

Health system performance assessment

57
Health Policy
Series

A framework for policy analysis

Edited by:

Irene Papanicolas

Dheepa Rajan

Marina Karanikolos

Agnes Soucat

Josep Figueras



This publication was produced with support from the Universal Health Coverage Partnership www.uhcpartnership.net (UHC Partnership), one of WHO's largest platforms for international cooperation on universal health coverage and primary health care. It is funded and supported by: Belgium, Canada, European Union, Germany, Luxembourg – Aid & Development, Ireland – Irish Aid, France – Ministère de l'Europe et des Affaires étrangères, Japan – Ministry of Health, Labour and Welfare, United Kingdom – Department for International Development, World Health Organization (WHO). The UHC Partnership helps deliver WHO's support and technical expertise in advancing universal health coverage with a primary health care approach in 115 countries, representing a population of at least three billion people.



The European Observatory on Health Systems and Policies supports and promotes evidence-based health policy-making through comprehensive and rigorous analysis of health systems in Europe. It brings together a wide range of policy-makers, academics and practitioners to analyse trends in health reform, drawing on experience from across Europe to illuminate policy issues.

The Observatory is a partnership, hosted by WHO/Europe, which includes other international organizations (the European Commission); national and regional governments (Austria, Belgium, Finland, Ireland, Norway, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the Veneto Region of Italy (with Agenas)); other health system organizations (the French National Union of Health Insurance Funds (UNCAM), the Health Foundation); and academia (the London School of Economics and Political Science (LSE) and the London School of Hygiene & Tropical Medicine (LSHTM)). The Observatory has a secretariat in Brussels and it has hubs in London (at LSE and LSHTM) and at the Berlin University of Technology.

Health system performance assessment

A framework
for policy analysis

EDITED BY

Irene Papanicolas

Dheepa Rajan

Marina Karanikolos

Agnes Soucat

Josep Figueras

Health system performance assessment: a framework for policy analysis / Irene Papanicolas, Dheepa Rajan, Marina Karanikolos, Agnes Soucat, Josep Figueras, editors

(Health Policy Series, No. 57)

ISBN 978-92-4-004247-6 (electronic version)

ISBN 978-92-4-004248-3 (print version)

© World Health Organization 2022

(acting as the host organization for, and secretariat of, the European Observatory on Health Systems and Policies)

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercialShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services.

The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization (<http://www.wipo.int/amc/en/mediation/rules/>).

Suggested citation. Papanicolas I, Rajan D, Karanikolos M, Soucat A, Figueras J, editors. Health system performance assessment: a framework for policy analysis. Geneva: World Health Organization; 2022 (Health Policy Series, No. 57). Licence: [CC BY-NC-SA 3.0 IGO](https://creativecommons.org/licenses/by-nc-sa/3.0/igo).

Cataloguing-in-Publication (CIP) data. CIP data are available at <http://apps.who.int/iris>.

Sales, rights and licensing. To purchase WHO publications, see <http://apps.who.int/bookorders>. To submit requests for commercial use and queries on rights and licensing, see <https://www.who.int/copyright>.

Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third party-owned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO and the European Observatory on Health Systems and Policies to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO nor the European Observatory on Health Systems and Policies be liable for damages arising from its use.

The views expressed by the editors do not necessarily represent the decisions or the stated policy of WHO nor the European Observatory on Health Systems and Policies or any of its partners.

Contents

List of boxes, figures, tables and appendices	vi
List of contributors	ix
Acknowledgements	x
List of abbreviations	xii
Chapter 1: Assessing health systems performance for UHC: rationale and approach	1
<i>Irene Papanicolas, Dheepa Rajan, Marina Karanikolos, Josep Figueras</i>	
1.1 Introduction	1
1.2 Health system frameworks and assessments: from labels to content	2
1.3 The Health Systems Performance Assessment Framework for Universal Health Coverage	3
1.4 Approach and structure of the volume	5
Chapter 2: Review of existing frameworks and tools	8
<i>Marina Karanikolos, Irene Papanicolas, Katja Rohrer</i>	
2.1 Introduction	8
2.2 Background: selection of frameworks and tools	10
2.3 How do we define a health system?	12
2.4 What are the factors that explain health system performance?	15
2.5 What are the health system's goals?	16
2.6 Assessing performance: how are factors that influence performance linked to the health system objectives?	19
2.7 Discussion and conclusions	22
Chapter 3: Working towards a common approach: the HSPA Framework for UHC	26
<i>Irene Papanicolas, Marina Karanikolos, Josep Figueras, Dheepa Rajan</i>	
3.1 Introduction	26
3.2 Introducing key concepts	27

iv Health system performance assessment: a framework for policy analysis

3.3	The HSPA Framework for UHC	33
3.4	Conclusions	38
Chapter 4: Governance		43
<i>Dheepa Rajan, Kira Koch, Katja Rohrer, Agnes Soucat</i>		
4.1	Introduction	43
4.2	Understanding the governance function	44
4.3	Sub-functions	49
4.4	Assessing the performance of the governance function	55
4.5	Conclusions	69
Chapter 5: Resource generation		78
<i>Dheepa Rajan, Katja Rohrer, Kira Koch, Teena Kunjumen, Khassoum Diallo, Adriana Velazquez Berumen, Claudia Nannei, Judith Sprunken</i>		
5.1	Introduction	78
5.2	Understanding the resource generation function	80
5.3	Sub-functions	82
5.4	Assessing the performance of the resource generation function	88
5.5	Conclusions	104
Chapter 6: Financing		131
<i>Jonathan Cylus, Julia Sallaku, Matthew Jowett</i>		
6.1	Introduction	131
6.2	Understanding the financing function	132
6.3	Sub-functions	134
6.4	Assessing the performance of the financing function	142
6.5	Conclusions	156
Chapter 7: Service delivery		160
<i>Ellen Nolte, Marina Karanikolos, Bernd Rechel</i>		
7.1	Introduction	160
7.2	Understanding the service delivery function	161
7.3	Sub-functions	164
7.4	Assessing the performance of the service delivery function	167
7.5	Conclusions	185

Chapter 8: A framework for Health System Performance Assessment 197

*Irene Papanicolas, Marina Karanikolos, Dheepa Rajan, Katja Rohrer,
Jonathan Cylus, Josep Figueras*

8.1	Introduction	197
8.2	The HSPA Framework for UHC	198
8.3	Applications of the HSPA Framework for UHC: case studies	203
8.4	Conclusions	220

Chapter 9: Conclusion 225

Dheepa Rajan, Irene Papanicolas, Marina Karanikolos, Josep Figueras

9.1	Introduction	225
9.2	The four health system functions: a recap	226
9.3	Health system performance: intermediate objectives and final goals	230
9.4	Conclusions and future directions	231

List of boxes, figures, tables and appendices

Boxes

Box 2.1	Key health system frameworks	10
Box 2.2	Health system definitions	13
Box 4.1	Stewardship and governance	43
Box 4.2	Insights into the literature on governance frameworks	47
Box 5.1	Sub-functions of resource generation	78
Box 5.2	How do information and communication technology and transport/logistics fit into the infrastructure and medical equipment sub-function?	86
Box 5.3	Global efforts to standardize information on health infrastructure and medical equipment	97
Box 5.4	Professional self-regulation	103
Box 6.1	Health financing progress matrix information	151
Box 7.1	Service delivery in the HSA tools	167
Box 7.2	Dimensions of health services and health systems	169
Box 7.3	Expanding access to primary care services in Brazil	172
Box 7.4	Equity in antenatal care quality	172
Box 7.5	Measuring efficiency in service delivery: antibiotic use	174
Box 8.1	Glossary of key terms	200

