. Unmet medical needs in ambulatory care in Hungary: forgone visits and medications from a representative population survey. Eur J Health Econ. 2019;20(Suppl 1):71–8 (https://doi.org/10.1007/s10198-019-01063-0).
European	Sweden	National Public Health Survey	2012	Lindström C, Rosvall M, Lindström M. Differences in unmet healthcare needs between public and private primary care providers: a population-based study. Scand J Public Health. 2018;46(4):488-94 (https://doi.org/10.1177/1403494818762983).
European	Switzerland	Population-based survey	2007–2012	Guessous I, Gaspoz JM, Theler JM, Wolff H. High prevalence of forgoing healthcare for economic reasons in Switzerland: a population-based study in a region with universal health insurance coverage. Prev Med. 2012;55(5):521–7 (https://doi.org/10.1016/j.ypmed.2012.08.005). Guessous I, Theler JM, Izart CD, Stringhini S, Bodenmann P, Gaspoz JM et al. Forgoing dental care for economic reasons in Switzerland: a six-year cross-sectional population-based study. BMC Oral Health. 2014;14:121 (https://doi.org/10.1186/1472-6831-14-121).
European	Türkiye	Turkish Health Survey (THS)	2016	Başar D, Dikmen FH, Öztürk S. The prevalence and determinants of unmet health care needs in Turkey. Health Policy. 2021;125(6):786–92 (https://doi.org/10.1016/j.healthpol.2021.04.006).

WHO region(s) represented	Multiple/ single country	Survey	Year	Reference publication (if any)
Eastern Mediterranean	Tunisia	Tunisian Health Examination Survey (THES)	2016/2017	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
Western Pacific	Australia	Patient Experience Study (PEx)	2022/2023	
Western Pacific	Australia	National Aboriginal and Torres Strait Islander Health Survey	2018/2019, 2022/2023	
Western Pacific	Australia	Survey of Disability, Ageing and Carers (SDAC)	2018/2019. 2022/2023	
Western Pacific	Australia	Ten to Men – Wave 2, Wave 3 and Wave 4	2015/2016, 2020, 2022	
Western Pacific	China	National Health Service Survey (NHSS) (mainland plus Tibet)	2013, 2018	Zhuoga C, Cuomu Z, Li S, Dou L, Li C, Dawa Z. Income-related equity in inpatient care utilization and unmet needs between 2013 and 2018 in Tibet, China. Int J Equity Health. 2023;22:85 (https://doi.org/10.1186/s12939-023-01889-4). Zhou S, Huang T, Li A, Wang Z. Does universal health insurance coverage reduce unmet healthcare needs in China? Evidence from the National Health Service Survey. Int J Equity Health. 2021;20(1):43 (https://doi.org/10.1186/s12939-021-01385-7).
Western Pacific	China	Chinese Family Panel Studies (CFPS)	2012–2020	Chen C, Xu RH, Wong EL, Wang D. The association between healthcare needs, socioeconomic status, and life satisfaction from a Chinese rural population cohort, 2012–2018. Sci Rep. 2022;12:14129 (https://doi.org/10.1038/s41598-022-18596-9).
Western Pacific	China	Chinese Longitudinal Healthy Longevity Survey (CLHLS)	1998–2018	Huang J, Choi EPH, Chau PH. The impact of unmet needs for assistance with activities of daily living on the self-rated health and life satisfaction of Chinese community-dwelling older adults. Aging Ment Health. 2023;27(4):803–10 (https://doi.org/10.1080/13607863.2022.2045563).
Western Pacific	China	National Internal Migrant Population Dynamic Monitoring Survey	2014	Wang Y, Jing Z, Ding L, Tang X, Feng Y, Li J et al. Socioeconomic inequity in inpatient service utilization based on need among internal migrants: evidence from 2014 national cross-sectional survey in China. BMC Health Serv Res. 2020;20:984 (https://doi.org/10.1186/s12913-020-05843-w).

WHO region(s) represented	Multiple/ single country	Survey	Year	Reference publication (if any)
Western Pacific	China	China Health and Retirement Longitudinal Survey (CHARLS)	2011, 2013, 2015	
Western Pacific	Japan	Japan Gerontological Evaluation Study (JAGES)	2010/2011	
Western Pacific	Japan	Japan Household Panel Survey (JHPS) and (Keio Household Panel Survey (KHPS)	2004–2020	Okamoto S, Sata M, Rosenberg M, et al. Universal health coverage in the context of population ageing: catastrophic health expenditure and unmet need for healthcare. Health Econ Rev 2023;14:8 (https://doi.org/10.1186/s13561-023-00475-2).
Western Pacific	Malaysia	Japan Gerontological Evaluation Study (JAGES) in Malaysia	2018–2020	Shah SA, Safian N, Ahmad S, Nurumal SR, Mohammad Z, Mansor J et al. Unmet healthcare needs among elderly Malaysians. J Multidiscip Health. 2021;14:2931–40 (https://doi.org/10.2147/JMDH.S326209).
Western Pacific	Malaysia	Malaysia Ageing and Retirement Survey (MARS) – Wave 1 and Wave 2	2018, 2022	
Western Pacific	New Zealand	New Zealand Health Survey (NZHS)	2021/2022, 2022/2023	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
Western Pacific	Republic of Korea	Korea Health Panel Survey (KHPS)	2014–2017, 2018	Chung W. Changes in barriers that cause unmet healthcare needs in the life cycle of adulthood and their policy implications: a need-selection model analysis of the Korea Health Panel Survey data. Healthcare (Basel). 2022;10(11):2243 (https://doi.org/10.3390/healthcare10112243).
Western Pacific	Republic of Korea	Korean National Health and Nutrition Survey (KNHANES) Dental	2016/2017, 2019/2020	Jang JH, Kim JL, Kim JH. Associations between dental checkups and unmet dental care needs: an examination of cross-sectional data from the Seventh Korea National Health and Nutrition Examination Survey (2016-2018). Int J Environ Res Public Health. 2021;18(7):3750 (https://doi.org/10.3390/ijerph18073750).
Western Pacific	Republic of Korea	Korean National Health and Nutrition Survey (KNHANES) Health	2013–2015, 2019–2021	Roh HL, Kim SD. Unmet healthcare needs among the elderly Korean population: before and during the COVID-19 pandemic. Systems. 2023;11(9):437 (https://doi.org/10.3390/systems11090437).

WHO region(s) represented	Multiple/ single country	Survey	Year	Reference publication (if any)
Western Pacific	Republic of Korea	National Survey of Older Koreans (NSOP)	2017, 2020	Jang HY, Ko Y, Han SY. The effects of social networks of the older adults with limited instrumental activities of daily living on unmet medical needs. Int J Environ Res Public Health. 2020;18(1):27 (https://doi.org/10.3390/ijerph18010027).
Western Pacific	Republic of Korea	Korea Community Health Survey (KCHS)	2018	Choi JA, Kim O. Factors influencing unmet healthcare needs among older Korean women. Int. J. Environ. Res. Public Health. 2021;18(13):6862 (https://doi.org/10.3390/ijerph18136862).
Western Pacific	Republic of Korea	Koreans' Happiness Survey (KHS)	2020	Hwang J, Kim WH, Heo J. An association between individual's risk perceptions and delayed or foregone healthcare services during the COVID-19 pandemic in Korea. BMC Health Serv Res. 2023;23(1):850. (https://doi.org/10.1186/s12913-023-09807-8).
Western Pacific	Philippines	Longitudinal Study of Ageing and Health in the Philippines (LSAHP) – Wave 1 and Wave 2	2018, 2023	
Western Pacific	Viet Nam	Vietnam National Aging Survey (VNAS)	2011, 2022	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
Western Pacific	Viet Nam	Survey on Older Persons and Social Health Insurance (OP&SHI)	2019	

Annex 4.
Survey questions on self-reported forgone health care: core questions

Summary of 135 questions

Questions	Recall period	Overall / Inpatient / Outpatient / Both
(i) reported having sought health care in the last two weeks preceding the survey but were unable to obtain services on the first attempt	0.5 month	Overall
Did [NAME] consult a health provider for this illness/ injury last 2 weeks for MAIN illness?	0.5 month	Outpatient
Did [NAME] consult a health service provider on this sickness/injury in the last 4 weeks?	1 month	Outpatient
Did [NAME] consult a health service, a healer or a faith healer during the last 4 weeks for this health problem?	1 month	Outpatient
Did [NAME] have any problems during the most recent visit to the health care provider in the last thirty days?	1 month	Outpatient
Did [NAME] visit a health care provider in the last thirty days? (Do not include overnight hospitalization or traditional/ local healer)	1 month	Outpatient
Did [NAME] visit/ consult a health provider (hospital/ health center/ clinic/ dispensary/ pharmacy/ chemist/ shop/ Traditional Birth Attendant (TBA) & Traditional Healers, religious/ cultural healers)?	open-ended	Overall
Did not fill/collect a prescription for medicine or you skipped doses of your medicine because of the cost?	open-ended	Outpatient
Did not visit a dentist when you needed to because of the cost?	open-ended	Outpatient
Did you [he/ she] consult anyone or visit any health facility for this illness/ injury?	open-ended	Outpatient
Did you ever hesitate to visit health facilities even when you were ill/sick in the past 12 months?	12 months	Outpatient
Did you experience any situation within the past 12 months in which you did not seek health care because of distance or problems with transportation?	12 months	Overall
Did you experience any situation within the past 12 months in which you did not seek health care because of waiting time?	12 months	Overall
Did you feel an unmet need for a public health facility when you suffered/were suffering from any disease and did not access a public health facility? What were the main reasons?	open-ended	Outpatient
Did you have those tests done?	12 months	Outpatient
Did you need any health care in the past 12 months but failed to receive it? Any respondent who experienced unmet need was asked to recount the most important reason.	12 months	Overall
Did you receive any professional treatment for these illnesses or injuries over the past 12 months?	12 months	Outpatient

Questions	Recall period	Overall / Inpatient / Outpatient / Both
Did you receive any professional treatment for these illnesses or injuries?	12 months	Overall
Did you seek treatment from any private or public health facility when you suffered from any disease 15 days prior to the date of survey?	0.5 month	Outpatient
Did you visit any health care facility in the past 365 days? The answers of older adults who suffered from unmet health care needs were coded as “yes” or “no”.	12 months	Overall
During the [last 12 months/last year], was there ever a time [you/(name)/(child’s name)] needed to go to [a health professional, a nurse, any other health worker, (sister, Aboriginal and Torres Strait Islander)], but didn’t?	12 months	Outpatient
During the [last 12 months/last year], was there ever a time when [you / (name)] needed to go to hospital but didn’t?	12 months	Overall
During the last 12 months / In the last year], was there ever a time when [you / (name)] needed to go to a dentist but didn’t?	12 months	Outpatient
During the last 12 months was there ever a time [you/(name)/(child’s name)] needed to go to a GP [(/or a doctor at the clinic)] but didn’t?	12 months	Outpatient
During the last 12 months, did you receive any medical care or treatment from a dentist or other oral health specialist for this problem with your mouth and/or teeth?	12 months	Outpatient
During the last 12 months, had he or she felt unwell and needed health care but did not receive it? If the participant experienced unmet health care need, they were further asked about the reason(s) for it.	12 months	Overall
During the last 12 months, have you ever needed health care but not received it? If you did not receive it, then please tell the reasons.	12 months	Overall
During the last 12 months, was there any time when you, personally, really needed a medical examination or treatment for a health problem (that is, outpatient, inpatient or dental health services), but you did not receive it?	12 months	Outpatient
During the last 2 weeks, has (NAME) visited any health facility?	0.5 month	Overall
During the last twelve months, have you seen a dentist or a dental hygienist?	12 months	Outpatient
During the last year, did you ever have oral health problems that needed treatment, but you did not visit an oral care department (unmet need)?	12 months	Outpatient
During the last year, were you ever sick and in need of inpatient department services, but you were not hospitalized (unmet need)?	12 months	Inpatient
During the last year, were you ever sick and in need of treatment at an outpatient department, but you did not visit a hospital (unmet need)?	12 months	Outpatient
During the past 12 months, have you felt you needed health care but did not receive it?	12 months	Overall
During the past 12 months, have you had to forgo medical, surgical, or dental care even though you really needed it?	12 months	Outpatient
During the past 12 months, that is since (date one year ago), have you been admitted to hospital as a day patient, that is admitted to a hospital bed, but not required to remain overnight?	12 months	Outpatient

Questions	Recall period	Overall / Inpatient / Outpatient / Both
During the past 12 months, that is since (date one year ago), have you been in hospital as an inpatient, that is overnight or longer?	12 months	Inpatient
During the past 12 months, was there any time when you had a disease/illness or a disability but did not receive health care?	12 months	Outpatient
During the past 12 months, was there any time when you really needed to be hospitalised following a recommendation from a doctor, either as an inpatient or a day patient, but did not?	12 months	Inpatient
During the past year, did the doctor refer you to hospitalization services but you did not seek them?	12 months	Inpatient
During the past year, did you have inpatient visits because of disease, injury, or physical examination?	12 months	Inpatient
During the past year, did you receive treatment, such as an outpatient or inpatient service?	12 months	Overall
During the previous 12 months, have you forgone any health care for economic reasons?	12 months	Overall
For any of the health problems you have had in the last 30 days, have you consulted or sought help?	1 month	Outpatient
In the last 12 months, have you felt any common unmet health problems?	12 months	Overall
FORGO ANY TYPES OF CARE BECAUSE OF COSTS. Please look at card 17. During the last twelve months, did you forgo any types of care because of the costs you would have to pay?	12 months	Overall
During the last 12 months, were there any times that you were sick or injured that prevented you from performing your usual activities?	12 months	Outpatient
FORGO CARE BECAUSE OF UNAVAILABLITY. Please look at card 19. During the last twelve months, which of the following types of care did you forgo because they were not available or not easily accessible, if any?	12 months	Outpatient
Get adequate medical service at present	present	Overall
Had a medical problem but did not consult with/visit a doctor because of the cost	open-ended	Outpatient
Had she/ he had surgical unmet needs in the last 12 months?	12 months	Inpatient
Has [NAME] consulted a health service (including a pharmacy) or a traditional healer in the last 30 days due to his health problem?	1 month	Outpatient
Have you during the past 3 months considered yourself to be in need of health care by a physician, but not sought such care?	3 months	Outpatient
Have you ever experienced not receiving the necessary medical treatment or examination (excluding dental care) in the past year (12 months)?	12 months	Outpatient
Have you experienced a delay in getting health care in the past 12 months because the time needed to obtain an appointment was too long?	12 months	Outpatient
Have you experienced a delay in getting health care in the past 12 months due to distance or transport?	12 months	Outpatient

