Intersectoral factors influencing equity-oriented progress towards Universal Health Coverage: results from a scoping review of literature
Intersectoral factors influencing equity-oriented progress towards Universal Health Coverage: results from a scoping review of literature

Carmen de Paz, Nicole B Valentine, Ahmad R Hoseinpoor, Theadora Swift Koller and Megan Gerecke
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The Series: The Discussion Paper Series on Social Determinants of Health provides a forum for sharing knowledge on how to tackle the social determinants of health to improve health equity. Papers explore themes related to questions of strategy, governance, tools, and capacity building. They aim to review country experiences with an eye to understanding practice, innovations, and encouraging frank debate on the connections between health and the broader policy environment. Papers are all peer-reviewed.

Background: This report is part of a Rockefeller-funded project that aims to contribute to the development of appropriate indicators and associated measurement approaches for monitoring social determinants of health, gender equality and human rights, that are relevant to universal health coverage monitoring (UHC). The World Health Organization (WHO) defines UHC as ensuring that all people have access to needed promotive, preventive, curative, rehabilitative and palliative health services, of sufficient quality, while also ensuring that the use of these services does not expose the user to financial hardship. The core WHO project team working on the project was assembled from three main technical units in WHO: Social Determinants of Health (SDH) Gender, Equity and Human Rights (GER), and Surveys, Measurement and Analysis (SMA). These units worked with other programmes in WHO, the consultant and external experts to develop criteria for the scope of the work and the methodological approach. This report was commissioned to review literature published between 2009 to 2013 on barriers to health services in the field of social determinants of health, gender equality and human rights. The review complemented the WHO report, Equity, social determinants and public health programmes (2010), which reviewed literature up until 2008.

Acknowledgments: The authors would like to acknowledge the funding from the Rockefeller Foundation for this work. The authors would also like to acknowledge with gratitude the discussions with experts, which benefited this paper. In particular, thanks go to John Lynch (University of Adelaide), Gouke Bonsel (Erasmus University Medical Centre) and Ximena Aguilera (Desarrollo Medical University, Chile) for assistance with the methodology. Thanks go to WHO colleagues, Christopher Fitzpatrick, Knut Lomroth, Andreas Alois Reis, and Diana Elizabeth Weil for comments on presentations of the work. A first version of this paper was provided as background to the Bellagio meeting on Measuring and monitoring intersectoral factors influencing equity in universal health coverage (UHC) and health (May 2014). Thanks also go to Lilijana Lukic, a WHO intern, who provided specific inputs for tables and paragraphs of text for the revised paper, Eugenio Villar, Coordinator, Social Determinants of Health; Veronica Magar, Team Leader, Gender, Equity and Human Rights; and Colin Mathers, Coordinator, Mortality and Health Analysis, for their oversight and support for the work described in the discussion paper.

Nicole Valentine, Ahmad Hosseinpoor and Theadora Koller jointly conceptualized the work and designed the methodology. Carmen de Paz implemented the literature review and wrote the first draft of the paper. Carmen de Paz, Nicole Valentine, Ahmad Hosseinpoor, and Theadora Koller worked on the revised paper. Megan Gerecke reviewed the methodology and provided technical and editing support on the revised draft.
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## Abbreviations

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<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>CI</td>
<td>Confidence interval</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>Human immunodeficiency virus/ acquired immunodeficiency syndrome</td>
</tr>
<tr>
<td>n/a</td>
<td>Not available</td>
</tr>
<tr>
<td>OR</td>
<td>Odds ratio</td>
</tr>
<tr>
<td>SDH</td>
<td>Social Determinants of Health</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>UHC</td>
<td>Universal Health Coverage</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Program</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
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</table>
Acknowledging the importance of equity in access to health services, the World Health Organization (WHO) and the World Bank have committed to the goal of Universal Health Coverage (UHC), which aims to ensure that all people can obtain quality health services without enduring financial hardship. The measurement of UHC uses metrics for effective coverage (percentage who needed a particular service who received it) and financial protection (no impoverishment due to direct medical costs).

Objectives and methods
Achieving UHC is a major responsibility and goal of the health sector. But it cannot be done by the health sector alone. Its achievement depends on factors affecting the population being serviced, that are not under the direct control of the health sector (e.g., an individual's family environment, access to infrastructure and resources, knowledge and education, etc.). Inequities across these intersectoral factors affect equity-oriented progress towards UHC (e.g. the denominator of income in the impoverishment measure of financial health coverage). To ensure these gaps are adequately considered and addressed, WHO is developing guidance for a global framework to measure, evaluate and monitor these other factors affecting UHC.

A broad set of issues are recorded as barriers to care and equity in access in the literature (e.g. geographic accessibility, acceptable treatment, health systems responsiveness). Some issues are more frequently cited as barriers in the peer-review literature than others. In particular, the mention of human rights issues, are typically less well covered. The purpose of this paper was to scope a more comprehensive set of barriers that took into account human rights considerations and the care continuum, using a defined set of Universal Health Coverage service tracer conditions. It doing so the paper aimed to verify the extent to which different barriers were present in the peer-review literature. These barriers could help a country to explain which factors, apart from steps taken by the health sector to improve service delivery and financing, were influencing progress towards UHC. It aimed to categorize issues found into domains more closely aligned with social health determinants, gender quality and human rights, and to identify indicators commonly used for their measurement. A scoping literature review was conducted at the end of 2013, covering journal articles in PubMed published between 2009 and 2013. The review searched for barriers to services along five dimensions of UHC based on Tanahasi's framework (availability, accessibility/affordability, acceptability, contact and effective coverage). It focused on the prevention and treatment of specific health conditions as outlined in the then scope of work by WHO and the World Bank for measuring “effective service coverage” as part of UHC: (1) non-communicable diseases, including diabetes, adult chronic conditions, depression, tobacco use, injuries and cervical cancer; and (2) MDG-related health conditions, including maternal health, HIV/AIDS, and tuberculosis. A search of studies of general access to health services was also conducted to complement the specific searches by health condition.
Results

The results of the search are summarized below.

- **Type of studies.** After two rounds of review, the searches yielded 188 original articles. Studies covered 50 countries with half focussed in the USA and BRICS countries (Brazil, India, China, South Africa). A third of studies used only qualitative analyses and two thirds used quantitative analyses.

- **Thematic barrier domains**
  - The barrier themes most often cited were grouped into the following domains: (1) Socio-economic constraints (cited in 25% studies), (2) Political and institutional constraints (cited in 16.5%), (3) Demographic and jurisdictional constraints (cited in 18.7%), (4) Knowledge and education (cited in 18.2%), (5) Social and gender related norms, culture and stigma (cited in 12.4%), and (6) Physical constraints (cited in 8.7%).

  - Depending on the health condition in question, different barrier domains were more prominent. For example, demographic and jurisdictional constraints were the most commonly cited factor deterring access to general health services, TB treatment, maternal health services and depression treatment. While socio-economic barriers were commonly cited for diabetes treatment, TB treatment and maternal health services. For HIV/AIDS prevention and depression treatment, gender and social norms and associated stigma are frequently cited barriers. Education and knowledge barriers appear to be more prevalent in the literature with regards to diabetes treatment, cervical cancer and depression treatment. Physical and institutional constraints are often mentioned as barriers to the coverage of injuries treatment.

- **Indicators for measuring barriers:**
  - Income/wealth was usually measured by monthly income above or below a country-specific threshold\(^1\), wealth quintile or a wealth index, and asset ownership and/or debt status.

  - Working status was usually measured through employment/unemployment, years worked, working status (i.e., full time/other) or working days/hours per week.

  - In the case of education, the prevailing indicator was educational attainment (e.g., primary, secondary or tertiary education, overall years of education or population between 18–24 with at most lower secondary education).

  - Knowledge and information availability were usually assessed through self-reported levels of awareness and the prevalence of misconceptions.

  - Discrimination and stigma were also evaluated through reported perceptions, although standardized measures such as the HIV stigma score or the Perceived Devaluation Discrimination Scale (PDD) were used in some cases.