Figures

Fig. 2.1	Relationship between functions and objectives of a health system	20
Fig. 3.1	The HSPA Framework for UHC – an overview	35
Fig. 4.1	Governance and sub-functions	45
Fig. 4.2	Assessing governance	56
Fig. 4.3	Governance actor triangle	58
Fig. 5.1	Resource generation sub-functions	79
Fig. 5.2	Human versus physical resources	82
Fig. 5.3	Assessing resource generation	89

Fig. 6.1	Health financing framework (Kutzin)	133
Fig. 6.2	Financing sub-functions	135
Fig. 6.3	UHC cube	140
Fig. 6.4	Assessing Financing	143
Fig. 6.5	How does population-ageing affect revenue generation for health? Japan case study	145
Fig. 6.6	Equity of financing using Kakwani indexes, Estonia	147
Fig. 6.7	Per person spending by scheme, Thailand	149
Fig. 7.1	Service delivery sub-functions	162
Fig. 7.2	Health service provision (Adams et al)	163
Fig. 7.3	Assessing service delivery	168
Fig. 7.4	Service provision assessment framework (Adams et al)	181
Fig. 7.A1	Categorization of service delivery according to the purpose of health care goods and services	193
Fig. 8.1	The HSPA Framework for UHC	199
Fig. 8.2	Amenable mortality in Estonia, Finland and Lithuania 2000–2016	211
Fig. 8.3	Amenable mortality versus current health expenditure, EU-28	213

Tables

Table 2.1	Key health system assessment tools	11
Table 2.2	Factors that influence health system performance	17
Table 2.3	Health system goals	18
Table 4.1	Governance sub-functions and definitions of governance	44
Table 4.2	Cross-walk between literature-based converging governance topics & the HSPA Framework for UHC governance sub-functions	48
Table 4.3	Legislation and regulation within governance frameworks and HSA tools	67
Table 5.1	Health infrastructure: key components	85
Table 5.2	Indicative measures for health workforce	92
Table 5.3	Indicative measures for infrastructure and medical equipment	95
Table 5.4	Indicative measures for pharmaceuticals and other consumables	99
Table 5.5	Indicative measures for the governance of resource generation	105
Table 6.1	Examples of pooling organizations and mechanisms for allocating to or among them	137
Table 6.2	Measures from National Health Accounts	144
Table 6.3	Indicative measures for equitable revenue collection	146
Table 6.4	Indicative measures for pooling	148
Table 6.5	Measures for pooling in the Health Finance Progress Matrix	148
Table 6.6	Indicative measures for purchasing	150

Table 6.7	Measures for purchasing and provider payment in the Health Financing Progress Matrix	152
Table 6.8	Indicative measures for coverage	155
Table 7.1	Indicative measures for public health	175
Table 7.2	Indicative measures for primary care	178
Table 7.3	Indicative measures for specialist care	180
Table 7.4	Indicative measures for governance of service delivery	185
Table 7.A1	Example of delivery platforms for certain health services	195
Table 8.1	COVID-19 shock as applied to the health system functions	219
Table 8.2	Resilience of health system goals to COVID-19	221
Table 9.1	Five health system goals	230

Appendices

Appendix 4.1	Overview of key governance frameworks	75
Appendix 5.1	Details on indicative measures for the resource generation sub-function assessment areas	108
Appendix 7.1	A brief overview of approaches to categorizing service delivery	193

List of contributors

- Jonathan Cylus**, European Observatory on Health Systems and Policies, London
- Khassoum Diallo**, Health Workforce Department, World Health Organization, Geneva
- Josep Figueras**, European Observatory on Health Systems and Policies, Brussels
- Matthew Jowett**, Department for Health Systems Governance and Financing, World Health Organization, Geneva
- Marina Karanikolos**, European Observatory on Health Systems and Policies, London
- Kira Koch**, Department for Health Systems Governance and Financing, World Health Organization, Geneva
- Teena Kunjumen**, Health Workforce Department, World Health Organization, Geneva
- Claudia Nannei**, Department for Essential Medicines and Health Products, World Health Organization, Geneva
- Ellen Nolte**, Department of Health Services Research and Policy, London School of Hygiene and Tropical Medicine, London
- Irene Papanicolas**, Department of Health Policy, London School of Economics and Political Science, London
- Dheepa Rajan**, Department for Health Systems Governance and Financing, World Health Organization, Geneva
- Bernd Rechel**, European Observatory on Health Systems and Policies, London
- Katja Rohrer**, Department for Health Systems Governance and Financing, World Health Organization, Geneva
- Julia Sallaku**, International Health Partnership for UHC2030, Geneva
- Agnes Soucat**, Department for Health Systems Governance and Financing, World Health Organization, Geneva
- Judith Sprunken**, Department for Essential Medicines and Health Products, World Health Organization, Geneva
- Adriana Velazquez Berumen**, Department for Essential Medicines and Health Products, World Health Organization, Geneva

Acknowledgements

This volume is co-produced by the World Health Organization and the European Observatory on Health Systems and Policies. We are immensely grateful to all the authors for their hard work and enthusiasm in this study.

In addition to the authors (see List of Contributors), we gratefully acknowledge the contributions of many individuals and organizations.

Technical support and guidance were provided by the Health Systems Assessment Technical Working Group (TWG): Hala Abou Taleb, Alistair Robb, Emmanuel Ankrah, Banu Ayar, Emmanuella M. Baguma, Narasimhan Balaji Lakshmi, Ernesto Bascolo, Karl Blanchet, Jodi Charles, Ogochukwu Chukwujekwu, Altea Cico, Catherine Connor, Narayanan Devadasan, Philip Domanski, James Duah, Martin Ekeke Monono, Luke Anthony Elich, Sylvain Giraud, Andre Griekspoor, Yahya Ipuge, Elke Jakubowski, Chris James, Jean Kagubare, Hyppolite Kalambay, Lucien Kouakou, Taavi Lai, Nicholas Leydon, Benoit van Maele, Awad Mataria, Pascal Meeus, Ange Mibindzou Mouelet, Péter Mihalicza, Juliet Nabyonga, Thomas O’Connell, Valeria de Oliviera Cruz, Kathy O’Neill, Toomas Palu, Christopher Paquet, Gabriele Pastorino, Walaiporn Patcharanarumol, Denis Porignon, Adham Rashad Ismail Abdel Moneim, Franz von Roenne, Omar Sam, Jürgen Schefflein, Katja Schemionek, Gerard Schmets, George Shakarishvili, Kanitsorn Sumriddetchkajorn, Nick Tomlinson, Vaifee Tulay, Prosper Tumusiime, Chigozie Uneke, Jeremy Veillard, Shaheda Viriyathorn, Nicola Wardrop, David Wendt, Esther Werling, Mohamed Lamine Yansané.

Valuable comments were provided by participants at nine TWG meetings (both online and in-person) between August 2017 and June 2020. In addition to the TWG members, meeting participants include: Csongor Bajnoczki, Shannon Berkley, Sarah Brousse, Craig Bruggess, Aurelie de Chatelet, David Clarke, Delanyo Yao Tsidi Dovlo, Godelieve van Heteren, Anne Dominique Israel, Annick Jeantet, Mathew Jowett, Mwenya Kasonde, Roy Magali, Jeff Markuns, Laure Mercereau, Clementine Mürer, Julius Murke, Irene Mwonga, Naomi Nathan, Aurelie Paviza, Shamim Rahman, Hannah Ratcliffe, Archana

Shah, Abheet Solomon, Beth Tritter, Pablo Esteban Vega Rojas, Wendy Venter, Mazvita Zanamwe.

Overall UHC2030 guidance was provided by Marjolaine Nicod and Richard Gregory.

We thank Csongor Bajnoczki for research support for Chapters 4 and 6. We also gratefully acknowledge Ramona Ludolph and Nathalie Roebbel for their contribution to the 'housing and health' section in Chapter 8.

We thank reviewers Dimitra Panteli, Amit Prasad and Taavi Lai for providing their valuable comments.