Questions	Recall period	Overall / Inpatient / Outpatient / Both
Have you felt that you needed medical care from a doctor or other health care professional but could not receive medical care over the last 1 year?	12 months	Outpatient
Have you forgone or put-off health care on one or more occasions in the last 12 months?	12 months	Overall
Have you received any health care in the last 12 months? (both long and short survey)	12 months	Overall
Have you received any medication or treatment from a dentist or any other oral health specialist during the last two weeks or 12 months? "Yes" were classified as having no unmet need and "no" were classified as having unmet need.	12 months	Outpatient
Have you visited doctors?	open-ended	Outpatient
How many times did you see a GP in the past 12 months? This may have been about your physical health, or your mental or emotional health.	12 months	Outpatient
How often in the last year (12 months) did you see a doctor/nurse for your high blood sugar or sugar diabetes?	12 months	Outpatient
How often have you seen or talked to medical doctor in last 12 months?	12 months	Overall
If "yes, I would have need it, but I couldn't use one or more of them", participants were asked for the most important reason for this. This follows a question on whether health care was needed.	open-ended	Overall
If "yes", i.e. indicating an unmet need, they were asked to select all the applicable reasons. This follows a question on whether health care was needed but not received.	open-ended	Overall
If yes, did you receive it? If not received what are the reasons? This follows a question on whether health care was needed.	open-ended	Overall
If yes: "Where did you go for care for this illness or accident?" This follows a question on whether health care was needed.	open-ended	Overall
During the last twelve months, have you been in a hospital overnight? Please consider stays in medical, surgical, psychiatric or in any other specialized wards.	12 months	Inpatient
In last year, have you ever thought you needed dental care (examination or treatment) but did not receive treatment?	12 months	Outpatient
In the last 12 months [...], were you ever unable to get a medical consultation or the treatment you needed for any of the reasons listed on this card?	12 months	Outpatient
In the last 12 months was there a time when you needed health care from a doctor/in a clinic, but did not get care? - Outpatient	12 months	Outpatient
In the last 12 months, did you go for any of the following medical check-ups: general health screening, cholesterol check, mammogram, pap smear, colonoscopy, prostate or bone density test?	12 months	Outpatient
In the last 12 months, did you not seek health care because you could not afford it? (both long and short survey)	12 months	Overall
In the last 12 months, did you seek any health care or did you need any treatment for a medical condition and you experienced difficulties accessing it? If people experienced difficulties, they were asked about the reasons.	12 months	Outpatient

Questions	Recall period	Overall / Inpatient / Outpatient / Both
In the last 12 months, has there been a time when you needed to stay overnight in a health care facility but did not get that care? - Inpatient care	12 months	Inpatient
In the last 12 months, have you avoided going to a dental health care worker because of the cost?	12 months	Outpatient
In the last 12 months, how often have you or your family gone without medicine or medical treatment that you needed?	12 months	Outpatient
In the last 12 months, were there times when [you / (name)] had prescriptions that [you / he / she] didn't get filled (made up for [you / him / her])?	12 months	Outpatient
In the last 12 months, were you ever refused health care because you could not afford it? (Only in long survey)	12 months	Overall
In the last 12 months, were you ever unable to get a medical consultation or the treatment you needed for any of the reasons listed on this card?	12 months	Outpatient
In the last 15 days, did you demand any treatment or you needed any medical advice and you did not receive it? Who could not access care, were asked the reasons.	0.5 month	Outpatient
In the last five years, was there at least one instance when you had a serious health problem but you did not go to the doctor?	60 months	Outpatient
In the last month, have you visited a public hospital, private hospital, public health centre, clinic, or health worker's or doctor's practice, or been visited by a health worker or doctor for outpatient care?	1 month	Outpatient
In the last twelve months, to help you keep your living costs down, have you postponed visits to the dentist?	12 months	Outpatient
In the last two years, have you needed medical attention that you could not get?	12 months	Outpatient
In the last year - didn't make the consultation even if needed	12 months	Outpatient
In the last year, have you been cared for by a dentist?	12 months	Outpatient
In the past 12 months, did it happen that you needed a medical examination or treatment but could not afford it financially?	12 months	Outpatient
In the past 12 months, did you ever feel that you needed professional help for your emotions, stress, mental health, or substance use, but you didn't receive that help? This could have been because of personal reasons (for example, it cost too much) or reasons you couldn't control (for example, no appointments available).	12 months	Outpatient
In the past 12 months, did you go for any of the following medical check-ups?	12 months	Outpatient
In the past 12 months, have you consulted any health care provider?	12 months	Outpatient
In the past 12 months, was there a time when you got a prescription for yourself but did not collect one or more prescription items from the pharmacy or chemist because of cost?	12 months	Outpatient
In the past 12 months, was there a time when you had a medical problem but did not visit a GP because of cost?	12 months	Outpatient
In the past 12 months, was there a time when you had a medical problem but did not visit a GP for any of the following reasons?	12 months	Outpatient

Questions	Recall period	Overall / Inpatient / Outpatient / Both
In the past 3 months have you had any serious accidents or illness for which you did not consult any health worker?	3 months	Outpatient
In the past five years, was there a time when a doctor referred you to a specialist but you did not go for any of the following reasons?	60 months	Outpatient
In the past twelve months, was there a time when you had a health problem and needed medical attention, but you did not get health care from a provider?	12 months	Outpatient
In the past year, did a doctor suggest that you needed inpatient care but you were not hospitalized?	12 months	Inpatient
In the past year, did a doctor suggest that you needed inpatient care, but you were not/ did not get hospitalised?	12 months	Inpatient
In the past year, have you ever had a need to visit a clinic or a hospital for treatment or examination, but not received appropriate care (except dental services)?	12 months	Outpatient
In the past year, have you required dental treatment but been unable to receive it?	12 months	Outpatient
In the past year, have you thought that you needed treatment, but you did not receive treatment at a hospital?	12 months	Outpatient
Last 2 years: Did [respondent] have a serious health problem but did not seek a doctor?	24 months	Outpatient
Over the last 4 weeks, has "..." consulted anyone in the medical profession, paramedical or a healer or visited a medical establishment?	1 month	Outpatient
Participants were asked if, during the past 12 months, they had: (i) forgone a medical visit or follow-up appointment due to costs; (ii) forgone a medical test, treatment or other follow-up due to costs.	12 months	Outpatient
Participants who had received health care for mental health problems in the past 12 months were asked if they thought the received care was sufficient.	12 months	Outpatient
Since last year, has there been any time you needed to go to a GP but didn't?	12 months	Outpatient
Since last year, has there been any time you needed to go to a medical specialist but didn't?	12 months	Outpatient
Skipped a medical test, treatment or follow-up that was recommended by a doctor because of the cost?	open-ended	Outpatient
The last time you [your child] needed health care, did you get health care?	open-ended	Overall
The last time you needed health care, did you get health care?	open-ended	Overall
The unmet need for inpatient service referred to the proportion of migrants who were asked to be hospitalized by a doctor but did not utilize it [get hospitalized]. (15-59y)	open-ended	Inpatient
Thinking about the most recent time when you felt you needed professional help but didn't receive it, why was that?	open-ended	Overall
Was anyone consulted (e.g a doctor, nurse, pharmacist or traditional healer) for the major illness or injury [NAME] suffered during the last 30 days?	1 month	Outpatient
Was there a time in the past 12 months when you needed medication but could not afford it because of costs?	12 months	Outpatient

Questions	Recall period	Overall / Inpatient / Outpatient / Both
Was there a time in the past 12 months when you needed to see a doctor but could not because of cost? Any type of doctor or qualified nurse, emergency room or outpatient clinic visits included.	12 months	Outpatient
Was there a time in the past 12 months when you needed to see a doctor but could not because you had to wait too long? Any type of doctor or qualified nurse, emergency room or outpatient clinic visits included.	12 months	Outpatient
Was there any time during the last 12 months when you personally, really needed a medical examination or treatment for a health problem but you did not receive it? Yes/ No. What was the main reason?	12 months	Outpatient
Was there any time during the last 12 months when, in your opinion, you really needed a medical examination or treatment for a health problem but you did not receive it?	12 months	Outpatient
Was there any time during the past 12 months that you should have visited a doctor, but did not?	12 months	Outpatient
Was there any time during the past 12 months when you really needed to consult a specialist but did not?	12 months	Outpatient
Was there any time in the past 12 months when you needed health care, but could not afford it?	12 months	Overall
Were there any life-threatening illnesses that occurred during the year before leaving [the country] and you were not able to access health care? Also asked whether the person received appropriate health care.	12 months	Outpatient
Were there any times in the last 12 months you tried to get an appt with this GP and couldn't?	12 months	Outpatient
Were you immediately taken care of on the first time you sought care in this health service in the PAST 2 WEEKS?	0.5 month	Outpatient
Were you or the member of your household able to access the medical treatment?	open-ended	Overall
What were the reasons you decided against going to a hospital?	open-ended	Inpatient
When did you last consult someone about your health? Example: Hospitals, clinics, traditional healers, nurses, or pharmacists.	open-ended	Overall
Whether he/she sought any type of medical treatment for their health problems in the last 12 months ("yes"/ "no")? Respondents, who replied "no", were then asked the main reason for not seeking medical care.	12 months	Outpatient
Whether treatment taken on medical advice?	open-ended	Overall
Whom did [NAME] consult for this illness or injury in the last 4 weeks?	1 month	Outpatient
Whom did [NAME] consult regarding the most severe illness/injury specified in [Q6]?	1 month	Overall
Why did [NAME] not consult anyone regarding the most severe illness/injury specified in [Q6]?	1 month	Overall
Within the past 12 months, have you felt ill, and thought about going to see a doctor, but didn't?	12 months	Outpatient

Sample questions mapped to surveys

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Australia Patient Experience Study (PEx)	GPS_Q06. Were there any times in the last 12 months you tried to get an appt with this GP and couldn't?	Yes/No	Outpatient	Physician	
	GPS_Q07. Since last year, has there been any time you needed to go to a GP but didn't?	Yes/No	Outpatient	Physician	
Brazilian National Health Surveys (BNHS) *[Survey question does not ask directly whether respondents had a health care need or not: derived from the second question asking respondents the reason for not seeking care* *Questions were worded somewhat differently in the two versions of the survey (2013 versus 2019)]*	(i) Reported having sought health care in the last two weeks preceding the survey but were unable to obtain services on the first attempt		Overall	Overall health	
	(ii) Those who did not seek health care when it was needed				
Brazilian Longitudinal Study of Aging (ELSI-Brazil)	u32: Have you looked for a health service to get an appointment related to your health, in the PAST 2 WEEKS	Yes/No	Outpatient	Physician	Lima-Costa MF, de Andrade FB, de Souza PRB Jr, Neri AL, Duarte YAO, Castro-Costa E et al. The Brazilian Longitudinal Study of Aging (ELSI-Brazil): objectives and design. Am J Epidemiol. 2018;187(7):1345–53 (https://doi.org/10.1093/aje/kwx387). Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
	u34: Were you immediately taken care of on the first time you sought care in this health service in the PAST 2 WEEKS?				
	u35: What was the reason for not being taken care of on the first time you sought care in this health service in the PAST 2 WEEKS?				