  - Government or institutional constraints and engagements included a variety of specific measures referring to program development and implementation, lobbies’ role, expenditure on social policy or on specific health programs and related equipment, proportion of organizations providing service, obstructive laws, social protection provision and the availability of financial incentives for staff and organizational entities.

  - Measures of gender-related constraints included the need for partner’s permission or encouragement, existing gender roles or the UNDP’s Gender Empowerment Measurement.

  - Physical constraints related to transportation and time constraints were respectively

\(^1\) For example, 30,000 USD in the United States to 180 Euro in Morocco
assessed by the availability of transportation facilities (e.g., helicopter vs. ground services for trauma), and the reported conflict between the prevention or treatment activity and children responsibilities or private life schedules.

- **Sources of data.** Most studies (71%) drew on tailored-made surveys designed for the study. Among the remaining studies, 18% used some kind of generally available national survey data, usually the Demographic and Health Surveys.

**Conclusions**
The scoping literature review described the relevance of a key set of domains for different health conditions as well as characterizing specific variables indicative of barriers to care. Search terms selected for the monitoring framework were derived from an *a priori* assumptions based on expert opinion from the fields of human rights, social determinants and gender equality. The research, which focussed on barriers to care, supported a range of barrier domains extending well beyond socio-economic costs associated with financial health protection for direct medical expenditures.

Given that many of the quantitative studies reviewed developed their own metrics for barriers, the identification of potential global indicators for monitoring intersectoral barriers to service access appears challenging. Yet the qualitative studies indicate that these barriers are important to people and are worth tracking and targeting for change. Several indicators that are commonly used to capture education, employment and socioeconomic status are likely to be available in cross-country comparable surveys.
1 Introduction

1.1 Background
Equal opportunities in access to health services and in health outcomes are necessary for the realization of the right to health and progress to achieve Universal Health Coverage. Systematically unfair health disadvantages, referred to as health inequities, or inequities in access to service provision, are socially unjust. Moreover, persistent inequities can have important economic implications, since they often lead to inefficient results (World Health Organization, 2013). Acknowledging the importance of equity in access to health services, the World Health Organization (WHO) and the World Bank have committed to the goal of Universal Health Coverage (UHC), which aims to ensure that all people can obtain quality health services without enduring financial hardship.

However, UHC depends not only on health services’ availability, accessibility and adequacy but also on other factors beyond the health sector’s immediate control. These are termed intersectoral factors influencing equity-oriented progress towards UHC, and refer to the unequal conditions experienced by individuals that may hinder equity in access to health services and in health outcomes (e.g., poor environmental quality, poverty and poor living conditions, lack of education, etc.).

A better understanding of what these factors are and how they interact with health-sector specific barriers is required in order to design, implement and monitor effective actions to reach populations systematically excluded from the health system. In the post-2015 process aimed at setting sustainable development goals, it is also critical to recognize that UHC, together with action on intersectoral factors, can contribute to the overarching goal of increased healthy life expectancy.

In this context, the WHO, with financial support from the Rockefeller Foundation, is developing an approach to monitoring intersectoral factors influencing equity-oriented progress towards UHC. Several complementary actions have been designed and carried out to inform this activity. This discussion paper, which is part of such efforts, summarizes a scoping review of the literature conducted between October and December 2013. The objective of the review was to identify the main intersectoral barriers to health services and potential variables for their monitoring based on the existing literature on the topic.

The paper is structured as follows. This section introduces the conceptual framework for the analysis of barriers to UHC. Section two presents the search methodology, including the strategy, screening and selection criteria. Section three summarizes the main findings, with regards to the characteristics of the papers reviewed, the main barrier domains identified, and the indicators or variables used for their measurement. Section four concludes.

---

1 It must be however noted that the original framework additionally encompassed some health systems barriers, i.e. barriers whose remedy is more traditionally and directly under the control of the ministry of health, which led to the inclusion of the domain political/institutional constraints in the search strategy (see following sections).
1.2 A conceptual framework for the study of barriers to UHC

The conceptual framework guiding this review is based on Tanahashi (1978) framework for effective coverage of health services. Tanahashi describes coverage according to five dimensions, across which barriers to care exist both within and beyond the health system. These barriers result in coverage gaps and in unequal health outcomes (WHO, 2013b). The five dimensions include:

- **Availability coverage** is the proportion of people in need for whom the service is available. It is defined as the ratio between availability of resources and the size of the target population.

- **Accessibility (including affordability) coverage** is the proportion of people in need for whom the service is accessible, both physically and financially (i.e., ability to pay and geographic constraints).

- **Acceptability coverage** is the proportion of people in need who are willing to use the services. Acceptability includes factors such as culture, beliefs, gender sensitivity and confidentiality.

- **Contact coverage** is the proportion of people in need who have had contact with the service provider.

- **Effective coverage** is the proportion of people in need who were effectively treated by the service. It measures the health system’s performance in service delivery, and relates to treatment adherence, provider compliance and diagnostic accuracy.

All five dimensions are relevant in the assessment of UHC but it is helpful to have more specific ways of characterizing these barriers from an intersectoral policy perspective. Some examples of intersectoral barriers across the first three dimensions of access to UHC are presented in table 1 below. Barriers arise due to intersectoral determinants: For example, poor transportation policies and infrastructure

### Table 1. Examples of determinants and barriers to UHC that require intersectoral redress

<table>
<thead>
<tr>
<th>Determinants of barriers</th>
<th>Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Urban or rural development strategies providing for basic amenities such as electrification.</td>
<td>- Lack of electrification, improved water sources, adequate sanitation, Information and Communication Technologies connectivity, and waste removal infrastructure in health facilities</td>
</tr>
<tr>
<td>- Inclusiveness of social protection scope and benefits, and effectiveness of linkages with the health sector.</td>
<td>- Lack of social services that impact health care access and health outcomes (e.g., early child development services)</td>
</tr>
<tr>
<td>- Cost and/or connectivity of public transport</td>
<td>- Accessibility barriers</td>
</tr>
<tr>
<td>- Employment and labour market policies regarding health and disability.</td>
<td>- Lack of affordable, adequate transportation</td>
</tr>
<tr>
<td>- Internal affairs policies related to entitlements linked to identity cards, residency.</td>
<td>- Insufficient social protection coverage leading to financial constraints</td>
</tr>
<tr>
<td>- Education, communications and media sectors promotion of health issues and adaptation of health messaging for different audiences (e.g., illiterate).</td>
<td>- High opportunity costs of seeking care (e.g., missed work, childcare) and poorly harmonized opening hours</td>
</tr>
<tr>
<td>- Cross-sectoral platforms for participatory approach to public service provision.</td>
<td>- Administrative barriers linked to requirements related to residency, identity card or citizenship</td>
</tr>
<tr>
<td>- Robustness of anti-discrimination, minority and migrant inclusion policies and legislation on the right to health.</td>
<td>- Acceptability barriers</td>
</tr>
<tr>
<td>- Existence and functionality of cross-government anti-corruption bodies.</td>
<td>- Health literacy barriers linked to low education levels and insufficient knowledge among the population of their rights, entitlements and obligations</td>
</tr>
<tr>
<td>- Women’s empowerment and gender equality legislation, advocacy, social initiatives.</td>
<td>- Discrimination by health service providers</td>
</tr>
<tr>
<td></td>
<td>- Corruption in the health sector</td>
</tr>
<tr>
<td></td>
<td>- Barriers related to social norms about gender</td>
</tr>
</tbody>
</table>
may create barriers related to the accessibility of services.

Tanahasi’s conceptual approach to coverage was complemented by Tugwell’s (1985) approach to understanding effectiveness through provider and patient compliance, adherence (after contact) and safety – to ensure effective coverage as per the concept used regarding interventions in the UHC framework. The conceptual framework for the review and proposed domain areas was formulated as shown below in figure 1.

The scoping review of the literature searched for barriers to services along the five dimensions of UHC (availability, accessibility, acceptability, contact and effectiveness), and around the prevention and treatment of two main categories of health conditions: (1) non-communicable diseases, including diabetes, adult chronic conditions, depression, tobacco use, injuries and cervical cancer; and (2) MDG-related health conditions, including maternal health, HIV/AIDS, tuberculosis, and access to general health services.