List of abbreviations

COVID-19	coronavirus disease 2019
GDP	gross domestic product
HAI	Health Action International
HFBM	Health Financing Progress Matrix
HiT	Health Systems in Transition
HSA	health system assessment
HSPA	health system performance assessment
NHPSP	national health policy/strategy/plan
NHWA	National Health Workforce Accounts
OECD	Organization for Economic Cooperation and Development
OOP	out-of-pocket
PFM	public financial management
PHCPI	Primary Health Care Performance Initiative
TWG	Technical Working Group
UHC	universal health coverage
WHO	World Health Organization

Assessing health systems performance for UHC: Rationale and Approach

Irene Papanicolas, Dheepa Rajan, Marina Karanikolos, Josep Figueras

1.1 Introduction

The Sustainable Development Goals adopted by 193 countries at the 2015 UN General Assembly, as well as the Political Declaration on universal health coverage (UHC) adopted in 2019 (UN, 2019), have affirmed that health system strengthening is the principal means to achieving the shared goal of UHC. The importance of health systems strengthening has been underlined by recent events such as the coronavirus disease 2019 (COVID-19) pandemic (WHO, 2020), which highlighted the role of the health system in protecting the population. For policy-makers to effectively focus their health system strengthening efforts and see them translate into improvements in health system performance, they need to be able to determine which areas to prioritize and direct resources towards. In this context, regular health systems monitoring, appraisal and assessment take on a great significance, especially in view of gaining a solid understanding of key strengths and shortcomings.

Over the years, assessments of health systems and their performance have been given different labels, including “health system profile”, “health sector situation analysis”, “health system monitoring”, “health system analysis”, “health system assessment” and “health systems performance assessment” (European Observatory, 2010; WHO, 2010; Berman & Bitran, 2011; Wendt, 2012; WHO Regional Office, 2012; Rajan, 2016; USAID, 2018). Similarly, the description of individual assessments conducted is wide ranging and includes terms such as tool, approach, exercise and instrument. The diversity of descriptors is both a symptom and a cause of the confusion surrounding the precise purpose, scope and content of these activities.

In part, the vast terminology reflects the different, yet overlapping, objectives of assessment efforts, which include describing the health system's structures, evaluating distinct health system functions, measuring health system performance and supporting health reform efforts. However, there is also a lack of consistency in the use of terminology. The lack of consistency and comparability can place a huge burden on policy-makers who may be presented with findings from several assessments, conducted by different actors, using different methodologies, and no accompanying explanation of how to interpret them.

Indeed, one of the motivations for the UHC2030 – a coalition of countries, global health organizations, philanthropic foundations and civil society that was launched in 2016 – was to address this diversity and lack of a coordinated approach to activities to strengthen global health systems (UHC2030, 2020). UHC2030's harmonization and alignment mandate produced the UHC2030 Technical Working Group (TWG) on Health System Assessment (HSA). The TWG's objectives were to study the different HSA approaches, compare their relative strengths and weaknesses and, ultimately, draw on this experience to propose a Health System Performance Assessment (HSPA) approach for UHC. Acknowledging the confusion in terminology, the TWG, and this volume, employs the term "Health System Assessment", HSA, in a generic way to mean a system-wide exercise whose aim it is to appraise the health system as a whole*.

The aim of this edited volume is to outline a conceptual and practical approach to link existing assessments, such that the information collected across many different HSAs can be used to inform a common understanding of health system performance, or the attainment of the health system's objectives.

1.2 Health system frameworks and assessments: from labels to content

Over the last couple of decades, several different conceptual health system frameworks have been produced to help promote an understanding of the health system (Murray & Frenk, 2000; Arah et al., 2003; Aday et al., 2004; Roberts et al., 2004; Commonwealth Fund, 2006; Atun, 2012; Kruk et al., 2018), many have also served as the basis of efforts to measure health system performance. In parallel, several HSA tools have been created with the aim of providing a system-wide and comprehensive analysis of relevant health systems areas, such as health financing, governance, human resources for health,

* The definition of health systems assessment HSA adopted in this volume is based on the TWG's use of the term and should not be viewed as normative but rather as a working definition for the purposes of the study.

health programmes and cross-cutting topics (European Observatory, 2010; WHO, 2010; Berman & Bitran, 2011; Wendt, 2012; Rajan, 2016; USAID, 2018). All of these efforts aim to provide a common starting point – a clear and simple conceptualization of the health system – from which its users can make further progress to achieve their health policy goals.

Although there is a great deal of overlap across these efforts, as detailed in Chapter 2, which affirms a consensus on the basics of health system design, there are important differences in the level of prominence that different assessments to parts of the health system have and the amount of emphasis they place on HSPA. One way to think of the range of HSAs is as rough continuum. At one end, there exist a range of HSA tools that describe the current structure of the health system through the health system functions or building blocks, or evaluate these structures in light of health system reform (WHO, 2007). At the other end, there are tools that focus on evaluating how well the system is performing overall, by examining the extent to which health systems are meeting a set of defined objectives. These approaches usually rely more on quantitative measures and analytic methods, often referred to as HSPA. Ultimately, health system strengthening relies on an understanding of both ends of the continuum, and how they link together. Such an approach can help to clarify the relationship between the performance of the health system functions and the performance of the health system. For example: How does the pooling of resources influence access, quality and financial protection? How does service delivery influence how people-centred and efficient the health system is? And how resilient are health system functions and health system outcomes to external shocks?

1.3 The Health Systems Performance Assessment Framework for Universal Health Coverage

In an effort to bridge the gap between HSA and HSPA approaches, and address the UHC2030 TWG's mandate to harmonize and align existing assessment approaches we use this volume to showcase the development of a new *Health System Performance Assessment framework for Universal Health Coverage*. The HSPA Framework for UHC presented in this volume is informed by an analysis of existing health system frameworks, HSA and HSPA tools, guidance and technical contributions from the TWG, the authors' original research and a wide range of contributions from experts.

This edited volume will build upon the seminal existing health system frameworks that are already in place. The contribution will be to outline where the key discrepancies

4 Health system performance assessment: a framework for policy analysis

exist across HSA and HSPA approaches, and to suggest a new overarching framework that illustrates the relationship between the performance of the health system functions and the intermediate objectives and final goals of the health system. In doing this we hope to provide policy-makers with the HSPA Framework for UHC, a practical tool that will allow them to measure the performance health system functions and outcomes, outlining proposed assessment areas linked to routinely collected indicators. This tool will provide policy-makers and analysts with a starting point from which they can conceptually, and practically, link health system functions to key health system outcomes, and thus a common approach to HSPA.

The HSPA Framework for UHC is designed to provide a systems approach to enable the reuse of HSA and HSPA information from existing tools for health system performance. This brings performance assessment to the heart of efforts to strengthen health systems. Placing “for UHC” in the title of the framework supports this logic and affirms health systems strengthening as the principal means of achieving UHC, thereby underlining the need for regular evaluations of health systems performance. As a result, the HSPA Framework for UHC underpins countries’ efforts to strengthen health systems with the overarching vision of UHC in mind.

The HSPA Framework for UHC proposed in this edited volume has five key features, which are outlined throughout the course of the volume:

- it adopts an explicit health system definition and scope with clear boundaries
- it sets out the main health system goals and outcomes
- it identifies and describes the health system’s functions
- it provides a framework for assessing the performance of each function
- it outlines the relationship the performance of each function to the attainment of health system goals and outcomes.

The HSPA Framework for UHC and its key features are set out in detail in Chapter 3. The definition, scope and boundaries of the health system follow Murray & Frenk’s definition: “health actions...whose primary intent is to improve or maintain health” (WHO, 2000). The HSPA Framework for UHC, therefore, aims to assess actions only within the health system performance while acknowledging – but not explicitly assessing – the substantial impact on health of a range of socioeconomic determinants that lie outside the boundaries of the health system. In the same way, the framework shows, but does not aim to assess, the impact of contextual factors on the health system and

the health system's impact on broader societal goals. From a practical policy perspective, focusing on actions that lie within the health system allows this framework to be used as an instrument to identify accountable parties or institutions. These actors can then be linked to the performance of specific components of the health system and, more importantly, to mechanisms for improvement.