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Brazilian Longitudinal Study of Aging (ELSI-Brazil)	u36: In this latest appointment, within the PAST 2 WEEKS, were you prescribed any medication? u37: Were you able to get all the medication that was prescribed to you on your latest appointment within the PAST 2 WEEKS? u38: Why didn't you get all the medication that was prescribed to you on your latest appointment within the PAST 2 WEEKS? t6: In the PAST 30 DAYS, due to financial issues, you:	(1) Had no financial issues to buy the medication(s) (2) Did not take a medication that was prescribed by a doctor or a dentist (3) Decreased the number of pills of the medication(s) that were prescribed by the doctor (4) Decreased the dose of the medication, breaking the pills or taking less fewer drops (5) Didn't use medication(s) (9) Didn't know/didn't answer	Outpatient	Medication need	Lima-Costa MF, de Andrade FB, de Souza PRB Jr, Neri AL, Duarte YAO, Castro-Costa E et al. The Brazilian Longitudinal Study of Aging (ELSI-Brazil): objectives and design. Am J Epidemiol. 2018;187(7):1345–53 (https://doi.org/10.1093/aje/kwx387). Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
China Health and Retirement Longitudinal Survey (CHARLS)	In the past year, did a doctor suggest that you needed inpatient care, but you were not/did not get hospitalized?	Yes/No	Inpatient	Hospitali-zation	
China National Health Service Survey (NHSS)	In the past year, did a doctor suggest that you needed inpatient care but you were not hospitalized?	Yes/No	Inpatient	Hospitali-zation	Zhuoga C, Cuomu Z, Li S, Dou L, Li C, Dawa Z. Income-related equity in inpatient care utilization and unmet needs between 2013 and 2018 in Tibet, China. Int J Equity Health. 2023;22:85 (https://doi.org/10.1186/s12939-023-01889-4). Zhou S, Huang T, Li A, Wang Z. Does universal health insurance coverage reduce unmet healthcare needs in China? Evidence from the National Health Service Survey. Int J Equity Health. 2021;20(1):43 (https://doi.org/10.1186/s12939-021-01385-7).
Chinese Longitudinal Healthy Longevity Survey (CLHLS)	Get adequate medical service at present?	Yes/No/Not sick recently	Overall	Overall health	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Commonwealth Fund International Health Policy Survey	qn810. During the past 12 months, was there a time when you: qn810_a1. Did not fill/collect a prescription for medicine, or you skipped doses of your medicine because of the cost qn810_a2. Had a medical problem but did not consult with/visit a doctor because of the cost qn810_a3. Skipped a medical test, treatment or follow-up that was recommended by a doctor because of the cost qn810_a4. Did not visit a dentist when you needed to because of the cost	Yes/No	Multiple	Physician, medication, tests, dental care	
EU Statistics on Income and Living Conditions (EU-SILC) survey	Was there any time during the last 12 months when you, personally, really needed a medical examination or treatment for a health problem but you did not receive it?	Yes/No	Outpatient	Medical examination or treatment	Connolly S, Wren MA. Unmet healthcare needs in Ireland: analysis using the EU-SILC survey. Health Policy. 2017;121(4):434–41 (https://doi.org/10.1016/j.healthpol.2017.02.009).
	Was there any time during the past 12 months that you should have visited a doctor, but did not?	Yes/No	Outpatient	Physician	Popovic N, Terzic-Supic Z, Simic S, Mladenovic B. Predictors of unmet health care needs in Serbia: analysis based on EU-SILC data. PLoS One. 2017;12(11):e0187866 (https://doi.org/10.1371/journal.pone.0187866).
European Health Interview Survey (EHIS)	HC14 Was there any time during the past 12 months when you really needed to consult a specialist but did not?	1. Yes, there was at least one occasion 2. No, there was no occasion	Outpatient	Specialist consultation	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
European Health Interview Survey (EHIS)	HC06 During the past 12 months, was there any time when you really needed to be hospitalised following a recommendation from a doctor, either as an inpatient or a day patient, but did not?	1. Yes, there was at least one occasion 2. No, there was no occasion	Inpatient	Hospitalization	
European Social Survey (ESS)	In the last 12 months, were you ever unable to get a medical consultation or the treatment you needed for any of the reasons listed on this card?	Yes/No/don't know	Outpatient	Medical consultation or treatment	Fjær EL, Stornes P, Borisova LV, McNamara CL, Eikemo TA. Subjective perceptions of unmet need for health care in Europe among social groups: findings from the European social survey (2014) special module on the social determinants of health. Eur J Public Health. 2017;27(suppl_1):82–9 (https://doi.org/10.1093/eurpub/ckw219). Schmidt AE, Rodrigues R, Simmons C, Steiber N. A crisis like no other? Unmet needs in healthcare during the first wave of the COVID-19 crisis in Austria. Eur J Public Health. 2022;32(6):969–75 (https://doi.org/10.1093/eurpub/ckac136).
	Reason for unmet needs was categorized as …	Availability (waiting list too long, no appointments available, or treatment needed was not available nearby); affordability (if they could not pay for services); acceptability (if unable to get a medical consultation because they could not take time off work, or had other commitments)			
Gambia Integrated Household Survey (GIHS)	For the last two weeks, has [NAME] been sick/injured? Did you [he/she] consult anyone or visit any health facility for this illness/ injury?	Yes/No	Outpatient	Illness or injury	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Ghana Living Standards Survey (GLSS)	SECTION 3(QTN 1). During the last 2 weeks, has [NAME] suffered from either illness or injury? SECTION 3(QTN 6). During the last 2 weeks, did [NAME] have to stop the usual activities because of this condition? SECTION 3(QTN 8). During the last 2 weeks, has [NAME] visited any health facility?	Yes/No	Outpatient	Illness or injury	
Harmonized Survey on Household Living Conditions, Panel Survey	(3,01). Has [NAME] had any health problems, illnesses, or accidents in the last 30 days that did not result in hospitalization?	Yes/No	Outpatient	Illness or acci-dent-rela-ted need	
Health and Aging in Africa: Longitudinal Studies in South Africa (HAALSI)	HU207. In the past 3 months have you had any serious accidents or illness for which you did not consult any health worker?	Yes/No	Outpatient	Illness or acci-dent-rela-ted need	
Health and Disability Survey	During the past 12 months, have you had to forgo medical, surgical, or dental care even though you really needed it?	1. Yes, several times 2. Yes, once 3. No, never	Outpatient	Medical, surgical need	Maille G, Saliba-Serre B, Ferrandez AM, Ruquet M. Use of care and the oral health status of people aged 60 years and older in France: results from the National Health and Disability Survey. Clin Interv Aging. 2017 Jul 31;12:1159–66 (https://doi.org/10.2147/CIA.S135542).

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Health and Welfare Survey (HWS)	During the last 12 months, have you ever needed health care but not received it? If you did not receive it, then please state the reasons.	Yes/No	Overall	Overall health	Meemon N, Paek SC. Factors associated with unmet need for healthcare among older adults in Thailand. APSSR. 2019;19(2):14 (https://doi.org/10.59588/2350-8329.1230). Suphanchaimat R, Sinam P, Phaiyarom M, Pudpong N, Julchoo S, Kunpeuk S et al. A cross sectional study of unmet need for health services amongst urban refugees and asylum seekers in Thailand in comparison with Thai population, 2019. Int J Equity Health. 2020;19:205 (https://doi.org/10.1186/s12939-020-01316-y). Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
	During the last year, were you ever sick and in need of treatment at an outpatient department, but you did not visit a hospital (unmet need)?	Yes/No	Outpatient	Treatment need	Chongthawonsatid S. Identification of unmet healthcare needs: a national survey in Thailand. J Prev Med Public Health. 2021;54(2):129–36 (https://doi.org/10.3961/jpmph.20.318).
	During the last year, did you ever have oral care problems that needed treatment, but you did not visit an oral care department (unmet need)?	Yes/No	Outpatient	Dental care	
	During the last 12 months, was there any time when you personally, really needed a medical examination or treatment for a health problem (as an outpatient, inpatient or dental health services), but you did not receive it?	Yes/No	Outpatient	Medical examination or treatment need	Vongmongkol V, Viriyathorn S, Wanwong Y, Wangbanjongkun W, Tangcharoensathien V. Annual prevalence of unmet healthcare need in Thailand: evidence from national household surveys between 2011 and 2019. Int J Equity Health. 2021;20(1):244 (https://doi.org/10.1186/s12939-021-01578-0).

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Health and Welfare Survey (HWS)	During the last year, were you ever sick and in need of inpatient department services, but you were not hospitalized (unmet need)?	Yes/No	Inpatient	Hospitalization need	
Integrated Household Budget Survey (IHBS)	E07. Did [NAME] consult a health service provider on this sickness/injury in the last 4 weeks?	Yes/No	Outpatient	Sickness or injury-related need	
Integrated Household Survey	Were you [Was NAME] sick or injured in the past 4 weeks? Did you [he/she] consult anyone or visit any health facility for this illness/ injury?	Yes/No	Outpatient	Injury related need	
Integrated Household Survey (IHS) and Integrated Household Panel Survey (IHPS) Wave 5	D07 What action did you take to find relief for your illness?	1. Did nothing, not serious 2. Did nothing, no money 3. Used medicine had in stock 4. Personally known remedies 5. Sought treatment at government health facility 6. Sought treatment at church/mission facility 7. Sought treatment at private health facility 8. Sought treatment at village health clinic/with health surveillance assistant 9. Went to local pharmacy 10. Went to local grocery for medicine 11. Sought treatment with traditional healer 12. Sought treatment with faith healer 13. Other (specify)	Outpatient	Illness-related need	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Japan Gerontological Evaluation Study (JAGES)	During the past 12 months, was there any time when you had a disease/illness or a disability but did not receive health care?	Yes/No	Outpatient	Illness or disability need	
Japan Gerontological Evaluation Study (JAGES) in Malaysia	Did you ever hesitate to visit health facilities even when you were ill/sick in the past 12 months?	Yes/No	Outpatient	Illness-related need	
Japan Household Panel Survey (JHPS/KHPS)	During the past year, did you receive treatment, such as an outpatient or inpatient service?	1. Did nothing as healthy 2. Did nothing despite having symptoms 3. Went to a hospital or clinic 4. Hospitalised 5. Purchased a patent medicine 6. Other	Outpatient or inpatient	Medical examination or treatment need	
Korea Community Health Survey (KCHS)	During the past year, have you ever been unable to go to a hospital or clinic (not including dentistry) when you wanted to go to there?	Yes/No	Outpatient	Medical examination need	Choi JA, Kim O. Factors influencing unmet healthcare needs among older Korean women. Int. J. Environ. Res. Public Health. 2021;18(13):6862 (https://doi.org/10.3390/ijerph18136862).
Kenya Household Health Expenditure and Utilization Survey (KHHEUS)	Q17. If yes to Q16, did <NAME> visit/consult a health provider (hospital/health centre/clinic/dispensary/pharmacy/chemist/shop/traditional birth attendant (TBA) and traditional healers, religious/cultural healers)?	Yes/No/Don't know	Overall	Overall health	
Korea Health Panel Survey (KHPS)	In the past year, have you ever had a need to visit a clinic or a hospital for treatment or examination, but not received appropriate care (except dental services)?	Yes/No	Outpatient	Medical examination or treatment need	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Korea Health Panel Survey (KHPS)	Have you ever experienced not receiving the necessary medical treatment or examination (excluding dental care) in the past year (12 months)?	1. Yes, I have experienced it at least once 2. No, I have not experienced it 3. No medical treatment or examination of any kind was needed	Outpatient	Medical examination or treatment need	
Koreans' Happiness Survey (KHS)	Did you feel the need to receive a medical examination or treatment at hospitals, clinics, or public health centres for purposes other than diagnosis and treatment of COVID-19 after the outbreak of COVID-19 (since February 2020)?	Yes/No			Hwang J, Kim WH, Heo J. An association between individual's risk perceptions and delayed or foregone healthcare services during the COVID-19 pandemic in Korea. BMC Health Serv Res. 2023;23(1):850. (https://doi.org/10.1186/s12913-023-09807-8).
	Did you receive the needed care in a timely manner?	1. Yes 2. No - received care late 3. No - gave up			
Korean National Health and Nutrition Survey (KNHANES)	In the past year, have you required dental treatment but been unable to receive it?	Yes/No	Outpatient	Dental care need	
	In last year, have you ever thought you needed dental care (examination or treatment) but did not receive treatment?	Yes/No	Outpatient	Dental care need	
	During the past 12 months, have you felt you needed health care but did not receive it?	Yes/No	Overall	Overall health	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Longitudinal Ageing Survey of India (LASI)	What was your main reason for not seeking a visit?	1. Did not get sick 2. Needed to work 3. Didn't want to give up a day's work 4. Not enough money or cost was too high 5. Treatment was unlikely to be effective 6. Illness was not serious 7. Nobody to accompany 8. No quality facilities available nearby 9. Had medicine at home 10. Family member(s) decided it wasn't required 11. No health care facility nearby 12. Other, please specify	Overall	Overall health	Das J, Kundu S, Hossain B. Rural-urban difference in meeting the need for healthcare and food among older adults: evidence from India. BMC Public Health. 2023;23(1):1231 (https://doi.org/10.1186/s12889-023-16126-4).
	What were the reasons you decided against going to a hospital?	1. Needed to work 2. Didn't want to give up a day's work 3. Not enough money or cost was too high 4. Treatment was unlikely to be effective 5. Illness was not serious 6. Nobody to accompany 7. No quality facilities available nearby 8. Had medicine at home 9. Family member(s) decided it wasn't required 10. Difficult to get to the health care provider 11. Other, please specify	Inpatient	Hospitali-zation	Das J, Kundu S, Hossain B. Rural-urban difference in meeting the need for healthcare and food among older adults: evidence from India. BMC Public Health. 2023;23(1):1231 (https://doi.org/10.1186/s12889-023-16126-4).
Longitudinal Study of Ageing and Health in the Philippines (LSAHP)	E13 Within the past 12 months, have you felt ill, and thought about going to see a doctor, but didn't?	Yes/No	Outpatient	Physician	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Mental Health Survey (MHS)	Participants who had not received health care for mental health problems in the past 12 months were asked "during the past 12 months, have you thought you might need help for psychological problems, your emotional problems, or alcohol or drug use?" If "yes", i.e. indicating an unmet need, they were asked to select all the applicable reasons	Yes/No	Outpatient	Mental	Rens E, Michielsen J, Dom G, Remmen R, Van den Broeck K. Clinically assessed and perceived unmet mental health needs, health care use and barriers to care for mental health problems in a Belgian general population sample. BMC Psychiatry. 2022;22(1):455 (https://doi.org/10.1186/s12888-022-04094-9).
Mexican Health and Aging Study (MHAS)	2001 and 2003: D15 In the last five years, was there at least one instance when you had a serious health problem, but you did not go to the doctor?	Yes/No	Outpatient	Physician	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
	2012, 2015, 2018: d15_15 Last 2 years: Did [respondent] have a serious health problem but did not seek a doctor?	Yes/No			
Multi-Country Survey Study (MCSS)	6600. In the last 12 months, were you ever refused health care because you could not afford it? (Only in long survey)	Yes/No	Overall	Overall health	
	6601. In the last 12 months, did you not seek health care because you could not afford it? (both long and short survey)	Yes/No	Overall	Overall health	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
National Aboriginal and Torres Strait Islander Health Survey	UNMET_Q01. During the [last 12 months/ last year], was there ever a time when [you / (name)] needed to go to hospital but didn't?	Yes/No	Overall	Overall health	
	DOC_Q21. During the last 12 months was there ever a time [you/(name)/ (child's name)] needed to go to a GP [(/or a doctor at the clinic)] but didn't?	Yes/No	Outpatient	Physician	
	MEDS_Q07. In the last 12 months, were there times when [you/(name)] had prescriptions that [you/he/she] didn't get filled (made up for [you/him/her])?	Yes/No	Outpatient	Medication need	
	ORAL_Q18. During the last 12 months/ In the last year], was there ever a time when [you/(name)] needed to go to a dentist but didn't?	Yes/No	Outpatient	Dental care need	
	OHP_Q11. During the [last 12 months/ last year], was there ever a time [you/ (name)/(child's name)] needed to go to [another health professional/ see a nurse, sister, Aboriginal (and Torres Strait Islander) health worker or other health worker], but didn't?	Yes/No	Outpatient	Dental care need	
National Health Service Survey (NHSS) (mainland China)	In the past year, did a doctor suggest that you needed inpatient care but you were not hospitalized?	Yes/No	Inpatient	Hospita-lization need	Zhou S, Huang T, Li A, Wang Z. Does universal health insurance coverage reduce unmet healthcare needs in China? Evidence from the National Health Service Survey. Int J Equity Health. 2021;20(1):43 (https://doi.org/10.1186/s12939-021-01385-7).