This conceptual framework helped ensure coherence with the overall exercise of developing a monitoring framework. The focus on specific chronic and MDG-related conditions allowed for consistency with parallel activities aimed at identifying indicators for monitoring UHC in selected countries. Furthermore, drawing on the MDGs provided the monitoring framework with global relevance.

Figure 1. Scoping of intersectoral barriers to universal coverage of health services

<table>
<thead>
<tr>
<th>General health services</th>
<th>Non-communicable disease (NCD) prevention and treatment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDG-related conditions: maternal, reproductive and communicable diseases prevention and treatment:</td>
<td></td>
</tr>
<tr>
<td>• Maternal health services</td>
<td></td>
</tr>
<tr>
<td>• TB treatment</td>
<td></td>
</tr>
<tr>
<td>• HIV/AIDS prevention</td>
<td></td>
</tr>
<tr>
<td>Non-communicable disease (NCD) prevention and treatment:</td>
<td></td>
</tr>
<tr>
<td>• Diabetes treatment</td>
<td></td>
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<tr>
<td>• Depression treatment</td>
<td></td>
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<tr>
<td>• Injuries treatment</td>
<td></td>
</tr>
<tr>
<td>• Cervical cancer prevention</td>
<td></td>
</tr>
<tr>
<td>• Tobacco use prevention</td>
<td></td>
</tr>
<tr>
<td>• Adult chronic conditions promotion</td>
<td></td>
</tr>
</tbody>
</table>

| Physical, financial time constraints | Administrative, knowledge | Discrimination, social/gender norms, stigma | Service quality, information |
Intersectoral factors influencing equity-oriented progress towards Universal Health Coverage: results from a scoping review of literature

This paper summarizes a scoping review of available quantitative and qualitative literature that aimed to identify barriers to health services for the prevention and treatment of selected non-communicable diseases and MDG-related conditions, and barriers to health services in general. The guiding question of the review was: what is the relationship between barriers and the specific health topic/health service (for both treatment and prevention of health/disease conditions)? An accompanying question, was to ask: what were the indicators and measurement approaches that researchers used to measure barriers?

A multi-layered process was adopted for the exercise. In order to test the results, additional searches based on alternative methodologies have been conducted (see section 2.2 and annex 2).

2 Methodology

2.1 Search strategy

In the first stage, a list of search terms for both barriers and health conditions or topics was identified in consultation with different health experts (see table 2). These terms were searched in PubMed1 using a two-term search string, combining barrier terms and health condition terms. Each health condition was searched separately, using barrier terms AND health condition/topic terms. Searches conducted included:

<table>
<thead>
<tr>
<th>Search</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>barriers + general health services</td>
</tr>
<tr>
<td>B</td>
<td>barriers + maternal health</td>
</tr>
<tr>
<td>C</td>
<td>barriers + TB treatment</td>
</tr>
<tr>
<td>D</td>
<td>barriers + HIV/AIDS prevention</td>
</tr>
<tr>
<td>E</td>
<td>barriers + diabetes treatment</td>
</tr>
<tr>
<td>F</td>
<td>barriers + depression treatment</td>
</tr>
<tr>
<td>G</td>
<td>barriers + injuries treatment</td>
</tr>
<tr>
<td>H</td>
<td>barriers + cervical cancer prevention</td>
</tr>
<tr>
<td>I</td>
<td>barriers + tobacco use</td>
</tr>
<tr>
<td>J</td>
<td>barriers + chronic conditions (results reported in diabetes, etc.)</td>
</tr>
</tbody>
</table>

Normally, the search was restricted to the title. However in the case of maternal health, tobacco use and chronic conditions, it was necessary to expand it to the abstract given the limited results obtained from the title search.

2.2 Screening and prioritization criteria

In the second stage, articles were selected based on certain inclusion/exclusion criteria. As depicted in figure 2, of the 13857 initial results, journal articles were retained if they were published during the five year period 2009–2013, focused on human subjects, and

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1 With the exception of General Health Services that also includes results from Jstor and Science Direct. See section 2.3 for more details.
Table 2. Search terms

<table>
<thead>
<tr>
<th>Key concept</th>
<th>Search terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barrier</td>
<td>Barriers OR access to health services OR travel time OR geographic location OR availability of health services OR geographic distribution of health services OR health service provider location OR acceptability barriers OR acceptance barrier OR health behavior OR belief OR culture OR language OR literacy OR attitude OR trust OR corruption OR in kind payments OR adequate funding OR user fees OR out of pocket payment OR co-payment OR subsidy OR referral OR health infrastructure OR skilled human resources OR distance OR waiting time OR informal payments OR travel costs OR opening hours OR residency entitlements OR confidentiality OR stigma OR gender sensitivity OR use of services OR undiagnosed cases OR diagnostic accuracy OR evidence-based treatment OR treatment adherence OR impoverishing expenditures OR catastrophic expenditures</td>
</tr>
<tr>
<td>A. General health services</td>
<td>Health systems OR health sector OR health services</td>
</tr>
<tr>
<td>B. Maternal health</td>
<td>Skilled birth attendance OR maternal care OR newborn care OR maternal services OR newborn services OR maternal health OR newborn health</td>
</tr>
<tr>
<td>C. TB treatment</td>
<td>Tuberculosis OR TB OR tuberculosis diagnosis OR TB diagnosis OR tuberculosis detection OR TB detection OR tuberculosis complete DOTS treatment OR TB complete DOTS treatment OR tuberculosis cure rate OR TB cure rate OR Tuberculosis treatment adherence OR TB treatment adherence OR tuberculosis treatment compliance OR TB treatment compliance OR tuberculosis treatment default OR TB treatment default OR tuberculosis treatment outcome OR TB treatment outcome OR tuberculosis treatment success rate OR TB treatment success rate OR tuberculosis death rate OR TB death rate OR tuberculosis treatment delay OR TB treatment delay</td>
</tr>
<tr>
<td>D. HIV/AIDS prevention</td>
<td>HIV/AIDS prevention OR HIV prevention OR AIDS prevention OR use of HIV barriers OR use of AIDS barriers OR use of condoms</td>
</tr>
<tr>
<td>E. Diabetes treatment</td>
<td>Diabetes OR glycemia</td>
</tr>
<tr>
<td>F. Depression treatment</td>
<td>Depression</td>
</tr>
<tr>
<td>G. Injuries treatment</td>
<td>Injury OR injuries OR trauma</td>
</tr>
<tr>
<td>H. Cervical cancer prevention</td>
<td>Cervical cancer screening OR PAP smear OR smear test</td>
</tr>
<tr>
<td>I. Tobacco use prevention</td>
<td>Tobacco prevention OR cigarettes prevention OR smoking prevention</td>
</tr>
<tr>
<td>J. Chronic conditions</td>
<td>Chronic conditions OR hypertension treatment OR high blood pressure control</td>
</tr>
</tbody>
</table>

had an abstract available. In a first round review of the title, an additional 1514 articles were excluded; the second round review of abstracts and text review led to the final selection of 188 relevant articles.

In both rounds of review, the screening criteria were: (1) exclude if clearly no relevance to the public health topic; and (2) exclude if no obvious mention of potential assessment of relationship between barrier and health intervention coverage. Note that relationships between barrier and the health intervention was loosely defined to refer to associative relationships. In addition, and alongside the review process, articles were categorized into high relevance, medium relevance, and low relevance, based on the relationship with intersectoral factors influencing UHC, the clarity of definition of barrier indicators, and their potential general applicability. The results from search J (chronic conditions) were excluded in the final selection, since given the restrictive definition of the topic search terms only two relevant articles were identified.

Information on the final sample of articles was systematically summarized in spreadsheets under the following headings: relevance, title, authors, source, sample size, countries, barrier domain, outcome variable, barrier variable, association between barrier and outcome variable, source of data, and conclusions. This categorization allowed the identification of common practices in the literature in terms
of: (1) studied barrier domains; (2) chosen proxy variables or indicators; and (3) common data sources. Basic descriptives of the final 188 articles covered in the full text review are included in annex 1.