Outlining the health system's goals is essential to any assessment of performance. In line with other health system frameworks, the HSPA Framework for UHC assesses the performance of a health system by the extent to which it achieves its intermediate objectives and final goals. Across international frameworks there is some consensus on the broad objectives of the health system, such as: health improvement, system responsiveness, equity, fair financing and efficiency. However, there are still broad differences around what constitute health system responsibilities. This volume will focus on considering what the key health system outcomes are in light of past work in this area.

Building upon a review of key HSA tools, the HSPA Framework for UHC identifies health system functions as a starting point for HSPA. The rationale for placing functions at the core of performance is that this reflects the dynamic nature of a health system (what health systems do) and its processes. The HSPA Framework for UHC aims to further our understanding of the role that health system functions play in health system performance by focusing on two separate but related questions: First, how can we assess the performance of the functions? And second how can performance of the functions be linked to health system performance? To do so, the volume will lay out the priority areas for assessment for each health system function and outline an initial set of indicative measures corresponding to these assessment areas, drawing from indicators commonly collected in other HSA and HSPA activities. The HSPA Framework for UHC will showcase these assessment areas, and illustrate the links between health system function performance and the attainment of the health system goals.

1.4 Approach and structure of the volume

In this edited volume, we share the process of the development of a joint approach to HSPA. The following two chapters reflect on the key existing HSA tools and propose a common and practical framework that intends to link the descriptive analysis with evaluation, focusing on health system outcomes. More specifically, Chapter 2 provides a review of existing health system frameworks and HSA tools. In doing so, this volume draws and builds upon previous conceptual work and HSA approaches. These insights

are then used to inform the development of the HSPA Framework for UHC, which is presented and outlined in Chapter 3.

The second part of the volume consists of four chapters that outline the main health system functions, which serve as the basis of the HSPA Framework for UHC: Governance (Chapter 4), Resource Generation (Chapter 5), Financing (Chapter 6) and Service Delivery (Chapter 7). Each chapter outlines the responsibilities for the corresponding function; a framework to assess the performance of that function; and its links with the health system's intermediate and overall goals. Moreover, the chapters provide a range of assessment areas and corresponding indicative performance measures for each function, drawn from routinely collected data and existing HSA tools.

Finally, Chapter 8 lays out the HSPA Framework for UHC detailing the connections between the intermediate and final goals and the performance of the health system functions, thus providing policy-makers with actionable tools to assess performance. Chapter 9 brings together the key takeaways from this volume, how this framework should and should not be used, and outlines remaining gaps and next steps.

References

- Aday LA et al. (1999). A framework for assessing the effectiveness, efficiency and equity of behavioural healthcare. *American Journal for Managed Care*, 5 Spec. no. SP25–44.
- Arah OA et al. (2003). Conceptual frameworks for health systems performance: a quest for effectiveness, quality, and improvement. *International Journal for Quality in Health Care*, 15(5):377–398.
- Atun R (2012). Health Systems, systems thinking and innovation. *Health Policy and Planning*, 27(4):iv4–iv8.
- Berman P, Bitran R (2011). *Health Systems Analysis for Better Health System Strengthening. Health, Nutrition, and Population*. Discussion paper Washington, D.C., World Bank Group.
- Commonwealth Fund (2006). 2006 Annual Report. (https://www.commonwealth-fund.org/sites/default/files/2018-06/AR_2006_complete_report.pdf, accessed 9 September 2021)
- European Observatory on Health Systems and Policies (2010). *Health Systems in Transition series*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Kruk ME et al. (2018). High-quality health systems in the Sustainable Development Goals era: time for a revolution. *The Lancet Global Health*, 6.11:e1196–e1252.

- Murray CJL, Frenk J (2000) A framework for assessing the performance of health systems. *Bulletin of the World Health Organization*, 78(6):717–730.
- Rajan D. (2016). Chapter 3: Situation analysis of the health sector. In: Schmetts D et al., eds. *World Health Organization. Strategizing national health in the 21st century: a handbook*. Geneva, World Health Organization; 2016:chapter 3.
- Roberts M et al. (2004). *Getting Health Reform Right. A Guide to Improving Performance and Equity*. New York, Oxford University Press.
- UHC2030 (2020) Our mission. (<https://www.uhc2030.org/our-mission/>, accessed 25 August 2020).
- UN (2019). Political Declaration of the High-level Meeting on Universal Health Coverage “Universal health coverage: moving together to build a healthier world” (<https://www.un.org/pga/73/wp-content/uploads/sites/53/2019/07/FINAL-draft-UHC-Political-Declaration.pdf>, accessed 25 August 2020).
- USAID (2018). *The Health System Assessment Approach: A How-To Manual*. Version 3.0. Washington, D.C., USAID.
- Wendt D (2012). *Health System Rapid Diagnostic Tool. Framework, operational Guide, and metrics to measure the strength of priority health system functions*. Durham, NC, Family Health International.
- WHO (2000) *World Health Report 2000. Health systems: improving performance*. Geneva, World Health Organization.
- WHO (2007) *Everybody’s business: Strengthening health systems to improve health outcomes. WHO’s framework for action*. Geneva, World Health Organization Document Production Services.
- WHO (2010). *Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies*. Geneva, World Health Organization.
- WHO (2020) Strengthening the health system response to COVID-19: Recommendations for the WHO European Region. Policy brief. Copenhagen: WHO Regional Office for Europe; 2020. Licence: CC BY-NC-SA 3.0 IGO (<https://apps.who.int/iris/bitstream/handle/10665/333072/WHO-EURO-2020-806-40541-54465-eng.pdf?sequence=1&isAllowed=y>, accessed 25 August 2020).
- WHO Regional Office for Europe. (2012). Pathways to health system performance assessment. A manual to conducting health system performance assessment at national or sub-national level. Copenhagen; 2012.

Review of existing frameworks and tools

Marina Karanikolos, Irene Papanicolas, Katja Rohrer

2.1 Introduction

Over the years HSAs and HSPAs have been used to assist policy-makers with health reform efforts, priority-setting and resource allocation. Although all of these efforts are geared towards health system strengthening, they are varied with regards to their objective, scope and focus. Notably, some assessments are developed to serve as the basis of HSPA and largely apply quantitative methods to examine whether a health system is meeting a defined set of objectives, such as health improvement, whereas others are more descriptive and focus on providing detailed summaries of health system structures and reform. To truly identify the opportunities for health system strengthening requires having both a good understanding of the state of health system functions and reforms in a health system, as well as information on its attainment of key objectives (for more on this see Chapter 1). The aim of the HSPA Framework for UHC, introduced in this edited volume, is to propose a practical tool that can be used to link the information collected by existing HSA and HSPA efforts to provide a more nuanced understanding of health systems performance. Rather than building such a tool anew, the proposed framework seeks to take stock of previous health system frameworks and assessment tools to build upon existing concepts and approaches.

Several health system frameworks and HSAs have been created and used to inform health system strengthening efforts over the past 20 years. Previous reviews have shown that across them there are areas of similarity and differences, which may be expected given their different overarching objectives (Papanicolas & Smith, 2013; UHC2030, 2020). To avoid duplicating existing efforts, and to ensure that our approach builds upon areas of consensus as much as possible, this chapter examines a set of health system frameworks used to inform HSPA and a set of HSA tools to identify the main areas of consensus and debate around four key areas:

- What is a health system?
- What are the factors that influence health system performance?
- What are the health system's goals?
- How are the factors that influence performance linked to the health system objectives?

There is some consensus around the key activities of the health system, but there are different approaches to considering the extent to which activities such as health promotion or intersectoral action fall within the boundaries of the health system (Papanicolas, 2014). Outlining a clear health system boundary when conducting HSPA is not only important for accountability purposes, as it will determine which actors should be held accountable for the health system's performance, but to determine which indicators are suitable to inform the exercise itself.