Annex 4.

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
National Health Service Survey (NHSS) (Tibet, China)	During the past year, did the doctor refer you to hospitalization services but you did not seek them?	Yes/No	Inpatient	Hospitalization need	Zhuoga C, Cuomu Z, Li S, Dou L, Li C, Dawa Z. Income-related equity in inpatient care utilization and unmet needs between 2013 and 2018 in Tibet, China. Int J Equity Health. 2023;22:85 (https://doi.org/10.1186/s12939-023-01889-4).
National Internal Migrant Population Dynamic Monitoring Survey (NIMPDMS)	The unmet need for inpatient service referred to the proportion of migrants who were asked to be hospitalized by a doctor but did not utilize it. (15–59 years)				Wang Y, Jing Z, Ding L, Tang X, Feng Y, Li J et al. Socioeconomic inequity in inpatient service utilization based on need among internal migrants: evidence from 2014 national cross-sectional survey in China. BMC Health Serv Res. 2020;20:984 (https://doi.org/10.1186/s12913-020-05843-w).
National Panel Survey	Was anyone consulted (e.g. a doctor, nurse, pharmacist, or traditional healer) for the major illness/injury [NAME] suffered during the past 30 days?	Yes/No	Outpatient	Illness or injury-related need	
National Public Health Survey	Have you during the past 3 months considered yourself to be in need of health care by a physician, but not sought such care?	Yes/No	Outpatient	Physician	Lindström C, Rosvall M, Lindström M. Differences in unmet healthcare needs between public and private primary care providers: a population-based study. Scand J Public Health. 2018;46(4):488-94 (https://doi.org/10.1177/1403494818762983).
National Survey on Household Living Conditions and Agriculture	3.05. Did [NAME] consult a health service, a healer or a faith healer during the last 4 weeks for this health problem?	Yes/No	Overall	Overall health	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
National Sample Survey (NSS) 75th round	In the last 15 days, did you demand any treatment or you needed any medical advice and you did not receive it? Who could not access care, they were asked to give the reasons for not. Q10. Whether treatment taken on medical advice? Did you seek treatment from any private or public health facility when you suffered from any disease 15 days prior to the date of survey? Did you feel an unmet need for a public health facility when you suffered/ suffering from any disease and did not access a public health facility what were the main reason?	Yes/No	Outpatient	Medical consul-tation or treatment need	Mahapatro SR, James KS, Mishra US. Intersection of class, caste, gender and unmet healthcare needs in India: implications for health policy. Health Policy Open. 2021;2:100040 (https://doi.org/10.1016/j.hpopen.2021.100040).
National Survey of Older Koreans (NSOP)	Have you felt that you needed medical care from a doctor or other health care professional but could not receive medical care over the last 1 year?	Yes/No	Outpatient	Physician	
	In the past year, have you thought that you needed treatment, but you did not receive treatment at a hospital?	Yes/No	Outpatient	Treatment need	
New Zealand Health Survey (NZHS)	A2.33a.In the past 12 months, was there a time when you had a medical problem but did not visit a GP because of cost?	Yes/No/Don't know/ Refused	Outpatient	Physician	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
New Zealand Health Survey (NZHS)	A2.35a. In the past 12 months, was there a time when you got a prescription for yourself but did not collect one or more prescription items from the pharmacy or chemist because of cost?	Yes/No/Don't know/ Refused	Outpatient	Medication need	
	A2.95a. In the last 12 months, have you avoided going to a dental health care worker because of the cost?	Yes/No/Don't know/ Refused	Outpatient	Dental care need	
	AMH1.10. In the past 12 months, did you ever feel that you needed professional help for your emotions, stress, mental health, or substance use, but you didn't receive that help? This could have been because of personal reasons (for example, it cost too much) or reasons you couldn't control (for example, no appointments available).	Yes/No/Don't know/ Refused	Outpatient	Mental care need	
Nigeria General Household Survey-Panel (GHS-Panel)	Whom did [NAME] consult for this illness or injury in the last 4 weeks?	1. Traditional healer 2. Doctor 3. Dentist 4. Nurse 5. Medical Asst 6. Midwife 7. Pharmacist 8. Chemist 9. TBA 10. Spiritualist 11. Patent medicine vendor (PMV) 12. No one 13. Other (Specify)	Outpatient	Illness or injury-related need	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Older Persons & Social Health Insurance (study)	q0604. During the last 12 months, were there any times that you were sick or injured that prevented you from performing your usual activities?	Yes/No	Outpatient	Illness-related need	
	q0606. Did you receive any professional treatment for these illnesses or injuries?	Yes/No			
Progress in Universal Health in the Americas	If yes: Where did you go for care for this illness or accident?	1. Public health facility 2. Private health clinic 3. Urgent care 4. Pharmacy or self-medication 5. At home 6. Home remedy 7. Did nothing 8. Other	Outpatient	Illness or accident-related need	
Panel Socio-Economic Survey (PSES)	Was there any time during the last 12 months when you personally, really needed a medical examination or treatment for a health problem but you did not receive it? What was the main reason?	Yes/No	Outpatient	Medical examination or treatment need	Thammatacharee N, Tisayaticom K, Suphanchaimat R, Limwattananon S, Putthasri W, Netsaengtip R et al. Prevalence and profiles of unmet healthcare need in Thailand. BMC Public Health. 2012;12:923 (https://doi.org/10.1186/1471-2458-12-923).
Patient Experiences in Healthcare Survey	Participants were asked if, during the past 12 months, they had: (i) forgone a medical visit or follow-up appointment due to costs; (ii) forgone a medical test, treatment or other follow-up due to costs; (iii) an unfilled prescription for medicine, or skipped doses due to costs; or (iv) forgone a medical visit due to difficulties in travelling	Yes/No	Outpatient	Medical examination or treatment need, unmet medication need	Lucevic A, Péntek M, Kringos D, Klazinga N, Gulácsi L, Brito Fernandes Ó et al. Unmet medical needs in ambulatory care in Hungary: forgone visits and medications from a representative population survey. Eur J Health Econ. 2019;20(Suppl 1):71–8 (https://doi.org/10.1007/s10198-019-01063-0).

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
People'S Voice Survey (PVS)	Q29. In the past twelve months, was there a time when you had a health problem and needed medical attention, but you did not get health care from a provider?	Yes/No/Refused	Outpatient	Medical attention need	
Population-Based Survey	During the previous 12 months, have you forgone any health care for economic reasons?	Yes/No	Overall	Overall health	Guessous I, Gaspoz JM, Theler JM, Wolff H. High prevalence of forgoing healthcare for economic reasons in Switzerland: a population-based study in a region with universal health insurance coverage. Prev Med. 2012;55(5):521–7 (https://doi.org/10.1016/j.ypmed.2012.08.005). Guessous I, Theler JM, Izart CD, Stringhini S, Bodenmann P, Gaspoz JM et al. Forgoing dental care for economic reasons in Switzerland: a six-year cross-sectional population-based study. BMC Oral Health. 2014;14:121 (https://doi.org/10.1186/1472-6831-14-121).
Population-based, nationally representative survey	In the last 12 months, did you seek any health care or did you need any medical condition and you experienced difficulties accessing it? If people experienced difficulties, they were asked about the reasons.	Yes/No	Overall	Overall health	Banks LM, O'Fallon T, Hameed S, Usman SK, Polack S, Kuper H. Disability and the achievement of universal health coverage in the Maldives. PLoS One. 2022;17(12):e0278292 (https://doi.org/10.1371/journal.pone.0278292).
Public Health Surveys	Have you during the past 3 months considered yourself to be in need of health care by a physician, but not sought such care?	Yes/No	Outpatient	Physician	Lindström C, Rosvall M, Lindström M. Differences in unmet healthcare needs between public and private primary care providers: a population-based study. Scand J Public Health. 2018;46(4):488-94 (https://doi.org/10.1177/1403494818762983).

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Puerto Rican Elder: Health Conditions (PREHCO)	WK48 In the last twelve months, were you ever told you should get an x-ray or have laboratory tests done, not including those for a hospitalization? WK49 Did you have those tests done?	Yes/No	Outpatient	Medical examination or treatment need	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
	WK60 In the last two years, have you needed medical attention that you could not get?	Yes/No			
Respondent-Driven Sampling (RDS) Study	Were there any life-threatening illnesses that occurred during the year prior to leaving the country, and you were not able to access health care? Also asked whether they received appropriate and/or free medical services in their most recent illness episode	Yes/No	Outpatient	Illness-related need	Lee H, Robinson C, Kim J, Mckee M, Cha J. Health and healthcare in North Korea: a retrospective study among defectors. Confl Health. 2020;14(1):41 (https://doi.org/10.1186/s13031-020-00284-y).
Rwanda Integrated Household Living Conditions Survey (EICV)	SECTION 3 (QTN 3). Over the last 4 weeks did "…." suffer from any health problems? SECTION 3(QTN 4). Over the last 4 weeks, has "…" consulted anyone in the medical profession, paramedical or a healer or visited a medical establishment?	Yes/No	Overall	Overall health	
SAGE Well-being of Older People Study (SAGE-WOPS)	When was the last time you needed health care? Q.402. The last time you needed health care, did you get health care?	Yes/No	Overall	Overall health	Mugisha JO, Edwards A, Naidoo N, Chatterji S, Seeley J, Kowal P. Longitudinal data resource from the wellbeing of older people cohort of people aged >50 years in Uganda and South Africa from 2009 to 2019. S Afr Med J. 2023;113(9):36–41. (https://doi.org/10.7196/SAMJ.2023.v113i8.16706).

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Salud, Bienestar y Envejecimiento (SABE)	902 Durante los últimos 30 días, ¿usted ha tenido algún problema de salud? During the past 30 days, have you had any health problems?	Yes/No	Outpatient	Physician	María Teresa Calzada Gutiérrez and Dr. Herney Rengifo; Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
	903 Por alguno de los problemas de salud que ha tenido en los últimos 30 días, ¿ha consultado o buscado ayuda? For any of the health problems you have had in the last 30 days, have you consulted or sought help?				
	904 ¿Cuál fue la principal razón para NO consultar o buscar ayuda? What was the main reason for NOT consulting or seeking help?				
	F3_2 En el ult. ano - No hizo la consulta aunque la necesito [In the last year – didn't make the consultation even if needed]	Yes/No	Outpatient	Physician	
	C.17l En ult. ano se ha hecho atender por el odontologo [C.17l In the last year have you been cared for by a dentist?]				
Socio-Economic Panel Survey	Whom did [NAME] consult for this illness or injury in the last 4 weeks?	1. No one 2. Traditional healer 3. Doctor 4. Dentist 5. Nurse 6. Medical Asst 7. Midwife 8. Pharmacist 9. Chemist 10. Other (Specify)	Outpatient	Illness or injury-related need	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Study of global AGEing and adult health (SAGE) Wave 1, Wave 2, Wave 3	The last time you needed health care, did you get health care?	Yes/No	Overall	Overall health	Kailembo A, Preet R, Stewart Williams J. Socioeconomic inequality in self-reported unmet need for oral health services in adults aged 50 years and over in China, Ghana, and India. Int J Equity Health. 2018;17:99 (https://doi.org/10.1186/s12939-018-0812-2). Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
Study of global AGEing and adult health (SAGE) Wave 2, Wave 3	In the last 12 months, has there been a time when you needed to stay overnight in a health care facility but did not get that care? – Inpatient care	Yes/No	Inpatient	Overnight stay need	
	In the last 12 months was there a time when you needed health care from a doctor/in a clinic, but did not get care? – Outpatient	Yes/No	Outpatient	Care from a doctor	
Survey of Disability, Ageing and Carers (SDAC)	Since last year, has there been any time you needed to go to a medical specialist but didn't?	Yes/No	Outpatient	Specialist consulta-tion need	
Survey of Health, Ageing and Retirement in Europe (SHARE)	HC040_ FORGO ANY TYPES OF CARE BECAUSE OF COSTS Please look at card 17. During the last twelve months, did you forgo any types of care because of the costs you would have to pay?	Yes/No	Overall	Overall health	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Survey of Health, Ageing and Retirement in Europe (SHARE)	HC042_ FOREGO ANY TYPES OF CARE BECAUSE UNAVAILABLE Please look at card 17. During the last twelve months, did you forgot any types of care because they were not available or not easily accessible? IWER: IF NECESSARY, EXPLAIN "AVAILABLE": REASONABLY CLOSE TO HOME, OPEN AT REASONABLE HOURS, ETC. (FROM THE RESPONDENT'S POINT OF VIEW)	Yes/No	Overall	Overall health	
	HC114_ UnmetNeedCost Was there a time in the past 12 months when you needed to see a doctor but could not because of cost? IWER: Any type of doctor or qualified nurse, emergency room or outpatient clinic visits included.	Yes/No	Outpatient	Care from a doctor	
	HC115_ UnmetNeedWait Was there a time in the past 12 months when you needed to see a doctor but could not because you had to wait too long? IWER: Any type of doctor or qualified nurse, emergency room or outpatient clinic visits included.	Yes/No	Outpatient	Care from a doctor	
	CO211_PovertyPo-stponedDentist In the last twelve months, to help you keep your living co-sts down, have you postponed visits to the dentist?	Yes/No	Outpatient	Care from a dentist	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Survey of Health, Ageing and Retirement in Europe (SHARE)	HC760_AffMed Was there a time in the past 12 months when you needed medication but could not afford it because of costs?	Yes/No	Outpatient	Medication need	
Health Survey	Have you experienced a delay in getting health care in the past 12 months due to distance or transport?	Yes/No	Overall	Overall health	
	Was there any time in the past 12 months when you needed health care, but could not afford it?	Yes/No	Overall	Overall health	
Tunisian Health Examination Survey (THES)	The last time you [your child] needed health care, did you get health care?	Yes/No	Overall	Overall health	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
Turkish Health Survey (TSH)	Was there any time in the past 12 months when you needed health care, but could not afford it?	Yes/No	Overall	Overall health	
	Was there any time in the past 12 months when you needed health care, but could not afford it?	Yes/no	Overall	Overall health	
Uganda National Household Survey (UNHS)	HE07. Was anyone consulted (e.g. a doctor, nurse, pharmacist or traditional healer) for the major illness or injury [NAME] suffered during the last 30 days?	Yes/No	Outpatient	Accident or illness-related need	