2.3 Potential caveats
As with any search strategy, certain caveats need to be mentioned upfront in order to caution regarding the robustness of the results obtained using the methodology.

First, the screening criteria included the availability of abstract, which in principle could bias the search results.

Second, for the most part, the search was conducted only in a single database, PubMed, and therefore there was a risk of bias towards medical literature. To test the importance of this bias, JStor and ScienceDirect were also searched for the topic of general health services, and results were found not to vary significantly.

Finally, to test the chosen search terms and potential biases in the literature, two search strategies using additional search terms for health conditions and/or barriers were tested.

The first alternative search strategy was carried out by an independent researcher,

Figure 2. The scoping review process and results

Initial search (6297 (A), 472 (B), n= 1049 (C), 693 (D), 1203 (E), 850 (F), 1647 (G), 198 (H), 1282 (I), 166 (J)=13857)

Excluded (e.g., language, year, type of publication, availability of abstract) (6077 (A), 337 (B), n=766 (C), 462 (D), 899 (E), 569 (F), 1289 (G), 140 (H), 967 (I), 128 (J)= 11634)

Articles retained (220 (A), 135 (B), n= 283 (C), 231 (D), 304 (E), 281 (F), 358 (G), 58 (H), 315 (I), 38 (J)=2223)

First round: title and abstract review

Excluded (144 (A), 69 (B), n=220 (C), 116 (D), 187 (E), 192 (F), 315 (G), 13 (H), 245 (I), 13 (J)=1514)

Articles retained (76 (A), 66 (B), n=63 (C), 115 (D), 117 (E), 89 (F), 43 (G), 45 (H), 69 (I), 25 (J)=715)

Second round: text review

Excluded (52 (A), 42 (B), n=45 (C), 78 (D), 99 (E), 69 (F), 28 (G), 22 (H), 60(I), 25 (J)=518)

Articles retained (24 (A), 24 (B), 18 (C), 37 (D), 18 (E), 20 (F), 15 (G), 23 (H), 9 (I), 0 (J)=188)
external to the project. The area of maternal health was tested with a three-term search string that combined a new block of “preventable outcomes” with the terms on barriers and health condition (see annex 2 for more details). In addition, the number of search terms for both barriers and conditions/topics was expanded. The search, conducted in PubMed, suggested that expanding the search terms for health condition (in this case maternal health) would significantly increase the number of initial relevant articles (44718 compared to only 472). However, adding a third term to the search string – that of preventable outcomes – significantly reduced the number of results (to 6).

The second alternative search strategy tested the use of additional search terms for barriers, focusing on the area of corruption/informal payments. It included the following terms: “informal payments”, “under-the-counter payments”, “out-of-pocket payments”, “under-the-table payments”, “envelope payments”, “gifts”, “illicit payments”, “solicited payments”, “gratuities”, “illegal payments and unofficial” and “donations”. A more general term was used to cover treatment and prevention of health conditions – namely, “health care”. This search returned a large number of potentially relevant publications that were not identified in the original exercise. This result suggests that the adopted methodology could have been improved by further developing search terms for barrier concepts. As discussed in section 3, this may be especially true for corruption related issues.
3 Major Findings

3.1 Description of reviewed articles

The search was conducted in October to December 2013. All articles retrieved were published in the period 2009–2013, although as shown in figure 3 below and in table A1 in annex 1, few results yielded from 2013 across all conditions/health topics. As an example, for diabetes treatment, 5 papers were published in 2010, 8 in 2011, 4 in 2012 and 1 in 2013.

Regarding the country of study, most of the articles focused on high and upper-middle income countries (see figure 4 and table A2 in annex 1). The most common countries of study were the United States (54 studies), followed by India (12), Brazil and South Africa (11), China and the UK (9) and Nigeria (7). Although the final sample of studies covered many countries (52) across all regions, most of these countries were examined in only 1 or 2 studies.

Figure 3. Reviewed articles by publication year

![Graph showing reviewed articles by publication year](image-url)
Regarding the focus on treatment or prevention, around 58% of the studies reviewed dealt with preventive health services, while the remaining 42% focused on curative service provision (see table A3 in annex 1).

Finally, regarding study methodology, roughly one third of the studies used qualitative methods, while the remaining incorporated some kind of quantitative analysis for the assessment (see figure 5 and table A4 in annex 1). For instance, in the case of general health services, only 2 studies were qualitative, and 22 quantitative.

Figure 4. Reviewed articles by country of study

![Graph showing reviewed articles by country of study](image)

Note: [1] Only countries that were examined in four or more studies are listed here. For details on other countries, see table A2 in annex 1.

Figure 5. Reviewed articles by methods used (quantitative vs. qualitative)

![Graph showing reviewed articles by methods used](image)
Intersectoral factors influencing equity-oriented progress towards Universal Health Coverage: results from a scoping review of literature

3.2 Barrier domains reported in the literature

The main barrier domains that emerged from the analysis of the review’s findings included:

1. Socio-economic constraints (e.g., individual/household income, poverty status, informal working conditions, out-of-work consequences when informally employed or with poor conditions for sick leave and child care leave, occupational rehabilitation; and other indirect costs associated with treatment such as food, additional carer’s help).

2. Demographic (biological) and jurisdictional constraints (e.g., age, sex, rights associated with rural or urban residency, constraints related to formal administrative procedures, rights, or registration requirements e.g. bank accounts, rights to social protection, especially for migrants).

3. Political and institutional constraints (e.g., overall service and financial legislation in the healthcare system, quality, corruption).

4. Knowledge and education constraints (e.g. health literacy and general education attainment).

5. Social norms (e.g. gender norms, cultural norms, stigma and discrimination).

6. Physical constraints (e.g., distance from services especially public ones, lack of transportation and implications for specific financial (socio-economic) constraints).

The main barrier indicators domains identified in the literature are presented by health condition or topic in figure 6 and table 3 below. The barrier domains most often reported were related to the availability and acceptability of services. Income and poverty constraints were mentioned most frequently, followed by political and institutional constraints, demographic and jurisdictional aspects, and knowledge and education. Other less commonly reported barrier domains were social and gender norms and stigma, and physical constraints including transportation and time.

Figure 6. Search results for main barrier domains, total
The attention given to different barriers (and probably their incidence) varies depending on the health conditions/services reviewed:

- In the case of general health services, demographic and jurisdictional constraints and knowledge and education appear to be the most common factors deterring access.
- Demographic and socioeconomic constraints are the most commonly cited barriers with regards to maternal health services.
- For TB treatment, again demographic and jurisdictional constraints appear to be important, alongisdesocioeconomic and political/institutional barriers.
- For HIV/AIDS prevention, gender and social norms and associated stigma tend to be the most frequently cited barriers.
- Both socioeconomic and education and knowledge barriers appear to be more prevalent with regards to diabetes treatment.
- Depression treatment appears to be most often limited by demographic and jurisdictional barriers, knowledge and education, and social and gender norms and stigma.
- Coverage of injuries treatment appears to be especially limited by physical and institutional constraints.
- In the case of cervical cancer screening and prevention, knowledge and education seem to be more significant.
- For tobacco use, no large differences can be observed, although socioeconomic and political/institutional barriers seem to be more relevant.

### 3.2.1 Socioeconomic constraints

Of total 104 studies (out of 188) addressing socioeconomic constraints, wealth/income/ socio-economic status/household assets/housing quality/living conditions/ poverty were some of the variables used in 49 of the articles reviewed. The remaining 55 articles focussed on variables for direct health expenditures, health insurance and out-of-pocket expenditure and more is discussed with respect to these in section 3.3.

Variables describing more the more general areas of socio-economic constraints were used to detect general patterns of services coverage over the social gradient in the literature. However, while the associations
with service coverage were generally in favour of more socially advantaged groups, they were not exclusively unidirectional. For instance, while diabetic patients in the highest income quintile were 0.2 times less likely to perform self-care than those from the poorest quintile in Ethiopia (Ayele et al., 2012), women from richest quintile households in South and Southeast Asia and Latin America and the Caribbean are 25 per cent more likely to have their need for family planning met, compared with women from households in the poorest quintile (Ortayli and Malarcher, 2010). On the same note, pregnant women in the poorest quintile were about half as likely as those in the richest to have delivered in a health facility and to have had their births attended by skilled health personnel in Vietnam (Axelson et al., 2012).