Most existing health system frameworks and HSA tools provide some description of the factors that influence health system performance, and many adopt the taxonomy and description introduced by the World Health Organization (WHO) of health system functions (WHO, 2000) or building blocks (WHO, 2007). Often these factors are identified as distinct organizational components of the health system. This chapter will examine which factors are identified by different assessments and how much consensus there is around a core set of organizational components to use in the HSPA Framework for UHC.

Outlining the health system goals is also crucial for any HSPA activity, and indeed any conceptual framework. Across health system frameworks there is some consensus on the broad goals of the health system, such as health improvement, people centredness, equity, fair financing and efficiency (Papanicolas, 2014). However, there are still broad differences, particularly with regard to some of the considerations of which of these are intermediate objectives or final health system goals, as well as the terminology used to describe them. This chapter will examine the consistency across key frameworks and assessment tools to inform the selection of health system goals for the HSPA Framework for UHC.

The fundamental objective of the HSPA Framework for UHC is to serve as a tool that can be used to harmonize existing HSA and HSPA efforts, by linking what health systems do to health system performance. This chapter will explore the extent to which this has been done, and how, in other tools and health system frameworks to inform that effort.

2.2 Background: selection of frameworks and tools

Before reviewing the similarities and differences of the various health system frameworks and HSA tools, it is important to consider differences in their objectives. Health system frameworks can be thought of as conceptual tools that define, describe and explain the health system's objectives, and the factors that influence health system performance (Box 2.1); whereas HSA tools are instruments for data collection, for various different aims, within and across health systems (UHC2030, 2020). These aims might include describing the health system, health system benchmarking, improving health system performance or guiding health system reform. Often health system frameworks serve as a starting point for the development of more specific HSPA activities, for example the Murray & Frenk (2000) Health systems Performance Framework, which served as the basis for the 2000 World Health Report.

For the purposes of this chapter, we decided to review a set of key health system frameworks that have served as the starting point for data collection efforts linked to HSPA or benchmarking, across countries (Box 2.1). As a starting point we looked at the health system frameworks reviewed in Papanicolas & Smith (2013), and from these selected the ones that have been explicitly linked to data collection. We added the *High Quality Health System Framework*, introduced in Kruk et al. (2018) because this met our criteria but was published after the 2013 review. The HSA tools selected, and summarized in Table 2.1 were identified from a previous review by the UHC2030 Technical Working Group, and selected based on two criteria: (1) they consider a formal assessment methodology, including a framework, to analyse the performance of the health system and communicate its results; and (2) they assess systems elements critically, and from a systems perspective (UHC2030, 2020).

Box 2.1 *Key health system frameworks*

- Health Systems Performance Framework (Murray & Frenk, 2000)
- WHO Building Blocks Framework (WHO, 2007)
- Control Knobs Framework (Roberts et al. 2008)
- OECD Health Care Quality Indicators Framework (Arah et al., 2006)
- HQSS High-Quality Health System Framework (Kruk et al., 2018)

Table 2.1 *Key health system assessment tools*

Name of tool	Agency (year)	Main objective (as per tool documentation)	Level(s) of analysis	Primary target audience
Health Systems in Transition (HiT)	European Observatory (2019)	To inform the planning process on needs and gaps in health systems	National level	Policy-makers and analysts in the development of health systems in Europe
Health System Assessment Approach: A How-To Manual	USAID (2018)	To develop concrete recommendations for reform and policy options	National level, can be adapted to sub-national levels	Ministry of Health, international partners
Health System Performance Assessment	WHO EURO (2012)	To support or supplement a situation analysis to identify policy options or defining general recommendations	National level, can be adapted to sub-national level	Ministries of Health in the European Region
Health System Analysis for better health system strengthening	World Bank (Berman & Bitran, 2011)	To support the development of policies and strategies to improve performance	National level, can be adapted to sub-national levels	Ministry of Health, international partners
Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies	WHO (2010)	To support evidence-based decision-making	National level, can be adapted to sub-national levels	Ministry of Health, international partners
Situation analysis of the Health Sector	WHO (Rajan, 2016)	To inform the development of a national plan/strategy	National level, can be adapted to sub-national levels	Ministries of Health
Health System Rapid Diagnostic Tool	FHI 360 (Wendt, 2012)	To support the design of a health system strengthening strategy	Sub-national level	"FHI 360" country offices

Source: Authors' compilation.

The overall rationale and purpose of the different HSA tools reviewed are outlined in Table 2.1. The tools are listed in terms of the level of analysis they cover, which is mostly national with the flexibility to be used for sub-national assessment. The overall objective of the tools is similar: identifying and assessing the strengths and weaknesses of the health system. However, differences can be found with regards to their more specific objectives, which range from promoting health care reform, identifying gaps and needs for planning, and identifying broad strategies for health system strengthening or improvement. For example, tools such as the *HSAA Manual* by USAID and diagnostic tool by FHI 360 aim to identify recommendations for specific health system challenges. Whereas others, such as *Health Systems in Transition (HiT)* by the European Observatory and *Monitoring the building blocks of health systems* by WHO HQ, are

descriptive reviews that seek to outline key strengths and weaknesses of the organization of a health system. In the case of the HiT, a chapter within it is devoted specifically to the performance of the health system.

Almost all the HSA tools selected focus on a national description of the health system in order to develop national and regional recommendations. As such, their target audience is mainly the Ministry of Health and/or international stakeholders. In most cases, the process of conducting the assessment is generally as important as the technical aspects of that assessment. As a result, many important similarities and differences – such as when to choose indicators, or how to map out system weaknesses – exist at operational level. The tools also differ in regard to how prescriptive they are about how to carry out a health system assessment. Some list each step of the assessment process in detail (*HSA manual* by USAID, rapid diagnostic tool by FHI 360), whereas others recommend possible steps (Situation Analysis by WHO, Health System Assessment by World Bank).

2.3 How do we define a health system?

To measure the performance of a health system, it must first be defined as a clear entity. This requires a description of the health system and a clear definition of its boundaries. The degree to which the health system actors can be held responsible for influencing the final health system goals depends on how narrowly, or broadly, the health system boundaries are set. As a result, this decision has important implications for HSPA activities. For example, a broad health system boundary – one that encompasses all public health, health promotion activities and the effects of the social determinants of health – may provide a better representation of all factors that influence health system outcomes. On the other hand, it has the potential to limit the tool’s ability to identify the ways stakeholders with direct involvement in the health system can improve performance. By reducing the health system boundaries to health care alone, an assessment exercise can more readily attribute performance to health system stakeholders. However, this runs the risk of excluding some factors – such as education or employment – that have a significant impact on health system goals.

As demonstrated by the review of health system definitions in Box 2.2, there are key differences across the assessments reviewed. In particular, these reflect different understandings of health system boundaries, and the responsibilities that lie within them. Many of the assessments reviewed, adopt the WHO 2000 definition of a health system (Box 2.2): “The resources, actors and institutions related to the financing, regulation

and provision of health actions, where health actions are any set of activities whose primary intent is to improve or maintain health” (Murray & Frenk, 2000; WHO, 2000). By limiting the health system to actions whose primary intent is health improvement, this definition provides an operational definition of health system boundaries and the stakeholders and institutions with a remit to improve health. There may be ambiguities around particular activities, but these decisions can be made consistently across assessment tools because they are applied to different health systems.

The assessments that do not adopt the World Health Report definition tend to provide their own definition and use a similarly integrative approach, for example these include the definition applied by the *HiT*, *The Health System Analysis* and *The Situation Analysis of the Health Sector*. These definitions include a multitude of stakeholders and activities within the remit of the health system, which are linked to the overall purpose of promoting, restoring and maintaining health (Box 2.2). There are different definitions of the health system boundaries, particularly around public health and health promotion. To a lesser extent, there are also differences around the degree to which the social determinants of health, such as income and education, are included as part of the health system. For example, social determinants are explicitly included in the definition outlined by *The Situation Analysis of the Health Sector*, but are not encompassed in the WHO 2000 definition.