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Viet Nam National Aging Survey (VNAS)	I20. Did you receive any professional treatment for these illnesses or injuries over the last 12 months?	Yes/No	Outpatient	Accident or illness-related need	
COVID-19 High Frequency Phone Surveys	During the past 30 days, what medical services did you or any other household member need? In the [SERVICE], did they assist you in person or virtually?	1. Yes, in person 2. Yes, virtually (online) 3. Could not access 4. I needed it but did not try 5. Don't know/no answer	Overall	Overall health	
World Health Survey (WHS)	Q7004. The last time you [your child] needed health care, did you get health care?	Yes/No	Overall	Overall health	
World Values Survey (W6)	V190. In the last 12 months, how often have you or your family gone without medicine or medical treatment that you needed?	1. Often 2. Sometimes 3. Rarely 4. Never	Overall	Overall health	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
World Values Survey (W7)	Q53. In the last 12 months, how often have your or your family gone without medicine or medical treatment that you needed?	1. Often 2. Sometimes 3. Rarely 4. Never	Overall	Overall health	Kowal P, Corso B, Anindya K, Andrade FCD, Giang TL, Guitierrez MTC et al. Prevalence of unmet health care need in older adults in 83 countries: measuring progressing towards universal health coverage in the context of global population ageing. Popul Health Metr. 2023;21(1):15 (https://doi.org/10.1186/s12963-023-00308-8).
Community-based cross-sectional study	Had she/he felt surgical unmet needs in the last 12 months?	Yes/No	Overall	Surgery	Vora K, Saiyed S, Salvi F, Baines LS, Mavalankar D, Jindal RM. Unmet surgical needs and trust deficit in marginalized communities in India: a comparative cross-sectional survey. J Surg Res. 2023;292:239–46 (https://doi.org/10.1016/j.jss.2023.08.001).

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Cross Sectional Survey	Did you experience any situation within the past 12 months in which you did not seek health care because of waiting time?	Yes/No/not applicable as no need	Overall	Overall health	Achstetter K, Blümel M, Köppen J, Hengel P, Busse R. Assessment of health system performance in Germany: survey-based insights into the perspective of people with private health insurance. Int J Health Plann Manage. 2022;37(6):3103–25 (https://doi.org/10.1002/hpm.3541).
	Did you experience any situation within the past 12 months in which you did not seek health care because of distance or problems with transportation?	Yes/No/not applicable as no need	Overall	Overall health	
	In the past 12 months, did it happen that you needed a medical examination or treatment but could not afford it financially?	I had a need, but could not afford it financially/I had no need	Outpatient	Medical examination or treatment need	
Cross-Sectional Survey (France)	Have you forgone or put-off health care on one or more occasions in the last 12 months?	Yes/No	Overall	Overall health	Daabek N, Bailly S, Foote A, Warin P, Tamisier R, Revil H et al. Why people forgo healthcare in France: a national survey of 164 092 individuals to inform healthcare policy-makers. Int J Health Policy Manag. 2022;11(12):2972–81. doi:10.34172/ijhpm.2022.6310.
Cross-Sectional Survey (Thailand)	During the last 12 months, had he or she had felt unwell and needed health care but did not receive it? If the participant experienced unmet need, they were further asked about the reason for it.	Yes/No	Overall	Overall health	Kunpeuk W, Julchoo S, Phaiyarom M, Sinam P, Pudpong N, Suphanchaimat R. A cross-sectional study on disparities in unmet need among refugees and asylum seekers in Thailand in 2019. Int J Environ Res Public Health. 2021;18(8):3901 (https://doi.org/10.3390/ijerph18083901).
Cross-sectional, population-based household survey	Do you think you need other assistive products that could help your health condition and do not access them? If "yes" then present flash-cards listing relevant assistive products	Yes/No	Overall	Overall health	Pryor W, Nguyen L, Islam QN, Jalal FA, Marella M. Unmet needs and use of assistive products in two districts of Bangladesh: findings from a household survey. Int J Environ Res Public Health. 2018;15(12):2901 (https://doi.org/10.3390/ijerph15122901).

Survey	Questions	Response	Overall / inpatient / outpatient /both	Needed service	Reference publication (if any)
Descriptive Cross-Sectional Survey	In the last 12 months, have you felt any common unmet health problems?	Yes/No	Overall	Overall health	Kshetri DBB, Smith WCS. Self-reported health problems, health care utilisation and unmet health care needs of elderly men and women in an urban municipality and a rural area of Bhaktapur District of Nepal. Aging Male. 2010;14(2):127–31 (https://doi.org/10.3109/13685538.2010.502272).

Annex 5. Survey questions on self-reported forgone health care: reasons and barrier domains

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
AKCOVID-Survey (pandemic)	If response was "Yes, I would have needed it, but I couldn't use one or more of them", participants were asked – What was the most important reason for not making use of the examination(s) or treatment(s)?	Financial reasons	Accessibility (financial)	Schmidt AE, Rodrigues R, Simmons C, Steiber N. A crisis like no other? Unmet needs in healthcare during the first wave of the COVID-19 crisis in Austria. Eur J Public Health. 2022;32(6):969–75 (https://doi.org/10.1093/eurpub/ckac136).
		Too long waiting list or waiting times	Accessibility (organizational)	
		I didn't have any time (e.g. professional or care obligations)	Accessibility (organizational)	
		Lack of accessibility (e.g. no possibility to drive to the practice/clinic)	Accessibility (geographical)	
		I don't know a good specialist	Availability	
		Could not pay for it	Accessibility (financial)	
		Could not take the time off work	Accessibility (organizational)	
		Had other commitments	Accessibility (organizational)	
		The treatment you needed was not available where you live or nearby	Availability	
		The waiting list was too long	Accessibility (organizational)	
		There were no appointments available	Accessibility (organizational)	
		Practice/clinic was not open due to the coronavirus crisis	Availability (COVID-19)	
		Examination/treatment was postponed due to the coronavirus crisis	Availability (COVID-19)	
		Fear of getting infected with the coronavirus	Acceptability (COVID-19)	
		Other		
Australia Patient Experience Study (PEx)	GPS_Q07. Since last year, has there been any time you needed to go to a GP but didn't? GP_Q08. Because of cost	Yes/No	Accessibility (financial)	

[10] *Note:* If there is no reference publication, it is because the survey questionnaire was accessed and reviewed directly.

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Bangladesh Household Income and Expenditure Survey (BHIES)	Whether he/she sought any type of medical treatment for their health problems in the last 12 months ("yes"/ "no") Respondents who replied "no" were then asked the main reason for not seeking medical care	Cost: Paying for services, cost, medical costs, could not afford to, cannot afford treatment/transportation, treatment cost is too much, not having enough money to pay for the associated transportation costs, cannot afford treatment cost, couldn't afford the treatment/transportation, could not afford the cost of treatment/ravel cost, financial reason, non-affordability, financial constraint	Accessibility (financial)	Rahman MM, Rosenberg M, Flores G, Parsell N, Akter S, Alam MA et al. A systematic review and meta-analysis of unmet needs for healthcare and long-term care among older people. Health Econ Rev. 2022;12(1):60 (https://doi.org/10.1186/s13561-022-00398-4).
		Distance: Distance to facility, travel time, long distance to health facilities, physical distance to clinic, too far to travel, distance is too long, too far to travel, difficulty travelling or living far away from facilities, quality satisfactory but facility too far	Accessibility (geographical)	
		Lack of someone to accompany the patient to health care facility: Having someone accompany, could not find anybody who can take me to hospital, there was none to accompany, not having someone to accompany them to the hospital, couldn't find anybody to accompany, no accompany person to health facilities	Accessibility (organizational)	
Brazilian National Health Surveys (BNHS)	Por que motivo ___ não foi atendido (a) nessa última vez que procurou atendimento de saúde nas duas últimas semanas [Why was ___ not seen the last time he/she sought health care in the last 2 weeks?]	Insufficient funds to cover the costs	Accessibility (financial)	Coube M, Nikoloski Z, Mrejen M, Mossialos E. Inequalities in unmet need for health care services and medications in Brazil: a decomposition analysis. Lancet Reg Health Am. 2023;19:100426 (https://doi.org/10.1016/j.lana.2022.100426).
		Health care services were too far away and/or other difficulties involving transportation	Accessibility (geographical)	
		Incompatible service times	Accessibility (organizational)	
		Service takes too long to arrange	Accessibility (organizational)	
		Specialist needed was unavailable	Availability	
		Belief that he/she was not entitled to care	Accessibility (organizational)	
		No one was available to accompany him/her to the appointment	Accessibility (organizational)	
		Did not care for the professionals working at the facility	Availability	
		Ongoing strike among health care service personnel	Availability	
		Other		

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
China Health and Retirement Longitudinal Survey (CHARLS)	ED001. In the last month have you visited a public hospital, private hospital, public health center, clinic, or health worker's or doctor's practice, or been visited by a health worker or doctor for outpatient care? ED002. Have you been ill in the last month? ED003. What's the main reason for not seeking medical treatment? EE001. In the past year, did a doctor suggest that you needed inpatient care but you did not get hospitalized? EE002. What's the main reason for not seeking hospitalization?	Already under treatment		
		Illness is not serious; don't need treatment	Accessibility (informational)	
		Poor	Accessibility (financial)	
		No time	Accessibility (organizational)	
		Inconvenient traffic	Accessibility (geographical)	
		Poor service	Availability	
		Not available	Availability	
		Not enough money	Accessibility (financial)	
		Not willing to go to the hospital	Acceptability	
		Felt that hospital was unlikely to cure problem; hospital quality poor	Availability	
		Felt that care was unlikely to cure the problem; problem too serious	Availability	
		No ward available	Availability	
		Other		
Chinese Longitudinal Healthy Longevity Survey (CLHLS)	F6.1.0 What was the primary reason that you did not go to the hospital when it was necessary?	No money to pay for expenses	Accessibility (financial)	
		Far away	Accessibility (geographical)	
		Inconvenient in movement	Accessibility (geographical)	
		Nobody with whom to go	Acceptability	
		Didn't want to go	Acceptability	
		Other		