Financial constraints referring to out-of-pocket payments and direct medical expenditures were an obstacle for access based on 19 of the studies reviewed. These medical costs were frequently accompanied by other indirect costs and constraints. As an example, refraining from use of services was connected with out-of-pocket contribution for access to additional needed services (Sobrun-Maharaj et al., 2010), or as co-payments for medical examinations, hospitalizations, or medication (Xu et al., 2009). Study participants in Peru were significantly more likely to indicate acceptance of pre-exposure prophylaxis with a low out-of-pocket cost or if it was free (Galea et al., 2011). As reported by one study’s participant in Iran “I had financial difficulties, especially when I had my accident; the guilty party was unable to pay compensation. The hospital costs amounted to a few million Tomans (few thousand US dollars), and there were other living costs too” (Babamohamadi et al., 2011), while another participant in a study among immigrants in Belgium stated that “they really have to inform us and emphasize that the (HIV/ AIDS) test is free because the people, they are always afraid” (Manirankunda et al., 2009).

One study of maternal health interventions found that the most equitably distributed interventions were family planning, exclusive breastfeeding, and immunizations while most inequitably distributed were those requiring multiple service contacts, and those requiring significant support from the health system (Axelson et al., 2012).

Some literature described financial constraints as budget allocation decisions that households needed to make (16). Overall lack of financial resources of an individual or household resulted in lower food security with monetary constraints. Additionally, budget trade-offs between direct health care costs and other expenses such as food were prominently mentioned as one patient with diabetes stated: ‘It’s easier to get something for a dollar at McDonald’s. Fruit and vegetables are expensive’ (Fukunaga et al., 2011). Limited financial resources often have to be diverted towards bearing the costs of treating the ill person (Munga and Gideon, 2009). Migrants who had a debt over RMB 10,000 Yuan were more likely not to adhere to TB treatment in China (Zhou et al., 2012). Other multivariate studies with utilization as a proxy for coverage have also reported lower utilization of health services for families with loans (Mitchel et al., 2011).

While perceiving private services to be of better quality, due to indirect costs associated with accessing private providers, the proximity and lower cost or free services in the public sector were preferred in a study in South Africa (Mitchell et al., 2011).

Employment sick leave policies and ease of dismissal, in particular for lower socioeconomic groups including informal workers, were perceived as a barrier to using health services (14). Additionally, opportunity costs and the fear of future financial constraints if work was missed were observed in this literature. Lower quantities of discretionary time and higher quantities of monetization of time, especially at very low levels of consumption meant that people in employment avoided taking time off work due to usually uncompensated sick leave or
medical visit especially for preventive care (Ribeiro Monteiro de Figueiredo et al., 2009; Mitchel et al. 2011).

Employment and discrimination in the work environment was described as influencing care seeking behaviour; first, the fear of influencing future earning potential through being discharged from work (Wei et al., 2009); alternatively, being perceived as a less valuable employee after rehabilitation (Sobrun-Maharaj et al., 2010) was an additional example of a determinant to seeking care.

Poorer housing conditions (e.g. tin roof, overcrowding) construction was associated with lower frequency of access in the previous year but the specific pathway was not hypoththesized and, due to the cross-sectional nature of the study, was not easy to explore (Mitchel et al. 2011).

3.2.2 Demographic (biological) and jurisdictional constraints

Demographic factors in shaping health service coverage presented in 77 papers of the literature reviewed. Age was the most common variable used (51), followed by ethnicity (30), marital status (22) and urban-rural residence (20). Immigration or lack of registration was the least cited demographic variable (6), but the only one where there was consistent negative association with the outcome variable. As an example, the risk of non-adherence to TB treatment was higher among migrants in China (Xu et al., 2009), and documented people were significantly more likely than undocumented to have two or more HIV tests taken in the USA (Kinsler et al., 2009). The study in Tanzania showed that the poor, women and informal sector workers (self-employed, agriculture, wage workers) have rarely been covered by formal health insurance mechanisms that are meant to ensure access to essential health services. Additionally, the same groups have been sidelined in formal banking and credit systems creating an additional burden (Munga and Gideon, 2009).

3.2.3 Knowledge and education constraints

Of all 75 articles that addressed knowledge and education constraints, knowledge was the most commonly often cited (50) as a direct barrier for effective coverage of services in. For instance, patient education about antidepressants positively affected antidepressant use, accounting for 18.5 per cent of the explained variance in Taiwan (Sun et al., 2011). In addition, respondents who regularly practiced the five recommended self-management behaviours in treatment were more likely to have had some diabetes education in the USA (Yamashita and Kart, 2011).

Educational attainment and literacy were also common variables throughout studies (48), and the association with the outcome variables was regularly consistent: the higher the level of education, the better access to services. Individuals with elementary educational status were around four times more likely to perform diabetes self-care than individuals unable to read and write in Ethiopia (Ayele et al., 2012). Similar association was shown in South Africa where women with some formal education were nearly eight times more likely to access health services for prevention reasons (Mitchell and Andersson, 2011). The percentage of HIV testing among men who had no or only primary education was lower compared to those more educated in Cote D’Ivoire (Jean, 2012) with similar pattern observed in India between rates of safe delivery care among women with no formal education and those with higher education (34% and 87%) (Singh et al., 2012), and in China with non-adherence to TB treatment and illiteracy (Xu et al., 2009).

3.2.4 Political and institutional constraints

Of total 68 papers addressing some kind of political or institutional barrier to health services, the most prevalent constraint was related to financing (33). Additionally, the
perceived or objective quality of services was often mentioned, mostly referring to the type of facility, waiting times, staff and equipment adequacy, communication with the staff and information provided, and the availability of home or work based care. As an example, the lack of staff and increased workload was found to be a key constraint to access to care of diabetes in Ireland (O’Connor et al. 2013), while home visits diminished non-adherence risks associated with TB treatment in China (Xu et al., 2009).

Legal and fiscal constraints and corruption were observed in 9 papers. For instance, a cross-country study found that 62 countries have laws or regulations that impede access to HIV services for men who have sex with men (Gruskin et al., 2013), while dispersed responsibilities and interests could be hindering the implementation of smoking prevention policies in Germany (Walter, 2010). Additionally, informal payments for services initiated by health care providers’ have been reported in Macedonia (Colombini et al., 2012).

### 3.2.5 Social norms

Out of 51 articles that mention social and gender norms, stigma and discrimination were among the most frequent obstacles (26) for effective health service coverage. The participants in several studies reported: “If you go and say you’re diabetic, then that is accepted and it’s easier to engage with...But when it comes to the issue of depression, then it’s a whole different ball game” (England) (Coventry et al., 2011); "My co-workers thought I was faking it. I was put in the hospital and all I heard was negative comments like, ‘Well, it’s just diabetes, you know, how much can it affect her?’” (USA) (Fukunaga et al., 2011). Two-thirds of participants in a study in the USA identified “acceptance of the HIV population” as a major barrier to HIV prevention services (Torrone et al., 2010), while fear of stigmatization was the most common barrier for uptake of PMTCT services in Nigeria (Hembah-Hilekaan et al., 2012).

Further constraints included oftentimes related culture and religion (11) and gender roles and norms (10). Embarrassment and modesty were issues that arose in preventing access to cervical cancer screening with Chinese and Arabic women in Canada (Redwood-Campbell et al., 2011). For men, a religious affiliation was significantly associated with no history of HIV testing in France (Massari et al., 2011). In study done in Cameroon customs were the main reason for 20.8 per cent of men who stated that going to antenatal care was “not good” (Nkuoh et al., 2009). Men’s knowledge about pregnancy-related care and a positive gender attitude appeared to enhance maternal health care utilization and women’s decision-making about their health care in India (Chattopadhyay, 2012), while women dependent on partner’s permission were more likely to not be tested on HIV in Cambodia (Sasaki et al., 2010).