Box 2.2 *Health system definitions*

Health Systems Performance Framework

“The resources, actors and institutions related to the financing, regulation and provision of health actions. Where health actions are any set of activities whose primary intent is to improve or maintain health.”

WHO Building Blocks Framework

“A health system consists of all the organizations, institutions, resources and people whose primary purpose is to improve health.”

Control Knobs Framework

“A set of relationships where the structural components (means) and their interactions are associated and connected to the goals the system desires to achieve (ends).”

OECD Health Care Quality Indicators Framework

“A health system includes all activities and structures whose primary purpose is to influence health in its broadest sense (in keeping with the WHO’s definition). Health care refers to the combined functioning of public health and personal health care services.”

HQSS High-Quality Health System Framework

Adopt WHO (2000) definition: “The resources, actors and institutions related to the financing, regulation and provision of health actions. Where health actions are any set of activities whose primary intent is to improve or maintain health.”

Health System Assessment Approach: A How-To Manual (USAID)

“Health system as consisting of all organizations, people and actions whose primary intent is to promote, restore or maintain health” (WHO, 2000).

Health System Rapid Diagnostic Tool (FHI 360)

Health system is not defined.

Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies (WHO):

“A health system consists of all the organizations, institutions, resources and people whose primary purpose is to improve health. This includes efforts to influence determinants of health as well as more direct health-improvement activities.”

Health System Performance Assessment (WHO / EURO)

“The health system’s six building blocks alone do not constitute a system; any more than a pile of bricks constitutes a functioning building... It is the multiple relationships and interactions among the blocks – how one affects and influences the others, and is in turn affected by them – that converts these blocks into a system.”

Health System Analysis for better health system strengthening (World Bank)

“Health systems are a means, developed by societies, to help achieve ends such as those mentioned above. Health systems can be a vehicle for accelerating progress on health-related goals, but they can also be a source of constraints, impeding progress.”

Situation analysis of the Health Sector (WHO)

“A HS is the aggregate of all public and private organizations, institutions, and resources mandated to improve, maintain or restore health. This includes both personal and population services, as well as activities to influence the policies and actions of other sectors to address the political, social, environmental, and economic determinants of health.”

Health systems in Transition (HiTs)

“Health systems are understood in line with the World Health Report 2000 as combining three elements:

- the delivery of health services (both personal and population based);
- activities to enable the delivery of health services (specifically finance, resource generation and governance); and
- governance activities that aim to influence other sectors where they affect health.”

In practice, it may be more useful to align the definition of the health system as closely as possible to the people and institutions responsible for improving health – especially if the framework is meant to be a platform to assess performance and inform subsequent actions. Nevertheless, acknowledging the health system’s broader setting will improve understanding of its interactions with the wider economic, political and social surroundings.

2.4 What are the factors that explain health system performance?

A key part of any health system framework is outlining the factors that explain health system performance. Over time and across frameworks, the terminology chosen to refer to these factors, and the number of distinct factors identified, differ. In their framework, Murray & Frenk (2000) identify these factors as four health system functions, which draw on their previous work (Londoño & Frenk, 1997), and are: financing; provision of health services; stewardship; and resource generation. Within each of the four functions, Murray & Frenk (2000) identified sub-functions and elements of strategic design, structural arrangements and implementation management that might contribute to a health system’s ability to carry out these functions.

The World Health Report 2000 highlights the same four functions as a basis to better understand and evaluate health systems and their performance (WHO, 2000). In 2007, the WHO published an updated framework for health system evaluation (WHO, 2007) which, instead of focusing on functions, introduced six system “building blocks” to represent the health system inputs. These are leadership and governance; health care financing; health workforce; medical products and technologies; information and research; and service delivery. The building blocks and functions are closely linked and have some overlap. For instance, the building blocks of leadership and governance, health care financing, and service delivery reflect the core functions of stewardship, financing and provision of health services. Similarly, health workforce and medical products and technologies – once considered to be sub-functions of resource generation – are identified as building blocks. So, too, is information and research which arguably span all health system functions. These two frameworks provide the basis for most of the assessments reviewed in this chapter.

The assessments that do not adopt one of the two WHO approaches also identify key factors that influence health system performance, although they refer to them with different descriptors, including: foundations and control knobs (Table 2.2). Nearly

all the assessments mention certain organizational components of the health system, such as financing and governance, although terminology and scope vary. For example, apart from the term “governance”, more specific terms such as stewardship, leadership, regulation and organization are sometimes used. In some form, the physical and human inputs that deliver care are also identified – either as distinct factors, or by the actions involved in generating, maintaining or using them to deliver services. For example, while the WHO 2000 framework uses one category – generation resources – for all inputs, the WHO 2007 ‘building blocks’ framework lists health workforce, information and medical products, vaccines and technologies as stand-alone factors.

The delivery of services is often presented as a distinct organizational component although, once again, different assessments use different terminology. For example, the delivery of services is conceptualized through “platforms [of service delivery]” in the HQSS framework. There are also factors that influence performance that are singled out by some frameworks and tools, but not present on others. The factors influence health system goals, although not always directly through the health care system. Examples include: behaviour in the Control Knobs framework; the community component in the FHI 360 tool, and population in the HQSS framework.

2.5 What are the health system’s goals?

Health system performance assessment seeks to monitor, evaluate and communicate the extent to which the health system meets its key objectives (Smith et al., 2009). A first step in any performance assessment exercise is to set out the health system’s goals. All tools except for the FHI 360 and the Situation Analysis by WHO define health system objectives (Table 2.3). Despite variations in terminology and the ways the objectives are grouped, into intermediate objectives or final goals, for example, there is relative consensus across the assessment tools. Notably, some objectives are phrased neutrally (for example, WHO 2000) while some are phrased normatively (for example, HCQI 2006).

Unsurprisingly, most assessments identify health status or health improvement as the key objective of the system. This interpretation of health is almost always considered in terms of the health of the population; however, there are differences in how explicitly the goal of health improvement is linked to activities that fall within the defined boundaries of the health system (Papanicolas, 2014). In addition, the exact wording differs with some assessments explicitly referring to “health improvement” or “better health” but others only specifying “health status” or “population health”.

Table 2.2 *Factors that influence health system performance*

Framework/Tool	Factors that influence health system performance	Framework/Tool	Factors that influence health system performance
WHO (2000) World Health Report 2000	Functions: <ul style="list-style-type: none"> · Delivering services · Creating resources · Financing · Stewardship 		Building blocks: <ul style="list-style-type: none"> · Leadership and governance · Health system financing · Information systems · Health workforce
WHO (2007) Strengthening Health Systems to Improve Health Outcomes: WHO's Framework for Action (2007) Also in: WHO (2010) Monitoring of the Building Blocks of the Health Systems: a handbook of indicators and their measurement strategies.	Building blocks: <ul style="list-style-type: none"> · Service delivery · Health workforce · Information · Medical products, vaccines and technologies · Financing · Leadership and governance 	FHI 360 (2012) Health System Rapid Diagnostic Tool	Building blocks: <ul style="list-style-type: none"> · Health infrastructure, equipment and products · The community component · Service delivery Health system functions: specific process performed within each health system building block
Roberts et al. (2008) Getting Health Reform Right: A Guide to Improving Performance and Equity; World Bank Also in: Berman & Bitran (2011) Health Systems Analysis for Better Health System Strengthening; World Bank.	Control knobs: <ul style="list-style-type: none"> · Financing · Payment · Organization · Regulation · Behaviour 	Health System Performance Assessment (WHO/EURO)	Any components as long as they are consistent (for example, building blocks, functions, a combination of both)
HQSS High-Quality Health System Framework (2018)	Foundations: <ul style="list-style-type: none"> · Population · Governance · Platforms · Workforce · Tools 	Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies (WHO) (2007)	Building blocks: <ul style="list-style-type: none"> · Service delivery · Health workforce · Health information systems · Access to essential medicines · Financing · Leadership/governance
USAID (2017) Health Systems Assessment Approach: a how-to manual (Version 3)	Functions: <ul style="list-style-type: none"> · Service delivery · Human resources · Medical products, vaccines and technologies · Health information system · Health financing · Governance 	Health system reviews (HiTs) (European Observatory 2019)	Assesses the functioning of the health system, composed of the main organizational, financing, human and physical resources and service delivery aspects of the health system
		Health System Analysis (WHO) (2011)	Building blocks plus related aspects: <ul style="list-style-type: none"> · Human resources for health · Pharmaceuticals and medical products · Health technologies and infrastructure · Service delivery · Health governance and management · Leadership and coordination and reforms · Health financing · Health information system · Sector policies and context · Health outcomes

Source: Authors' compilation.