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Commonwealth Fund's International Health Policy Survey	If you didn't visit an appropriate health facility or did nothing: what are the reasons you didn't go to a health facility?	Did not fill/collect a prescription for medicine, or you skipped doses of your medicine, because of the cost	Accessibility (financial)	
		Had a medical problem but did not consult with/visit a doctor, because of the cost	Accessibility (financial)	
		Skipped a medical test, treatment or follow-up that was recommended by a doctor, because of the cost	Accessibility (financial)	
		Did not visit a dentist when you needed to, because of the cost	Accessibility (financial)	
		No service in area	Availability	
		Wait time too long/no appointments	Accessibility (organizational)	
		Not taking new patients	Accessibility (organizational)	
		Cost	Accessibility (financial)	
		Decided not to seek care	Accessibility (informational)	
		Too busy/other responsibilities	Accessibility (organizational)	
		Transportation problems	Accessibility (geographical)	
		Language problems	Acceptability	
		Other reason		
		Not a resident	Accessibility (organizational)	
		Lack of skilled doctors	Availability	
		Waiting for health insurance	Accessibility (organizational)	
		Work commitments	Accessibility (organizational)	
		Not able to leave the house due to coronavirus restrictions	Accessibility (COVID-19)	
		Services restricted due to coronavirus	Accessibility (COVID-19)	
		Unvaccinated coronavirus status	Accessibility (COVID-19)	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Cross-Sectional Survey (France)	"Have you forgone or put-off healthcare on one or more occasions in the last 12 months (yes/no)?" If they answered 'yes' to the key question they were asked for details about the type(s) of healthcare forgone, the reason for foregoing or putting it off, how long they had been forgoing or putting-off healthcare and the impact (if any) on their life. Reasons for forgoing healthcare? (5 responses maximum allowed)	Self-pay part of cost too expensive Loss of income due to work stoppage Expensive transport costs I do not know how much I will be asked to pay Cannot advance costs	Accessibility (financial)	Daabek N, Bailly S, Foote A, Warin P, Tamisier R, Revil H et al. Why people forgo healthcare in France: a national survey of 164 092 individuals to inform healthcare policy-makers. Int J Health Policy Manag. 2022;11(12):2972–81. doi:10.34172/ijhpm.2022.6310.
		Geographical distance Absence of means of transport	Accessibility (geographical)	
		Delays to get an appointment too long The steps are too complicated (need for accompaniment) Physical inability to visit a physician	Accessibility (organizational)	
		Availability (lack of time) Do not know a practitioner	Availability	
		Lassitude Lack of information about the system Non-urgent care Work related fears (stress, work stoppage...)	Accessibility (informational)	
		Care refusal by practitioner (saturation, discrimination) Negligence Fear of the doctor Fear of diagnosis	Acceptability	
		Other:		
Cross-Sectional Survey (Germany)	Did you experience any situation within the past 12 months in which you did not seek health care because of waiting time?	Yes/No	Accessibility (organizational)	Achstetter K, Blümel M, Köppen J, Hengel P, Busse R. Assessment of health system performance in Germany: survey-based insights into the perspective of people with private health insurance. Int J Health Plann Manage. 2022;37(6):3103–25 (https://doi.org/10.1002/hpm.3541).
	Did you experience any situation within the past 12 months in which you did not seek health care because of distance or problems with transportation?	Yes/No	Accessibility (geographical)	
	In the past 12 months, did it happen that you needed a medical examination or treatment but could not afford it financially?	I had a need, but could not afford it financially/I had a need and could afford it financially/I had no need	Accessibility (financial)	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Cross-Sectional Survey (Indonesia)	In general, before the COVID-19 pandemic, what were the main reasons people did not receive the health services they needed?	Distance: Distance to facility, travel time, long distance to health facilities, physical distance to clinic, too far to travel, distance is too long, too far to travel, difficulty travelling or living far away from facilities, quality satisfactory but facility too far	Accessibility (geographical)	Kusnadi G, Fletcher E, Espressivo A, Fitrianingrum NM, Saputra MA, Sophiarany N et al. Essential healthcare services during the COVID-19 pandemic: a cross-sectional study of community needs and perspectives in West Java, Indonesia. BMJ Open. 2024;14(1):e077585 (http://bmjopen.bmj.com/content/14/1/e077585). Community needs, perceptions and demand: community assessment tool. Geneva: World Health Organization; 2021 (https://www.who.int/publications/i/item/WHO-2019-nCoV-vaccination-community_assessment-tool-2021.1).
		Long waiting time: Wait time, long wait time, long waiting, wait time too long, facing long queues, long waiting times, waiting time is too long, long waiting time, quality satisfactory but involves long waiting	Accessibility (organizational)	
		Unavailability of medicine: Lack of medications, preference for traditional medicine, lack of medicine and medical supplies	Availability	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Cross-Sectional Survey (Myanmar)	If yes, did you receive it? If not received what are the reasons. If yes, did you receive it? If not received what are the reasons.	Cost: Paying for services, cost, medical costs, could not afford to, cannot afford treatment/transportation, treatment cost is too much, not having enough money to pay for the associated transportation costs, cannot afford treatment cost, couldn't afford the treatment/transportation, could not afford the cost of treatment/ravel cost, financial reason, non-affordability, financial constraint	Accessibility (financial)	Tinn CS, Paek SC, Meemon N. Unmet healthcare needs and their determining factors: addressing inequalities in access to healthcare in Myanmar. JPSS. 2024;32:591–608 (http://doi.org/10.25133/JPSSv322024.035).
		Long waiting time: Wait time, long wait time, long waiting, wait time too long, facing long queues, long waiting times, waiting time is too long, long waiting time, quality satisfactory but involves long waiting	Accessibility (organizational)	
		Unavailability of health care services: Non availability of facility, hospital was not available in the area or hospital beds were full, unavailability of a dentist, no health care facility in the area, non-availability of health care services, required specific services were not available or if services were available quality was not satisfactory/ doctors not available	Availability	
		Lack of someone to accompany the patient to health care facility: Having someone accompany, could not find anybody who can take me to hospital, there was none to accompany, not having someone to accompany them to the hospital, couldn't find anybody to accompany, no accompany person to health facilities	Accessibility (organizational)	
Cross-Sectional Survey (Thailand)	During the last 12 months, had he or she had felt unwell and needed health care but did not receive it? If the participant experienced unmet need, they were further asked about the reason for it.	I had a need, but could not afford it financially	Accessibility (financial)	Kunpeuk W, Julchoo S, Phaiyarom M, Sinam P, Pudpong N, Suphanchaimat R. A cross-sectional study on disparities in unmet need among refugees and asylum seekers in Thailand in 2019. Int J Environ Res Public Health. 2021;18(8):3901 (https://doi.org/10.3390/ijerph18083901).

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
COVID-19 National Longitudinal Phone Survey (NLPS)	What was the reason you or the member of your household were not able to access the medical treatment?	Lack of money	Accessibility (financial)	
		No medical personnel available	Availability	
		Turned away because facility was full	Availability	
		Due to movement restrictions	Accessibility (COVID-19)	
		Other		
EU Statistics on Income and Living Conditions (EU-SILC) survey	If "yes", participants were then asked to select the main reason If the respondent needed a medical consult, <Name> what was the main reason for not consulting a medical specialist?	Could not afford to (too expensive)	Accessibility (financial)	
		Waiting list	Accessibility (organizational)	
		Could not take time off work (or could not take time off from caring for children or others)	Accessibility (organizational)	
		Too far to travel or no means of transport	Accessibility (geographical)	
		Fear of doctor/hospitals/ examination/treatment	Acceptability	
		Wanted to wait and see if problem got better on its own	Accessibility (informational)	
		Did not know any good doctor or specialist	Accessibility (informational)	
		Other		
European Health Interview Survey (EHIS)	Have you experienced delay in getting health care in the past 12 months because the time needed to obtain an appointment was too long?	Yes/No	Accessibility (organizational)	
	Have you experienced delay in getting health care in the past 12 months due to distance or transport problems?	Yes/No	Accessibility (geographical)	
	Was there any time in the past 12 months when you needed the following kinds of health care, but could not afford it? (By type of care: Medical care, Dental care, Prescribed medicines, Mental health care)	Yes/No	Accessibility (financial)	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
European Social Survey (ESS)	In the last 12 months, were you ever unable to get a medical consultation or the treatment you needed for any of the reasons listed on this card? If "yes", participants were asked to select reasons E15. Which of the reasons on the card explains why you were unable to get this medical consultation or treatment? CODE ALL THAT APPLY.	Waiting list too long	Accessibility (organizational)	Fjær EL, Stornes P, Borisova LV, McNamara CL, Eikemo TA. Subjective perceptions of unmet need for health care in Europe among social groups: findings from the European social survey (2014) special module on the social determinants of health. Eur J Public Health. 2017;27(suppl_1):82–9 (https://doi.org/10.1093/eurpub/ckw219). Evidence gaps on unmet health and social care needs in the WHO European Region: research report. Geneva: World Health Organization; 2025 (https://iris.who.int/handle/10665/381522).
		No appointments available	Accessibility (organizational)	
		Treatment needed was not available where you live or nearby	Availability	
		Could not pay for services	Accessibility (financial)	
		Could not take time off work, or had other commitments	Accessibility (organizational)	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Health and Welfare Survey (HWS) 2015	During the last 12 months, have you ever needed health care but not received it? If you did not receive it, then please state the reasons	Cost: Paying for services, cost, medical costs, could not afford to, cannot afford treatment/transportation, treatment cost is too much, not having enough money to pay for the associated transportation costs, cannot afford treatment cost, couldn't afford the treatment/transportation, could not afford the cost of treatment/ravel cost, financial reason, non-affordability, financial constraint	Accessibility (financial)	Meemon N, Paek SC. Factors associated with unmet need for healthcare among older adults in Thailand. APSSR. 2019;19(2):14 (https://www.dlsu.edu.ph/wp-content/uploads/pdf/research/journals/apssr/2019-June-vol19-2/14-factors-associated-with-unmet-need-for-healthcare-among-older-adults-in-thailand.pdf).
		Distance: Distance to facility, travel time, long distance to health facilities, physical distance to clinic, too far to travel, distance is too long, too far to travel, difficulty travelling or living far away from facilities, quality satisfactory but facility too far	Accessibility (geographical)	
		Long waiting time: Wait time, long wait time, long waiting, wait time too long, facing long queues, long waiting times, waiting time is too long, long waiting time, quality satisfactory but involves long waiting	Accessibility (organizational)	
		Unavailability of health care services: Non-availability of facility, hospital was not available in the area or hospital beds were full, unavailability of a dentist, no health care facility in the area, non-availability of health care services, required specific services were not available or if services were available quality was not satisfactory/ doctors not available	Availability	
		Lack of someone to accompany the patient to health care facility: Having someone accompany, could not find anybody who can take me to hospital, there was none to accompany, not having someone to accompany them to the hospital, couldn't find anybody to accompany, no accompany person to health facilities	Accessibility (organizational)	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Health and Welfare Survey (HWS) 2017	If the respondents' replies indicated that they had an unmet need, the follow-up question was: What was the main reason for the unmet health care need?	Cost: Paying for services, cost, medical costs, could not afford to, cannot afford treatment/transportation, treatment cost is too much, not having enough money to pay for the associated transportation costs, cannot afford treatment cost, couldn't afford the treatment/transportation, could not afford the cost of treatment/ravel cost, financial reason, non-affordability, financial constraint	Accessibility (financial)	Chongthawonsatid S. Identification of unmet healthcare needs: a national survey in Thailand. J Prev Med Public Health. 2021;54(2):129–36 (https://doi.org/10.3961/jpmph.20.318).
		Long waiting time: Wait time, long wait time, long waiting, wait time too long, facing long queues, long waiting times, waiting time is too long, long waiting time, quality satisfactory but involves long waiting	Accessibility (organizational)	
		Unavailability of health care services: Non-availability of facility, hospital was not available in the area or hospital beds were full, unavailability of a dentist, no health care facility in the area, non-availability of health care services, required specific services were not available or if services were available quality was not satisfactory/ doctors not available	Availability	
		Lack of someone to accompany the patient to health care facility: Having someone accompany, could not find anybody who can take me to hospital, there was none to accompany, not having someone to accompany them to the hospital, couldn't find anybody to accompany, no accompany person to health facilities	Accessibility (organizational)	
		Transport: Transport to facility, travel inconvenience, unavailability of transport	Accessibility (geographical)	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Health and Welfare Survey (HWS) (2019)	Did you need any health care in the past 12 months but failed to receive it? Any respondent who experienced unmet need, was asked to recount the most important reason for not acquiring.	Cost: Paying for services, cost, medical costs, could not afford to, cannot afford treatment/transportation, treatment cost is too much, not having enough money to pay for the associated transportation costs, cannot afford treatment cost, couldn't afford the treatment/transportation, could not afford the cost of treatment/ravel cost, financial reason, non-affordability, financial constraint	Accessibility (financial)	Suphanchaimat R, Sinam P, Phaiyarom M, Pudpong N, Julchoo S, Kunpeuk S et al. A cross sectional study of unmet need for health services amongst urban refugees and asylum seekers in Thailand in comparison with Thai population, 2019. Int J Equity Health. 2020;19:205 (https://doi.org/10.1186/s12939-020-01316-y).
		Distance: Distance to facility, travel time, long distance to health facilities, physical distance to clinic, too far to travel, distance is too long, too far to travel, difficulty travelling or living far away from facilities, quality satisfactory but facility too far	Accessibility (geographical)	
		Long waiting time: Wait time, long wait time, long waiting, wait time too long, facing long queues, long waiting times, waiting time is too long, long waiting time, quality satisfactory but involves long waiting	Accessibility (organizational)	
		Lack of trust: No trust in health professional, do not trust health staff, do not trust or feel confident with facilities or providers, lack of trust	Acceptability	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Health and Welfare Survey (HWS) 2011–2019	During the last 12 months, was there any time when you personally, really needed a medical examination or treatment for a health problem (as an outpatient, inpatient or dental health services), but you did not receive it? If no, what was the main reason?	Cost: Paying for services, cost, medical costs, could not afford to, cannot afford treatment/transportation, treatment cost is too much, not having enough money to pay for the associated transportation costs, cannot afford treatment cost, couldn't afford the treatment/transportation, could not afford the cost of treatment/ravel cost, financial reason, non-affordability, financial constraint	Accessibility (financial)	Vongmongkol V, Viriyathorn S, Wanwong Y, Wangbanjongkun W, Tangcharoensathien V. Annual prevalence of unmet healthcare need in Thailand: evidence from national household surveys between 2011 and 2019. Int J Equity Health. 2021;20(1):244 (https://doi.org/10.1186/s12939-021-01578-0).
		Distance: Distance to facility, travel time, long distance to health facilities, physical distance to clinic, too far to travel, distance is too long, too far to travel, difficulty travelling or living far away from facilities, quality satisfactory but facility too far	Accessibility (geographical)	
		Long waiting time: Wait time, long wait time, long waiting, wait time too long, facing long queues, long waiting times, waiting time is too long, long waiting time, quality satisfactory but involves long waiting	Accessibility (organizational)	
		Lack of someone to accompany the patient to health care facility: Having someone accompany, could not find anybody who can take me to hospital, there was none to accompany, not having someone to accompany them to the hospital, couldn't find anybody to accompany, no accompany person to health facilities	Accessibility (organizational)	
		Lack of trust: No trust in health professional, do not trust health staff, do not trust or feel confident with facilities or providers, lack of trust	Acceptability	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Household Income and Expenditure Survey (HIES)	P318. What is the MAIN reason(s) [xxx] did not seek medical assistance?	Hospital, village health centre is too far	Accessibility (geographical)	
		Hospital, village health centre not friendly	Acceptability	
		Hospital, village health centre is not clean	Availability	
		Hospital, village health centre not open	Availability	
		Hospital, village health centre staff not available	Availability	
		Doctor not available	Availability	
		No medication at hospital, health centre, dispensary, clinic	Availability	
		Cannot pay for transport	Accessibility (financial)	
		Health problem not serious	Accessibility (informational)	
		Waiting hours too long	Accessibility (organizational)	
		Use traditional healer first		
		Other		
Korea Health Panel Survey (KHPS)	If yes: Which of the following is the main reason for not receiving the necessary medical treatment or examination?	Financial reasons (burden of medical expenditure)	Accessibility (financial)	
		Health facilities were too far away	Accessibility (geographical)	
		Difficulty visiting a health care facility due to functional limitation or poor health	Accessibility (geographical)	
		No one to take care of children	Accessibility (organizational)	
		Perception that the symptom was not severe	Accessibility (informational)	
		Lack of information on where to go	Availability	
		No time to visit a health care facility	Accessibility (organizational)	
		Inability to make a timely reservation	Accessibility (organizational)	
		No regular doctor	Availability	
		Other		