### 3.2.6 Physical constraints

Among physical constraints articles (36) transportation and distance issues were the most frequently cited (21). Transportation for instance represented a barrier to cervical cancer screening for a quarter of all participants in a study in USA (Percac-Lima et al., 2010). Additionally, distance of the mental health treatment facility was a significant determinant whether a patient would receive any psychotherapy in USA (Pfeiffer et al., 2011) and distance and non-availability of transportation were the most important reasons for delivering at home for 65 per cent of participants of the study in India (Sidney et al., 2012).

Time-related constraints were also found to be relevant obstacles to health services (11). Around 65.1 per cent of participants in a study in Brazil reported losing half work day to attend the medical visit as a constraint to TB treatment (Ribeiro Monteiro de Figueiredo et al., 2009), while 54.8 per cent of study participants in Cameroon stated that their work prevented them to take time to go to antenatal care clinic (Nkuoh et al., 2009).
In a study of sexually transmitted infections, the relationship between service access and time has been reported as being curvilinear for marginalized groups with increasing time associated with lower access up to a point. Thereafter, travel time was associated with less infection (proxying utilization) and with voluntary social isolation a mechanism influencing both transport and health behaviours with respect to specific conditions (sexually transmitted infections) (Bonney et al. 2012).

3.3. The importance of financial barriers related to direct medical expenditures

Constraints of health care financing, referred to either as direct medical costs, out-of-pocket expenditures or health insurance were an important barrier (56 out of 188 papers). In addition, in our categorization scheme, the financial constraints seemed to be overlapping with political/institutional constraints, which also reflect significance of financial protection coverage barriers to services.

In the general health systems access literature review (68 out of 188), half of the studies investigated and found significant association between financial health protection and direct medical cost expenditure (including out-of-pocket). Looking into other literature searches, financial health protection as a constraint was the most prominent in the TB treatment literature (44.4%) of the curative search areas while for the areas of prevention, cervical cancer screening search pointed out financial protection the most (30.4%). Significantly lower presence of financial constraints was evident in mostly prevention related searches, namely HIV/AIDS (18.1%) and tobacco use (11.1%). Low financial dependency of access to HIV/AIDS prevention services can be explained with the fact that the most of the HIV/AIDS prevention programmes, especially in low- and middle-income countries, are often supported by external financial programs.

This pattern strongly highlights the importance of financial protection for direct medical expenditures and supports the validity of the other financial factors.

Even though health services would be covered by health insurance, financial constraints were still evident though other pathways as highlighted above (e.g. employer’s sick leave/child care policies that prevented from use of services due to higher cost of afterhours services or need to use unpaid leave to attend the medical visit).

This highlights the importance of both financial health protection, as envisaged in Universal Health Coverage policies, and other social policies to address indirect expenditure and opportunity costs, which also act as barriers to access.

3.4 Variables and indicators capturing barriers

Based on the review findings, and as shown in figure 7 below, the most common quantifiable variables used in the literature for the assessment of barriers to health services included: lack of knowledge or information (53 studies), educational level (52 studies), wealth and income related measures (52 when adding income, wealth, and poverty measures), age (50 studies), discrimination and stigma (30 studies), sex and ethnicity (30 and 31 studies), lack of family/social support and psychological aspects (29 studies), working status (28 studies) and staff competencies (25 studies). The specific indicators used for assessment were diverse, and in most cases they took the form of responses to tailored-made questionnaires.

For income/wealth, some of the most common indicators were monthly income above or below a country-specific threshold1, wealth quintile or a wealth index, and asset ownership and/or debt status. Poverty or inequality measures included, for instance,

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1 For example, 30,000 USD in the United States to 180 Euro in Morocco
the proportion of the population receiving an equivalized income below 60% of the median income or the Socio-Economic Index of Relative Socio-Economic Advantage and Disadvantage (Australia). Working status was usually measured through employment/unemployment, years worked, working status (i.e., full time/other) or working days/hours per week.

In the case of education, the prevailing measure was educational attainment (e.g., primary, secondary or tertiary education, overall years of education or population between 18–24 with at most lower secondary education). Knowledge and information availability were usually assessed through self-reported levels of awareness and the prevalence of misconceptions. Discrimination and stigma were similarly evaluated through reported perceptions, although standardized measures such as the HIV stigma score or the Perceived Devaluation Discrimination Scale (PDD) were used in some cases. Staff competencies referred to, for instance, staff training, capacity to speak other languages or adequately refer patients, restrictions on staff’s time, physician’s gender concordance, or the relationship of trust built with patients.

Opportunity costs of treatment and prevention were measured, for instance, as the wage lost due to participating in an intervention, while cost-related barriers were proxied by the lack of access to financial resources/institutions (22 studies). Government or institutional involvement (11 studies) included a variety of specific measures referring to program development and implementation, lobbies role, expenditure on social policy or on specific health programs, percentage of organizations providing services, obstructive laws, social protection provision and the availability of financial incentives, for instance for the use of antenatal services. Corruption (2 studies) was measured through the Transparency International Corruption Perceptions Index or reported requests by health care providers for informal payments.

Measures of gender-related constraints (14 studies) included the need for partner’s permission or encouragement, existing gender roles or the United Nations Development Program Gender Empowerment Measure. Transportation (9 studies) and time (14 studies) constraints were respectively assessed by the availability of transportation facilities (e.g., helicopter vs. ground services for trauma), and for time, the reported conflict between the health service and children responsibilities or private life schedules.

The variables assessed are typically influenced by policies across diverse policy sectors apart from the health sector. For example, working status and individual family income is affected by labour, development, industrial and social protection ministerial mandates and policies. Variables related to discrimination, including gender-based constraints are normally addressed by policies in ministries of gender, child welfare, or women. But also important with regard to social norms are ministries of youth and sport, information and institutions that regulate the media. Variables related to lack of time and distance of health facilities are affected both by health service policies but by regional and local development decisions, including the work of ministries responsible nationally for local and regional governments. Although for some variables (e.g., age, gender, ethnicity), the association with UHC was not consistent across studies, for several variables a consistent relationship was found. This was generally true of the most frequently used variables, including wealth, income, education, knowledge, discrimination, social support and employment (see table 4). However, as several of the studies reviewed were qualitative, they did not allow a precise measurement of the connection between barrier variables and UHC, which in any case would only be applicable to the specific study conditions and parameters.
Figure 7. Variables used in the reviewed literature (common variables and number of studies)

Table 4. Consistent relationship between variables and health services coverage

<table>
<thead>
<tr>
<th>Variable</th>
<th>Knowledge and education</th>
<th>Income and wealth</th>
<th>Discrimination and stigma</th>
<th>Lack of family/social support and psychological issues</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Health Coverage</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>
3.5 Data sources used

Regarding the sources of data used for the studies, around 71% of the sources were tailored-made surveys designed for the specific purpose of the study (see table 5). Among the remaining studies, 18% used some kind of generally available national survey data, usually the Demographic and Health Surveys, but also other sources. Routine data from medical center and emergency registries was the third most common source of data (e.g., UK Obstetric Surveillance System, HIV/AIDS case registry of San Francisco Department of Public Health).

Finally, the remainder of studies drew on a variety of other sources, such as the Eurobarometer, Transparency International’s Corruption Perception Index, the Human Development Index, the European Quality of Life Survey, the World Values Survey, the DAWN JAPAN study, the Kaiser Permanente Diabetes Study of Northern California, the Centers for Disease Control and Prevention PRAMS survey (USA), Veterans Affairs’ administrative data (USA), and the Global Health Observatory Data Repository.