Table 2.3 *Health system goals*

Framework/Tool	Intermediate objectives	Final health system goals
WHO Performance Framework (2000)	Access Coverage Quality Safety	Level and distribution of health Level and distribution of responsiveness Fairness in financing Efficiency
Control Knobs Framework (2003)	Efficiency Quality Access	Health status Citizen satisfaction Risk protection
OECD HCQI Framework (2006)		Improving health Macroeconomic efficiency/ sustainability Microeconomic efficiency/ value for money Equity
HQSS High-Quality Health System Framework (2018)	Processes of care: · Competent care and systems · Positive user experience	Quality impacts: · Better health · Confidence in system · Economic benefit
Health System Assessment Approach: A How-To Manual (USAID)	Equity Efficiency Access Quality Sustainability	Improved health Responsiveness Risk protection
Health System Performance Assessment (WHO/EURO)	Equity Efficiency	Health improvement Risk protection Responsiveness
Health System Analysis for better health system strengthening (World Bank)	Access Quality Efficiency	Health status Financial protection Customer satisfaction
Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies (WHO) (2007)		Improved health Responsiveness Social and financial protection Improved efficiency
Health system reviews (HiTs) (2019)		Population health Quality Efficiency Transparency and accountability

Source: Authors' compilation.

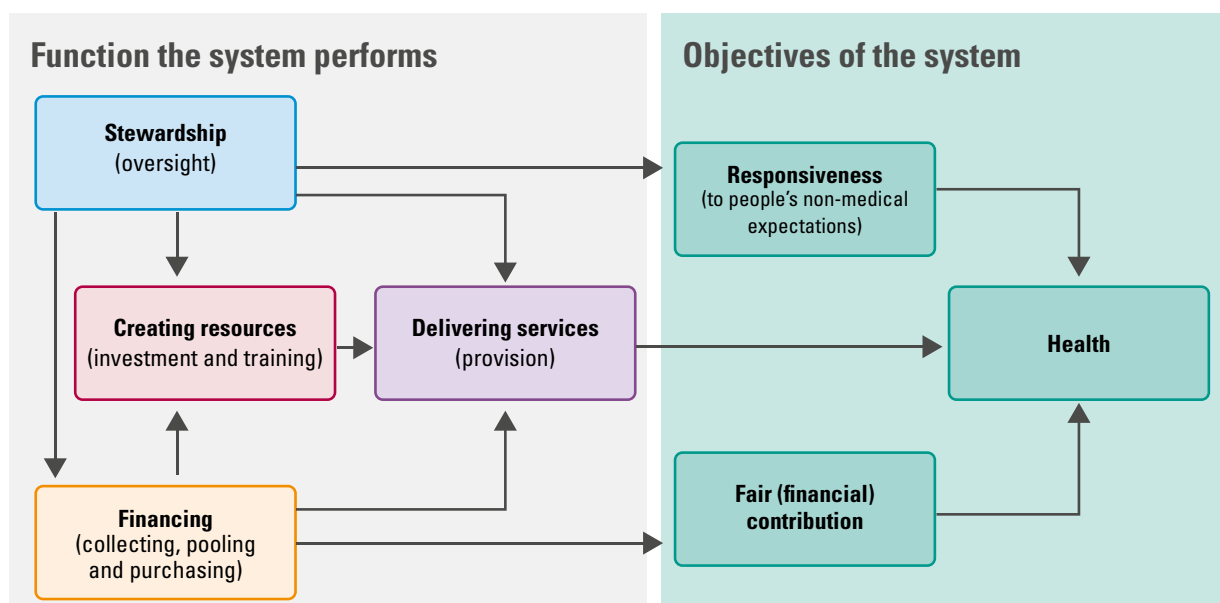
People's experiences with their interactions with the health system are also frequently identified as an objective of the health system, although here too there is considerable variation on the terminology and scope. This variability centres on whether a goal is conceptualized in a way that considers patients specifically or the broader population; and whether it applies primarily to aspects of satisfaction with health care services or extends beyond this to encompass human rights and confidence in the system. For example, the control knobs framework focuses on the goal of citizen satisfaction, whereas the HQSS framework considers confidence in the system as the specific goal. The WHO adopts the much broader notion of "health system responsiveness", which includes elements of both respect for persons and client orientation.

Most of the assessments also explicitly mention efficiency and equity as important objectives, although at times these are seen as intermediate objectives and at others, they are final, or even cross-cutting objectives. Again, one of the differences has to do with whether efficiency applies to the entire system or particularly organizations/services within the system, or both. Most assessments typically refer to equity. At times, this encompasses some notion of the distribution of other outcomes, such as health (for example, WHO 2000), but it also frequently appears as an intermediate objective. For example, the USAID framework includes equity as a "performance criterion" to influence "final impact", and notes that this specifically refers to horizontal and vertical equity (USAID, 2012).

Many of the assessment tools also highlight risk protection as a health system goal. The nature of this risk varies, and may include social, economic, financial and other risks – but most single out financial risk protection and related aspects, such as fairness in financing. Finally, most assessment tools refer to the goals of access, quality and coverage, although these are almost always considered intermediate objectives that are means to achieve final objectives.

2.6 Assessing performance: how are factors that influence performance linked to the health system objectives?

One of the main innovations of the World Health Report 2000 was to present a health system framework that linked health system functions – namely, factors that influence the performance of the health system – to health system objectives (Fig. 2.1). It recognized that health system functions can be classified and related to health system objectives in many ways, and many of the subsequent frameworks reviewed in this chapter have built on this approach and developed it further.

Fig. 2.1 Relationship between functions and objectives of a health system

Source: WHO (2000).

All health system frameworks highlight that HSPA should involve assessing processes within the health system, rather than merely describing what these processes or factors are. How the different assessments do this, varies. The different assessment tools do not always explicitly define health system outcomes, nor do they identify the factors that may influence such outcomes. And when they do, approaches vary greatly.

The 2007 WHO Building Blocks framework broke down the four functions into their more structural inputs and linked them to a range of core indicators. This enabled countries to produce national “dashboards” for targeted monitoring and evaluation of health system strengthening efforts. The indicators were all directly linked to the building blocks, and the performance of the building blocks was linked through a results chain to specific outputs, outcomes and impact: improved health outcomes and equity, social and financial risk protection, responsiveness and efficiency.

A similar approach, taken by the World Bank (Roberts, Berman & Reich, 2003), uses “control knobs” – which are defined as financing, payment, organization, regulation and behaviour – as the factors that influence health system goals, such as health status, financial risk protection and satisfaction (Hsiao, 2003; Berman & Bitran, 2011).