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Korean National Health and Nutrition Survey (KNHANES)	What is the main reason you needed dental care but did not receive it?	Long waiting time, difficulty making reservations	Accessibility (organizational)	
		Not having enough time	Accessibility (organizational)	
		Symptoms not severe	Accessibility (informational)	
		Afraid of medical tests or treatments	Acceptability	
		Cost-related concerns and restrictions on transportation to get to health care providers	Accessibility (financial)	
		Time	Accessibility (organizational)	
		Economic reasons	Accessibility (financial)	
		Transportation inconvenience	Accessibility (geographical)	
Liberia Household Income and Expenditure Survey (LHIES)	What problems did [NAME] face during the most recent visit to the health care provider in the last thirty days?	Poor building/medical tools	Availability	
		Long waiting time	Accessibility (organizational)	
		Poorly trained staff	Availability	
		Too expensive	Accessibility (financial)	
		Lack of medicine	Availability	
		Unsuccessful treatment	Availability	
		Long distance/time taken to health facility	Accessibility (geographical)	
		Other		
Longitudinal Ageing Survey of India (LASI)	HC005. [Ask if HC002=p and HC003=i] What was your main reason for not seeking a visit? HC007. [Ask if HC002=a, k,l,m,n,o and HC006=1] What were the reasons you decided against going to a hospital?	Did not get sick		
		Needed to work	Accessibility (organizational)	
		Did not want to give up a day's work	Accessibility (organizational)	
		Not enough money or cost was too high	Accessibility (financial)	
		Treatment was unlikely to be effective	Availability	
		Illness was not serious	Accessibility (informational)	
		Nobody to accompany	Acceptability	
		No quality facilities available nearby	Availability	
		Had medicine at home		
		Family member(s) decided it was not required	Acceptability	
		No health care facility nearby	Availability	
		Difficult to get to the health care provider	Accessibility (geographical)	
		Other		

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Malaysia Ageing and Retirement Survey (MARS)	C606_1. If NO, what is the main reason for not going for medical check-up? C606. If no, why you didn't you go for medical check-up?	Wanted to do medical check-up but it is difficult to travel to a medical check-up facility (either because of the distance or travelling cost)	Accessibility (geographical)	
		Did not expect any problem as the previous check-up went fine	Accessibility (informational)	
		Too busy	Accessibility (organizational)	
		Could not afford	Accessibility (financial)	
		Afraid of the results	Acceptability	
		Did not see a need	Accessibility (informational)	
		Other		
Mental Health Survey (MHS)	If "yes", i.e. indicating an unmet need, they were asked to select all the applicable reasons	I prefer to handle problems on my own		
		I don't think it would help	Availability	
		I don't have time for it	Accessibility (organizational)	
		I worry about the costs	Accessibility (financial)	
		I don't know where to go for (extra) help	Availability	
		I'm afraid others would think bad of me	Acceptability	
		I don't speak the language well	Acceptability	
		I asked for it, but didn't get (extra) help	Accessibility (organizational)	
		I cannot get there (e.g. no transport)	Accessibility (geographical)	
		Other		
Multi-Country Survey Study (MCSS)	6600. In the last 12 months, were you ever refused health care because you could not afford it? (Only in long survey)	Yes/No	Accessibility (financial)	
	6601. In the last 12 months, did you not seek health care because you could not afford it? (Both long and short survey)	Yes/No	Accessibility (financial)	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
National Health Service Survey (NHSS) (mainland China)	What was the main reason for not seeking inpatient treatment?	Illness is not serious	Accessibility (informational)	Zhuoga C, Cuomu Z, Li S, Dou L, Li C, Dawa Z. Income-related equity in inpatient care utilization and unmet needs between 2013 and 2018 in Tibet, China. Int J Equity Health. 2023;22:85 (https://doi.org/10.1186/s12939-023-01889-4).
		Financial difficulties	Accessibility (financial)	
		The procedure of seeing a doctor is too complex	Accessibility (organizational)	
		Having no time	Accessibility (organizational)	
		Transportation problems	Accessibility (geographical)	
		No effective treatment	Availability	
		It is unnecessary	Accessibility (informational)	
		Poor service of hospital	Availability	
		There is no bed available	Availability	
		Other	Availability	
National Sample Survey (NSS) 75th round	Q13. Reason for no treatment (code) Q16. Reason for not seeking medical advice (code) What were the reason for not seeking treatment?	No medical facility available in the neighbourhood	Availability	
		Facilities available but no treatment sought owing to lack of faith	Availability	
		Facility of satisfactory quality not available	Availability	
		Ailment not considered serious	Accessibility (informational)	
		Financial reasons	Accessibility (financial)	
		Facility of satisfactory quality too expensive	Accessibility (financial)	
		Facility too expensive	Accessibility (financial)	
		Long waiting	Accessibility (organizational)	
		Facility of satisfactory quality involves long waiting	Accessibility (organizational)	
		Cannot afford to wait long due to domestic/economic engagement	Accessibility (organizational)	
		Familial/religious belief	Acceptability	
		Others		

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
National Sample survey (NSS) 75th round	Did you feel an unmet need for a public health facility when you suffered/suffering from any disease and did not access a public health facility what were the main reason?	Cost: Paying for services, cost, medical costs, could not afford to, cannot afford treatment/transportation, treatment cost is too much, not having enough money to pay for the associated transportation costs, cannot afford treatment cost, couldn't afford the treatment/transportation, could not afford the cost of treatment/ravel cost, financial reason, non-affordability, financial constraint	Accessibility (financial)	Yadav R, Yadav J, Shekhar C. Unmet need for treatment-seeking from public health facilities in India: an analysis of sociodemographic, regional and disease-wise variations. PLOS Glob Public Health. 2022;2(4):e0000148 (https://doi.org/10.1371/journal.pgph.0000148).
		Distance: Distance to facility, travel time, long distance to health facilities, physical distance to clinic, too far to travel, distance is too long, too far to travel, difficulty travelling or living far away from facilities, quality satisfactory but facility too far	Accessibility (geographical)	
		Long waiting time: Wait time, long wait time, long waiting, wait time too long, facing long queues, long waiting times, waiting time is too long, long waiting time, quality satisfactory but involves long waiting	Accessibility (organizational)	
		Unavailability of health care services: Non-availability of facility, hospital was not available in the area or hospital beds were full, unavailability of a dentist, no health care facility in the area, non-availability of health care services, required specific services were not available or if services were available quality was not satisfactory/ doctors not available	Availability	
		Lack of trust: No trust in health professional, do not trust health staff, do not trust or feel confident with facilities or providers, lack of trust	Acceptability	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
National Sample survey (NSS) 75th round	What were the reasons for not seeking treatment?	No medical facility available in the neighbourhood	Availability	Yadav J, Devi S, Singh MN, Manchanda N, Moradhawaj. Health care utilization and expenditure inequities in India: benefit incidence analysis. Clin Epidemiol Glob Health. 2022;15:101053 (https://doi.org/10.1016/j.cegh.2022.101053).
		Facilities available but no treatment sought owing to lack of faith	Availability	
		Long waiting	Accessibility (organizational)	
		Financial reasons	Accessibility (financial)	
		Ailment not considered serious	Accessibility (informational)	
		Others		
National Survey of Older Koreans (NSOP)	Question was posed on the reason for not seeking medical care and treatment in the survey	Financial constraints	Accessibility (financial)	
		Mildness of symptoms	Accessibility (informational)	
		Impairment to mobility	Accessibility (geographical)	
		Fear of treatment process	Acceptability	
		Lack of time	Accessibility (organizational)	
		Inconvenience of transportation	Accessibility (geographical)	
		Difficulty with making appointments and waiting for care	Accessibility (organizational)	
		Lack of medical information	Availability	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
New Zealand Health Survey (NZHS)	A2.830. In the past five years, was there a time when a doctor referred you to a specialist but you did not go for any of the following reasons? A2.360. In the past 12 months, was there a time when you had a medical problem but did not visit a GP for any of the following reasons? AMH1.11a. Thinking about the most recent time when you felt you needed professional help but didn't receive it, why was that? In the past 12 months, was there a time when you got a prescription for yourself but did not collect one or more prescription items from the pharmacy or chemist because of cost?	Cost	Accessibility (financial)	
		Time taken to get an appointment too long	Accessibility (organizational)	
		Owed money to the medical centre	Accessibility (financial)	
		Dislike or fear of the GP	Acceptability	
		Difficult to take time off work	Accessibility (organizational)	
		No transport or too far to travel	Accessibility (geographical)	
		Could not arrange childcare or care for a dependent adult (an adult who is ill or disabled)	Availability	
		Didn't have a carer, support person or interpreter to go with you	Availability	
		Hospital or specialist doctor didn't accept the referral	Accessibility (organizational)	
		No longer needed or issue was resolved		
		Wanted to handle it alone and/or with the support of family, whānau and friends		
		Couldn't spare the time	Accessibility (organizational)	
		Costs too much	Accessibility (financial)	
		Problems with transportation or childcare	Accessibility (geographical)	
		Unsure where to go or who to see	Availability	
		Couldn't get an appointment at a suitable time	Accessibility (organisational)	
		Time taken to get an appointment too long	Accessibility (organisational)	
		Available services did not meet my cultural or language needs	Acceptability	
		Health professionals unhelpful or unwilling to help	Acceptability	
		Not satisfied with available services	Availability	
		Didn't think treatment would work	Availability	
		Concerned what others might think	Acceptability	
		I don't want to answer		
		Other		

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Nigeria Living Standards Survey (NLSS)	Why did [NAME] not consult anyone regarding the most severe illness/injury specified in [Q6]?	No need, minor illness or injury	Accessibility (informational)	
		Too far	Accessibility (geographical)	
		Too expensive	Accessibility (financial)	
		Poor quality of care	Availability	
		Other		
Panel Socio-Economic Survey (PSES)	Was there any time during the last 12 months when you personally, really needed a medical examination or treatment for a health problem but you did not receive it? Yes/No. What was the main reason?	Cost: Paying for services, cost, medical costs, could not afford to, cannot afford treatment/transportation, treatment cost is too much, not having enough money to pay for the associated transportation costs, cannot afford treatment cost, couldn't afford the treatment/transportation, could not afford the cost of treatment/ravel cost, financial reason, non-affordability, financial constraint	Accessibility (financial)	Thammatacharee N, Tisayaticom K, Suphanchaimat R, Limwattananon S, Putthasri W, Netsaengtip R et al. Prevalence and profiles of unmet healthcare need in Thailand. BMC Public Health. 2012;12:923 (https://doi.org/10.1186/1471-2458-12-923).
		Distance: Distance to facility, travel time, long distance to health facilities, physical distance to clinic, too far to travel, distance is too long, too far to travel, difficulty travelling or living far away from facilities, quality satisfactory but facility too far	Accessibility (geographical)	
		Lack of someone to accompany the patient to health care facility: Having someone accompany, could not find anybody who can take me to hospital, there was none to accompany, not having someone to accompany them to the hospital, couldn't find anybody to accompany, no accompany person to health facilities	Accessibility (organisational)	
		Lack of trust: No trust in health professional, do not trust health staff, do not trust or feel confident with facilities or providers, lack of trust	Acceptability	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Patient Experiences in Healthcare Survey (PEHS)	Participants were asked if, during the past 12 months, they had: (i) forgone a medical visit or follow-up appointment due to costs; (ii) forgone a medical test, treatment or other follow-up due to costs; (iii) an unfilled prescription for medicine, or skipped doses due to costs; or (iv) forgone a medical visit due to difficulties in travelling.	Forgone a medical visit or follow-up appointment due to costs	Accessibility (financial)	
		Forgone a medical test, treatment or other follow-up due to costs	Accessibility (financial)	
		An unfilled prescription for medicine, or skipped doses due to costs	Accessibility (financial)	
		Forgone a medical visit due to difficulties in travelling	Accessibility (geographical)	
		Difficulties in travelling	Accessibility (geographical)	
People's Voice Survey (PVS)	Q30. The last time this happened, what was the main reason you did not receive health care?	High cost	Accessibility (financial)	
		Far distance	Accessibility (geographical)	
		Long wait time	Accessibility (organizational)	
		Poor health care provider skills	Availability	
		Staff don't show respect	Acceptability	
		Medicines and equipment are not available	Availability	
		Illness not serious	Accessibility (informational)	
		Refused	Accessibility (organizational)	
		Other		