Table 5. Sources of data

<table>
<thead>
<tr>
<th>Type of factor</th>
<th>Total</th>
<th>General health services</th>
<th>Maternal health</th>
<th>TB treatment</th>
<th>HIV/AIDS prevention</th>
<th>Diabetes treatment</th>
<th>Depression treatment</th>
<th>Injuries treatment</th>
<th>Cervical cancer prevention</th>
<th>Tobacco use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys designed for the study</td>
<td>134</td>
<td>9</td>
<td>10</td>
<td>16</td>
<td>30</td>
<td>15</td>
<td>18</td>
<td>9</td>
<td>19</td>
<td>8</td>
</tr>
<tr>
<td>National surveys</td>
<td>35</td>
<td>11</td>
<td>13</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demographic and Health Surveys</td>
<td>11</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other</td>
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<td>2</td>
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<td>Medical center and emergency registries</td>
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<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2 These included: the Life Opportunity Survey (UK), National Health Services Survey (China), National Travel Survey (UK), National Family Health Survey (India), Integrated Household Survey (Malawi and Pakistan), Health and Nutrition Examination Survey (Korea), Rural Household Survey (Pakistan), Social and Living Standards Measurement Survey (Pakistan), Fertility Survey (Pakistan), Census or population surveys (USA, Finland), National Composite Policy Index, Household Expenditure Survey, Multiple Indicator Cluster Survey (Thailand), National Trauma Data Bank (Canada), Population registry (Estonia), and the National survey of all public health organizations engaged in chronic disease prevention (USA).

3 Note that totals do not add to 188 as certain studies used more than one source.
The scoping literature review confirmed that the key domain areas selected for the monitoring framework are indeed among the barriers most often highlighted in the literature (see table 6). Income and poverty related constraints, staff competencies, knowledge and education, discrimination and stigma, and employment constraints appear to be the most frequently studied. That said, the attention given to different barriers varies depending on the health conditions/services reviewed.

However, the barrier domains that emerged from the scoping review were generally broader and thus there were fewer domains (6 compared to 12 in the original monitoring framework). Early child development, housing and community infrastructure, social protection, participation and accountability were not identified as individual domains in the scoping review, which additionally identified the domains of institutional and political constraints, and demographic aspects.

In particular, two central barrier domains – corruption/accountability and registration – were not identified as such in the review, probably in connection with methodological challenges (see section 2.3). In the future, an additional scoping review using expanded search terms for these domains and removing restrictions on the health conditions/topics used could complement this work.

Regarding data sources, most of the studies reviewed used specific surveys, with the incidence of barriers measured by study participants’ responses to non-standardized questionnaires. Only a few studies gathered data from standard national surveys (e.g. Demographic and Health Surveys). This poses particular challenges for the identification of potential global indicators for monitoring intersectoral factors influencing UHC. When available (e.g., in China), National Health Services surveys could be particularly useful for monitoring purposes.

Despite the use of non-standardized sources, many of the indicators and the variables they proxied are captured in standardized surveys or data sources. This is especially true for variables related to education, employment and socioeconomic status. For example, indicators such as educational attainment, relative poverty rates, average household income, and unemployment or employment rates are often available in data at the national level and across countries. For example, multiple measures that assess a household’s socioeconomic situation exist (e.g., in National Economic Households surveys).

Some of these indicators could be used to proxy for concepts that may be difficult to measure directly. For example, formal employment rates could provide a proxy for access to health insurance, which was found to be a key obstacle in the area of institutional...
### Table 6. Barrier domains in original monitoring framework and scoping review

<table>
<thead>
<tr>
<th>Barrier domain in original monitoring framework</th>
<th>Goal of the health sector in relation to this domain</th>
<th>Barrier domain identified in scoping review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income and poverty</td>
<td>No person should have insufficient income to meet basic nutritious food requirements, which among other factors hinders the effective coverage/success of many interventions provided through health services.</td>
<td>Socio economic constraints</td>
</tr>
<tr>
<td>Knowledge and education</td>
<td>No person should fail to detect health needs and how to negotiate entry points to health services or financial protection appropriate to needs because of lack of knowledge on health or the health system, rights, entitlements and obligations.</td>
<td>Knowledge and education constraints</td>
</tr>
<tr>
<td>Housing and infrastructure</td>
<td>No person should have living conditions that do not meet basic infrastructural service standards related to clean energy, safe drinking water, adequate sanitation, and vector-control. Their absence perpetuates continuity in exposure to risk factors (and hence is a determinant of health) and undermines health service success (and hence is a barrier to effective coverage).</td>
<td>n/a</td>
</tr>
<tr>
<td>Travel</td>
<td>No person should be prevented from using a needed health service or accessing financial protection coverage (e.g., such as registering for entitlements) because related transport and accommodation costs are prohibitively high. This is particularly important for referrals or for conditions requiring multiple visits.</td>
<td>Physical constraints</td>
</tr>
<tr>
<td>Community and infrastructure</td>
<td>No person should live in a community that has public facilities (including health services), workplaces, and public spaces that facilitate the exposure to environmental and social risk factors for health. Such exposure is both a determinant of health and a barrier to effective coverage.</td>
<td>n/a</td>
</tr>
<tr>
<td>Social protection and employment*</td>
<td>No person should be prevented from using health services because opportunity costs of seeking care (e.g., missed work, foregone employment, childcare) are too high. Likewise, no person should be impoverished* because of opportunity costs. <strong>Note that this supplements the financial protection domain in the WHO/WB core UHC monitoring framework</strong></td>
<td>Socio economic constraints</td>
</tr>
<tr>
<td>Early Child Development</td>
<td>No person should be prevented from benefiting from health interventions because of poor early child development opportunities (with these poor opportunities resulting in reduced physical, emotional, cognitive or social skills).</td>
<td>n/a</td>
</tr>
<tr>
<td>Gender norms</td>
<td>Gender norms, roles and relations translate into differential exposure to risk factors, vulnerability to ill-health, access to treatment, consequences as a result of using treatment and control over health resources within and outside families. No person should face barriers to effective coverage with services or financial protection due to gender norms, roles and relations.</td>
<td>Social and gender norms, culture, stigma and discrimination</td>
</tr>
<tr>
<td>Participation</td>
<td>No person should feel lack of opportunity for their needs, concerns/viewspoints, and experiences to be represented in health decision-making processes that affect them.</td>
<td>n/a</td>
</tr>
<tr>
<td>Registration (institutional constraints)</td>
<td>No person should go without vital registration or appropriate administrative services able to track identity in different jurisdictions, given that this poses a barrier to (and is a determinant of the ability to) access[ing] health services, other public services, and livelihoods (including employment).</td>
<td>Demographic/jurisdictional constraints</td>
</tr>
</tbody>
</table>
constraints. Similarly, the domain of social and gender norms, often captured through non-standardized indicators, could be proxied by general measures of the situation and empowerment of women. For example, information on educational attainment or employment ratios by sex is often available in national surveys.

However, for some other barrier domains, it is difficult to identify adequate proxy indicators. Ideally, specifically tailored surveys could be conducted across countries for the purpose of monitoring constraints to services or questions pertaining such aspects could be incorporated into existing surveys. Nonetheless this option is likely to be costly and time-consuming and may go beyond the capacity of the WHO. Failing the introduction of new measurement instruments, existing indicators or proxies should be further explored to measure areas such as available transportation infrastructure and distance to health facilities (e.g., shortest distance from home to the nearest facility), financial constraints (e.g., out-of-pocket expenditure for indirect costs associated with health care) and overall institutional constraints (e.g., global corruption indexes).
References


Annexes

Annex 1. Information about the articles reviewed

Table A1. Reviewed articles by publication year

<table>
<thead>
<tr>
<th>Year</th>
<th>General Health services</th>
<th>Maternal reproductive health</th>
<th>Communicable diseases</th>
<th>Noncommunicable diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>Prevention</td>
<td>Treatment</td>
<td>Prevention</td>
</tr>
<tr>
<td>2009</td>
<td>5</td>
<td>10</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>2010</td>
<td>5</td>
<td>3</td>
<td>7</td>
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<tr>
<td>2011</td>
<td>6</td>
<td>3</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>2012</td>
<td>8</td>
<td>7</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>2013</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>23</td>
<td>19</td>
<td>37</td>
</tr>
</tbody>
</table>