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Population-based, nationally representative survey	In the last 12 months, did you seek any health care or did you need any medical condition and you experienced difficulties accessing it? If people experienced difficulties, they were asked about the reasons	Cost: Paying for services, cost, medical costs, could not afford to, cannot afford treatment/transportation, treatment cost is too much, not having enough money to pay for the associated transportation costs, cannot afford treatment cost, couldn't afford the treatment/transportation, could not afford the cost of treatment/ravel cost, financial reason, non-affordability, financial constraint	Accessibility (financial)	Banks LM, O'Fallon T, Hameed S, Usman SK, Polack S, Kuper H. Disability and the achievement of universal health coverage in the Maldives. PLoS One. 2022;17(12):e0278292 (https://doi.org/10.1371/journal.pone.0278292).
		Distance: Distance to facility, travel time, long distance to health facilities, physical distance to clinic, too far to travel, distance is too long, too far to travel, difficulty travelling or living far away from facilities, quality satisfactory but facility too far	Accessibility (geographical)	
		Lack of someone to accompany the patient to health care facility: Having someone accompany, could not find anybody who can take me to hospital, there was none to accompany, not having someone to accompany them to the hospital, couldn't find anybody to accompany, no accompany person to health facilities	Availability	
		Transport: Transport to facility, travel inconvenience, unavailability of transport	Accessibility (geographical)	
		Unavailability of medicine: Lack of medications, preference for traditional medicine, lack of medicine and medical supplies	Availability	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Progress in universal health in the Americas	If you didn't visit an appropriate health facility or did nothing: What are the reasons you didn't go to a health facility?	Had no money	Accessibility (financial)	
		It's far away	Accessibility (geographical)	
		Long waiting time	Accessibility (organizational)	
		There are no medicines	Availability	
		There are no doctors	Availability	
		Don't trust doctors	Acceptability	
		It was not serious	Accessibility (informational)	
		It was not necessary	Accessibility (informational)	
		Prefer to be cured with home remedies	Acceptability	
		Don't have insurance	Accessibility (financial)	
		Self-prescribed or repeated previous prescription	Accessibility (informational)	
		Lack of time	Accessibility (organizational)	
		Abuse by health personnel	Acceptability	
		Other		
Respondent-Driven Sampling (RDS) Study	Were there any life-threatening illnesses that occurred during the year prior to leaving the country, and you were not able to access health care? Also asked whether they received appropriate and/or free medical services in their most recent illness episode	Cost: Paying for services, cost, medical costs, could not afford to, cannot afford treatment/transportation, treatment cost is too much, not having enough money to pay for the associated transportation costs, cannot afford treatment cost, couldn't afford the treatment/transportation, could not afford the cost of treatment/ravel cost, financial reason, non-affordability, financial constraint	Accessibility (financial)	Lee H, Robinson C, Kim J, Mckee M, Cha J. Health and healthcare in North Korea: a retrospective study among defectors. Confl Health. 2020;14(1):41 (https://doi.org/10.1186/s13031-020-00284-y).
		Distance: Distance to facility, travel time, long distance to health facilities, physical distance to clinic, too far to travel, distance is too long, too far to travel, difficulty travelling or living far away from facilities, quality satisfactory but facility too far	Accessibility (geographical)	
		Unavailability of medicine: Lack of medications, preference for traditional medicine, lack of medicine and medical supplies	Availability	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
SHARE (Data on health and retirement in Europe)	During the last 12 months, did you forgo any types of care because of the costs you would have to pay?	Yes/No	Accessibility (financial)	
	During the last 12 months, did you forgo any types of care because they were not available or not easily accessible?	Yes/No	Availability	
	Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?	Yes/No	Accessibility (financial)	
	Was there a time in the past 12 months when you needed to see a doctor but could not because you had to wait too long?	Yes/No	Accessibility (organizational)	
	In the last 12 months, to help you keep your living costs down, have you postponed visits to the dentist?	Yes/No	Accessibility (financial)	
	During the last 12 months, which of the following types of care did you forgo because of the costs you would have to pay, if any?	Yes/No	Accessibility (financial)	
	During the last 12 months, which of the following types of care did you forgo because they were not available or not easily accessible, if any?	Yes/No	Availability	
Study on global AGEing and adult health (SAGE) – Wave 1, Wave 2 and Wave 3	Which reason(s) best explains why you did not get health care? Which reason(s) best explains why you did not get health care? – related to inpatient health care need in Wave 2 and Wave 3 Which reason(s) best explains why you did not get health care? – related to outpatient health care need in Wave 2 and Wave 3	Could not afford the cost of the visit	Accessibility (financial)	
		No transport available	Accessibility (geographical)	
		Could not afford the cost of transport	Accessibility (financial)	
		You were previously badly treated	Acceptability	
		Could not take time off work or had other commitments	Accessibility (organizational)	
		The health care provider's drugs or equipment were inadequate	Availability	
		The health care provider's skills were inadequate	Availability	
		You did not know where to go	Availability	
		You tried but were denied health care	Accessibility (organizational)	
		You thought you were not sick enough	Accessibility (informational)	
		Other, specify		

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
Ten to Men	Thinking about the most recent time, what were the reasons you could not get the health care you needed? – Wave 1 and Wave 2 During the past 12 months, have you been unable to access health care for any of the following reasons? – Wave 3 and Wave 4	No service in area	Availability	
		Wait time too long/no appointments	Accessibility (organizational)	
		Not taking new patients	Accessibility (organizational)	
		Cost	Accessibility (financial)	
		Decided not to seek care	Accessibility (informational)	
		Too busy/other responsibilities	Accessibility (organizational)	
		Transportation problems	Accessibility (geographical)	
		Language problems	Acceptability	
		Other reason		
		Not a resident	Accessibility (organizational)	
		Lack of skilled doctors	Availability	
		Waiting for health insurance	Accessibility (organizational)	
		Work commitments	Accessibility (organizational)	
		Not able to leave the house due to coronavirus restrictions	Accessibility (COVID-19)	
		Services restricted due to coronavirus	Accessibility (COVID-19)	
		Unvaccinated coronavirus status	Accessibility (COVID-19)	
Turkish Health Survey (THS) 2016	Have you experienced a delay in getting health care in the past 12 months because the time needed to obtain an appointment was too long?	Yes/No	Accessibility (organizational)	Başar D, Dikmen FH, Öztürk S. The prevalence and determinants of unmet health care needs in Turkey. Health Policy. 2021;125(6):786–92 (https://doi.org/10.1016/j.healthpol.2021.04.006).
	Have you experienced a delay in getting health care in the past 12 months due to distance or transport?	Yes/No	Accessibility (geographical)	
	Was there any time in the past 12 months when you needed health care, but could not afford it?	Yes/No	Accessibility (financial)	
Turkish Health Survey (THS) (2019)	In the last 12 months, have you been unable to afford medical care due to inability to pay?	Yes/No	Accessibility (financial)	Çakmak C, Demirci Ş, Uğurluoğlu Ö. Unmet health-care needs: a study based on Turkey health survey (2019). Cir Cir. 2025;93(4):367–77. doi:10.24875/CIRU.23000448.
	During the last 12 months, have you ever needed dental care but could not afford it due to inability to pay?	Yes/No	Accessibility (financial)	
	During the last 12 months, have you ever been unable to afford the prescribed medicine because you needed it, but could not afford it?	Yes/No	Accessibility (financial)	

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
World Bank COVID-19 High-Frequency Phone Surveys	Why couldn't you access the service?	Lack of money	Accessibility (financial)	
		Medical staff not available	Availability	
		Medication/drug not available	Availability	
		No appointment available	Availability	
		Limited transportation/ no transportation	Accessibility (geographical)	
		Restriction for going out of home	Acceptability	
		Fear of going out and getting COVID-19	Acceptability	
		No medical insurance	Accessibility (organizational)	
		Other (specify)		
World Health Survey (WHS)	Which reasons best explain why you [or your child] did not get health care? Q7005-Q7015	Could not afford the cost of the visit	Accessibility (financial)	
		No transport	Accessibility (geographical)	
		Could not afford the cost of transport	Accessibility (financial)	
		The health care provider's drugs or equipment are inadequate	Availability	
		The health care provider's skills are inadequate	Availability	
		You were previously badly treated	Acceptability	
		Could not take time off work or had other commitments	Accessibility (organizational)	
		You did not know where to go	Availability	
		You thought you were not sick enough	Accessibility (informational)	
		You tried but were denied health care	Accessibility (organizational)	
		Other		

Survey	Question	Reasons	Barrier domains	Reference publication (if any)[10]
World Health Survey Plus (WHS+)	Which reason(s) best explains why you did not get health care? – related to inpatient health care need Which reason(s) best explains why you did not get health care? – related to outpatient health care need	Could not afford the cost of the visit	Accessibility (financial)	
		No transport available	Accessibility (geographical)	
		Could not afford the cost of transport	Accessibility (financial)	
		You were previously badly treated	Acceptability	
		Could not take time off work or had other commitments	Accessibility (organizational)	
		The health care provider's drugs or equipment were inadequate	Availability	
		The health care provider's skills were inadequate	Availability	
		You did not know where to go	Availability	
		You tried but were denied health care	Accessibility (organizational)	
		You thought you were not sick enough	Accessibility (informational)	
		Other, specify		

Annex 6.
Strategic programming initiative: measurement of unmet health care needs and barriers to effective coverage with health services

Background

In a context of stagnated, slow and – in some cases – reversed progress towards universal health coverage in many countries, Member States requested WHO (through resolution WHA76.4) to strengthen its strategic focus on "unmet health care needs" and related barriers to effective coverage with health services *(1)*. This is echoed in WHO's Fourteenth General Programme of Work (GPW 14), with its explicit commitment to equity and action on barriers causing forgone care, and a dedicated indicator on perceived barriers for outcome 3/output 3.1 (The primary health care approach renewed and strengthened to accelerate universal health coverage).

In 2024, WHO launched an internal technical working group to respond to these calls, bringing together seven global programmatic areas (gender, rights and equity [coordinating]; health financing; data, analytics and delivery for impact; integrated health services; the WHO Centre for Health Development in Kobe; social determinants of health; and health emergencies) and regional colleagues, with the purpose of developing an official WHO position on advancing the quantitative measurement of unmet need. Additionally, the global WHO handbook for assessment of barriers to effective coverage with health services *(2)* and related regional work *(3)* on scaling up the use of mixed methods barrier assessment approaches are enabling this information to feed into country-level reforms towards universal health coverage.

Analysis of entry points for action

Based on a review of the existing global landscape for the measurement of unmet health care needs and barriers, the working group devised a workplan for 2025–2028. This SPI document describes related country-level and global- and regional-level activities.

Proposed approach

Working group members will lead on the different outputs. An external expert group of researchers (from academia, civil society organizations and national authorities) and partners is also being convened to feed into refinement of the deliverables. Project outputs will be amplified through the UHC Partnership *(4)*, the P4H Social Health Protection Network *(5)* and country office liaison with ministries. The working group will report back to the World Health Assembly on resolution WHA76.4. Learnings from this work will inform the post-2030 monitoring approach for universal health coverage.

Desired impact	More people, particularly the most disadvantaged, are reached in reforms towards universal health coverage

SPI theory of change	**If** countries share experiences and have access to the latest global research and normative guidance on the measurement of unmet needs and barriers to effective coverage with health services
	If countries allocate resources for the collective refinement and application of these measures
	Then the evidence will fuel equity-oriented reforms towards universal health coverage, reduce inequities in service coverage and decrease health care-related financial hardship at the country level

Indicators	Coverage of essential health services (GPW 14 indicator)
	% of population reporting perceived barriers to care (GPW 14 indicator)
	Incidence of financial hardship due to out-of-pocket health spending (GPW 14 indicator)
	Proportion (%) of vulnerable people in fragile settings provided with essential health services (GPW 14 indicator)

OUTCOME 1	**COUNTRY-LEVEL: National health authorities have improved approaches to the measurement of unmet needs and assessment of barriers to effective coverage with health services**
Theory of change	**If** in at least 12 pilot countries, national health authorities share experiences and receive WHO technical assistance and capacity-building for the measurement of unmet needs and assessment of barriers
	If resources are allocated, and national and partner surveys and mixed methods assessments are advanced using enhanced approaches
	Then improved evidence will be available for equity-oriented reforms towards universal health coverage
Output 1.1	National health authorities and partners access enhanced data through incorporation of an updated questionnaire module on unmet health care in the WHO-supported World Health Survey plus (WHS+)
Output 1.2	National health authorities and partners access enhanced data on unmet health care needs through WHS+ sample-frame adjustment (to oversample underrepresented subpopulations), and updated module tested
Output 1.3	National health authorities and partners access enhanced data on unmet health care needs through incorporation of updated module in national and partner surveys, with technical assistance from WHO
Output 1.4	National health authorities and partners produce evidence using mixed methods application of the WHO barriers assessment handbook, and national data-to-action stakeholder meeting convened
Output 1.5	Humanitarian health clusters' evidence improved through use of unmet needs measurement and barriers assessment approaches, including through ongoing WHO work on attacks on health care
Output 1.6	National health authorities and partners access country case-studies highlighting data use, from national to local levels, for closing coverage gaps (to be used for collective deliberation through output 2.5)

OUTCOME 2	**GLOBAL AND REGIONAL LEVELS: National health authorities and partners have strengthened access to global WHO-led research, evidence and normative guidance on the measurement of unmet health care needs and the assessment of barriers to effective coverage with health services**
Theory of change	**If** WHO reviews cutting-edge evidence on the measurement of unmet needs and assessment of barriers
	If resources are in place to develop research and normative products and to convene national health authorities and partners for inputs and consensus-building
	Then WHO will be able to support the strengthened and scaled-up measurement of unmet health care needs and related barriers, thus supporting equity-oriented reforms towards universal health coverage in countries while delivering on resolution WHA76.4 and informing the post-SDG agenda
Output 2.1	National health authorities and partners access a background paper that consolidates existing measurement approaches, identifies research needs and proposes a draft adaptable questionnaire for testing
Output 2.2	National health authorities and partners access the latest data on unmet health care needs, through the WHO Health Inequality Data Repository
Output 2.3	National health authorities and partners access emerging research on measurement approaches, summarized in a scientific journal special edition on measurement of unmet needs
Output 2.4	National health authorities and partners access an evidence brief on interlinkages between financial barriers to access and financial hardship that analyses the implications for quantitative measurement
Output 2.5	National health authorities, partners and WHO share case-studies/expertise and consensus on a measurement approach for unmet health care needs and barriers reached through a global consultation
Output 2.6	National health authorities and partners access a position paper on the measurement of unmet needs and barriers and a briefing on implications for the post-2030 monitoring approach
Output 2.7	National health authorities and partners access expanded, continuously refined WHO guidance for conducting assessments of barriers to effective coverage with health services
Output 2.8	Health cluster leads, health authorities and other humanitarian partners access a pocketbook on measurement of unmet needs and barriers in humanitarian contexts and related capacity-building opportunities

References

1. Seventy-sixth World Health Assembly: Geneva, 21–24 May 2023: resolutions and decisions, annexes. Geneva: World Health Organization; 2023 (WHA76.4; https://iris.who.int/handle/10665/376760).

2. Handbook for conducting assessments of barriers to effective coverage with health services: in support of equity-oriented reforms towards universal health coverage. Geneva: World Health Organization; 2024 (https://iris.who.int/handle/10665/377956).

3. Progress in universal health in the Americas: addressing unmet healthcare needs, gaps in coverage, and lack of financial protection through primary health care. Washington, DC: Pan American Health Organization; 2024 (https://iris.paho.org/handle/10665.2/63086).

4. The Universal Health Coverage Partnership [website]. World Health Organization; 2025 (https://extranet.who.int/uhcpartnership/partners).

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