Table A2. Reviewed articles by country of study

<table>
<thead>
<tr>
<th>Country</th>
<th>Total</th>
<th>General Health services</th>
<th>Maternal health</th>
<th>TB treatment</th>
<th>HIV/AIDS prevention</th>
<th>Diabetes treatment</th>
<th>Depression treatment</th>
<th>Injuries treatment</th>
<th>Cervical cancer</th>
<th>Tobacco use prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>54</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td>14</td>
<td>6</td>
<td>1</td>
<td>12</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>India</td>
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<td>2</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<td></td>
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<tr>
<td>Brazil</td>
<td>11</td>
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<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
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<td>3</td>
<td>2</td>
<td>6</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>China</td>
<td>9</td>
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<td>4</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>UK</td>
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<td></td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi country</td>
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<td>4</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Nigeria</td>
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<td>3</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Canada</td>
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<td>1</td>
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<td>1</td>
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<td>Australia</td>
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<td>1</td>
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<td></td>
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<tr>
<td>Kenya</td>
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<td>1</td>
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<td>Iran</td>
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<tr>
<td>Pakistan</td>
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<td>1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table A3. Reviewed articles by type of health services (preventative/curative)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Maternal health</th>
<th>TB treatment</th>
<th>HIV/AIDS prevention</th>
<th>Diabetes treatment</th>
<th>Depression treatment</th>
<th>Injuries treatment</th>
<th>Cervical cancer prevention</th>
<th>Tobacco use prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventive</td>
<td>93</td>
<td>24</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td>21</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Curative</td>
<td>69</td>
<td>18</td>
<td>16</td>
<td>20</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table A4. Reviewed articles by methods used (quantitative vs. qualitative)

<table>
<thead>
<tr>
<th>Method</th>
<th>Total</th>
<th>General health services</th>
<th>Maternal health</th>
<th>TB</th>
<th>HIV/AIDS prevention</th>
<th>Diabetes treatment</th>
<th>Depression treatment</th>
<th>Injuries treatment</th>
<th>Cervical cancer prevention</th>
<th>Tobacco use prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative</td>
<td>48</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>15</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Quantitative</td>
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<td>22</td>
<td>21</td>
<td>14</td>
<td>22</td>
<td>12</td>
<td>13</td>
<td>10</td>
<td>18</td>
<td>8</td>
</tr>
</tbody>
</table>

Annex 2. Alternative search methodology results

The original keywords were sorted into three main blocks: ‘Barriers’ (B), ‘Preventable outcomes’ (PO) and ‘Topic’(T), based on the idea that sorting and searching in blocks would allow for more precise searches and for comparison between searches. For each block (B, PO, T) new keywords were added, leading to three search blocks within barriers: Ba (original barrier keywords), Bb (added barrier keywords) and Bc (original and added barrier keywords combined). New keywords are listed in table A5 below.

Table A5. New search terms

<table>
<thead>
<tr>
<th>Key concept</th>
<th>Search terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barriers (original)</td>
<td>Barriers OR access to health services OR travel time OR geographic location OR availability of health services OR geographic distribution of health services OR health service provider location OR acceptability barriers OR acceptance barrier OR health behavior OR belief OR culture OR language OR literacy OR attitude OR trust OR corruption OR in kind payments OR adequate funding OR user fees OR out of pocket payment OR co-payment OR subsidy OR referral OR health infrastructure OR skilled human resources OR distance OR waiting time OR informal payments OR travel costs OR opening hours OR residency entitlements OR confidentiality OR stigma OR gender sensitivity OR use of services OR undiagnosed cases OR diagnostic accuracy OR evidence-based treatment OR treatment adherence OR impoverishing expenditures OR catastrophic expenditures</td>
</tr>
<tr>
<td>Barriers (new)</td>
<td>Capacity OR health care infrastructure OR political OR political barrier OR institutional OR institutional barrier OR quality facilities OR basic OR amenities OR health insurance OR uninsured OR private insurance OR affordable OR affordable care OR discrimination OR residency entitlement OR demographic barrier OR demographic OR legal barrier OR legal OR legislation OR migrant entitlement OR asylum seeker OR refugee OR regulation OR vital registration OR socio-economic barrier OR socio-economic OR economic barrier OR economic OR employment OR unemployed OR informal work OR informal worker OR patient income OR income OR wealth OR household OR poverty OR community infrastructure OR poor housing OR housing OR home facilities OR facilities OR vulnerable OR disadvantaged OR deprived OR homeless OR debts OR income and poverty OR community and household infrastructure OR social protection OR social employment OR knowledge barrier OR knowledge OR educational barrier OR education OR educational level OR educational attainment OR poor child development OR early child development OR child development OR vocational OR occupation OR age OR health literacy OR acceptance OR health behavior OR belief OR attitude OR trust OR confidentiality OR culture OR stigma OR social barrier OR social OR gender OR gender discrimination OR gender barrier OR sex OR sex discrimination OR sex barrier OR cultural barrier OR cultural OR religion OR religious barrier OR religious OR ethnic barrier OR ethnic OR migrant OR migrant barrier OR socio-cultural barrier OR socio-cultural OR discrimination OR language OR communication OR translator OR intercultural OR ethnicity OR marital status OR teenage OR patient protection OR geographic location OR non availability transportation OR opportunity costs seeking care</td>
</tr>
</tbody>
</table>
Using the original search terms, no relevant documents were found, probably due to the fact that dividing the original keywords into blocks caused too few search terms to be in each block. When broadening the topic keywords, however, the amount of hits increased dramatically, far beyond the number reached using the original criteria (44718 compared to only 472); when preventable outcomes search terms (some of them included in original search as barriers, accounting for effective access) were added, the number was cut down significantly.

**Annex 3. Selected results from literature review**

**A. General health services (n=24)**

ALLERTON, L. & EMERSON, E. (2012) British adults with chronic health conditions or impairments face significant barriers to accessing health services. *Public health*, 126, 920-927.


MITCHELL & ANDERSSON. (2011) (see reference list)


ORTAYLI & MALARCHER. (2010) (see reference list)


**B. Maternal health (n=24)**


AXELSON, H., ET AL. (2012). (see reference list)


CHATTOPADHYAY, A. (2012) (see reference list)


Sidney et al. (2012) (see reference list)

Singh et al. (2012) (see reference list)


C. TB Treatment (n=18)


FIGUEIREDO ET AL. (2009) (see reference list)


XU ET AL. (2009) (see reference list)

ZHOU ET AL. (2012) (see reference list)

D. HIV/AIDS prevention (n=37)


GALEA, ET AL. (2011) (see reference list)


GRUSKIN, ET AL. (2013) (see reference list)

HEMBAH-HILEKAAN, ET AL. (2012) (see reference list)


JEAN, ET AL. (2012) (see reference list)


KINSLER, ET AL. (2009) (see reference list)


MANIRANKUNDA, (2009) (see reference list)

MASSARI, ET AL. (2011) (see reference list)

MBONYE, ET AL. (2010) (see reference list)


SASAKI, ET AL. (2010) (see reference list)


TORRONE ET AL. (2010) (see reference list)

### E. Diabetes treatment (n=18)

AYELE, K., ET AL. (2012) (see reference list)


FUKUNAGA, ET AL. (2011) (see reference list)


O’CONNOR, ET AL. (2013) (see reference list)


YAMASHITA & KART. (2011) (see reference list)

F. Depression treatment (n=20)


COVENTRY, ET AL. (2011) (see reference list)


PFEIFFER ET AL. (2011) (see reference list)


SUN ET AL. (2011) (see reference list)


G. Injuries treatment (n=15)


**H. Cervical cancer prevention (n=23)**


LEE, ET AL. (2011a) (see reference list)


PERCAC-LIMA ET AL. (2010) (see reference list)


REDWOOD-CAMPBELL ET AL. (2011) (see reference list)


**I. Tobacco use prevention (n=9)**


WALTER ET AL. (2010) (see reference list)
SOCIAL DETERMINANTS OF HEALTH

ACCESS TO POWER, MONEY AND RESOURCES AND THE CONDITIONS OF DAILY LIFE —
THE CIRCUMSTANCES IN WHICH PEOPLE ARE BORN, GROW, LIVE, WORK, AND AGE