Most of the assessment tools reviewed take either the health systems functions or building blocks approach to outline the organizational components that serve as an

entry point for assessment of the health systems. From there, depending on the tool, the different organizational components are accorded varying emphasis, in terms of orienting data collection and linking collected data to health system outcomes. Some tools use linkages between the organizational components and the health system outcomes as a means to provide a broader context to the assessment, rather than as a means for assessing the health system's overall performance. For example, the FHI 360 and the WHO Situation Analysis outline key factors that contribute to the performance of the health system, such as financing and service delivery, and propose a framework to evaluate these, but do not explicitly outline how those components contribute to the health system's objectives.

Some assessments, such as Monitoring the Building Blocks, WHO and the *HSAA manual*, USAID, are prescriptive regarding the indicators they use to assess the organizational components. Others, such as the HSPA EURO and to a certain extent also the Situation Analysis of WHO, suggest a process of identifying and defining these indicators as the first step of the assessment itself. However, all tools offer, at least, the possibility of linking their suggested indicators or qualitative information to their respective organizational components.

Importantly, there are also differences with regards to how information gathered through the assessment process is used. Some tools focus on understanding the status quo of the factors that influence performance to create a descriptive overview. Others offer options to develop recommendations and solutions designed to improve the performance of organizational components of the system; and some include methodological guidance on how to undertake the assessment itself. For example, the USAID *HSAA manual* attempts to identify the underlying causes of poor performance of the building blocks with the aim of improving health planning and decision-making. The FHI 360 Health System Rapid Diagnostic Tool emphasizes that the assessment should be structured according to three areas related to performance: the factors that affect performance of a function; the process of performing the functions itself; and "areas of service delivery, health objectives, or other health system functions that are affected by the performance of that function". However, the FHI 360 does not suggest any concrete indicators to achieve this. Instead, it suggests creating a "performance map" for each HSA, which can be used for "developing metrics to assess the performance of these functions". In contrast, the WHO/EURO HSPA tool looks more closely at the strategic level to provide a "big picture" foundation on which to assess the performance of a health system holistically, and finally the USAID manual guides the identification

of strengths, weaknesses, opportunities and threats within the health system building blocks.

Across the assessments reviewed not all seek to assess the performance of the health system. Instead they focus on describing and understanding the current state of the health system factors that can influence performance. HSPA tools that have the word “performance” in their title do examine final goals of the system more consistently. However, they often lack an in-depth analysis of the performance of each factor that can influence performance in the system. Our aim with the HSPA Framework for UHC approach is to include both the description and analysis of the factors within a health system that can influence performance as well as its intermediate objectives and final goals.

2.7 Discussion and conclusions

Over the past decades efforts to conceptualize and assess health systems have come a long way. Across the different health system frameworks and assessment tools reviewed, there are many commonalities around key outcomes of the health system and the factors that influence them. This provides a strong foundation for a common conceptual framework to unify approaches to HSPA.

However, there are key conceptual areas where consensus is lacking. The first important point of divergence is in relation to the health system boundaries set. Although most frameworks and assessments will include public health and health promotion activities within the boundaries set, most do not also hold the health system directly accountable for the social determinants of health. All these factors influence health system outcomes, but the decision of where to set boundaries has more to do with the purpose of the framework or assessment itself. If the objective is to identify a set of actions that actors within the health system can take to improve the performance of the system, or its functions, it may be better to set the boundaries accordingly. However, it is crucial to identify the importance that other factors will have on the health system objectives, and the ways the health system can influence them.

A second area of divergence is in relation to the determination of the health system goals. There is broad consensus around key goals such as health improvement, but there is still considerable variability around the terminology, scope and remit of many other objectives including equity, efficiency and some notion of how

responsive the system is to people's non-medical needs (termed client satisfaction, people centredness, health system responsiveness to name a few). Possibly reflecting the differences in boundaries set to the assessment exercise, there are also differences with regards to some of the objectives included across tools, such as behaviour, trust or population.

Another difference across the assessments reviewed relates to the number, scope and remit of the factors that influence performance, and how these are linked to outcomes. Although most of the tools explored use either the WHO functions or building blocks to outline the factors that influence performance, there are also other representations. Despite the difference in terminology and number, these factors seem to cluster around a set of organizational components responsible for key actions in the health system. As a result, most organizational components can be mapped from one tool to another relatively easily. However, depending on the initial objective of the tools and frameworks reviewed, there were differences with regards to whether they reviewed the performance of the organizational components the actions of which influence the health system objectives and how prescriptive they were regarding the indicators that could be used for these purposes.

While all framework and assessment tools shared the premise that the key to health systems strengthening was through the improvement of the factors that influence performance, not all showed the explicit links from one to the other. We believe HSPA is a crucial activity that can inform efforts to strengthen health systems by identifying opportunities for improvement. Ultimately, the usefulness of HSPA for national and international stakeholders comes from clarifying the links between the organizational components of the health system and the final goals. By understanding how past frameworks and assessment tools have outlined and measured these links, we can begin to formulate a common understanding to bring thinking together. A key part of this process will be to make use of the qualitative and quantitative information that is collected through existing assessment tools that could inform more specific HSPA activity. This is particularly important as many existing assessment tools undertake a thorough assessment of the organizational components of the health system, but do not always explicitly relate this to the final health system outcomes.

These areas outlined above reflect critical debates about health systems thinking that will not be resolved in this volume. However, we propose an explicit, evidence-based approach to all these areas.

References

- Arah OA et al. (2006). Conceptual frameworks for health systems performance: a quest for effectiveness, quality, and improvement. *International Journal for Quality in Health Care*, 15(5):377–398.
- Berman P, Bitran R (2011). *Health Systems Analysis for Better Health System Strengthening. Health, Nutrition, and Population. Discussion paper*. Washington, D.C., World Bank Group.
- European Observatory on Health Systems and Policies (2019). *Health Systems in Transition: template for authors 2019*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Kruk ME et al. (2018). High-quality health systems in the Sustainable Development Goals era: time for a revolution. *The Lancet Global Health*, 6.11:e1196–e1252.
- Londoño JL, Frenk J (1997). Structured pluralism: towards an innovative model for health system reform in Latin America. *Health Policy*, 41(1):1–36.
- Murray CJL, Frenk J (2000). A framework for assessing the performance of health systems, *Bulletin of the World Health Organization*, 78(6):717–730.
- Papanicolas I, Smith P, eds. (2013). *Health System Performance Comparison: an agenda for policy, information and research*. Maidenhead, Open University Press
- Rajan. D (2016). *Chapter 3: Situation analysis of the health sector. In: World Health Organization. Strategizing national health in the 21st century: a handbook*. Geneva, World Health Organization.
- Roberts MWH, Berman P, Reich M. (2003). *Getting Health Reform Right: A Guide to Improving Performance and Equity*. Oxford, Oxford University Press; 2003.
- Roberts MWH, et al. (2008). *Getting Health Reform Right: A Guide to Improving Performance and Equity*. Oxford, Oxford University Press.
- Smith PC et al. (eds) (2009). *Performance measurement for health system improvement: Experiences, challenges and prospects*. Cambridge, Cambridge University Press.
- UHC2030 (2020). ([https://www.uhc2030.org/fileadmin/uploads/uhc2030/Documents/About UHC2030/UHC2030_Working Groups/2017](https://www.uhc2030.org/fileadmin/uploads/uhc2030/Documents/About_UHC2030/UHC2030_Working_Groups/2017)).
- USAID (2017). *The Health System Assessment Approach: A How-To Manual*. Version 3.0. Washington, D.C., USAID.
- Wendt D (2012). *Health System Rapid Diagnostic Tool. Framework, operational Guide, and metrics to measure the strength of priority health system functions*. Durham, NC, Family Health International.
- WHO (2000). *World Health Report 2000. Health systems: improving performance*. Geneva, World Health Organization.

WHO (2007). *Everybody's business: Strengthening health systems to improve health outcomes. WHO's framework for action*. Geneva, World Health Organization Document Production Services.

WHO (2010). *Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies*. Geneva, World Health Organization.

WHO (2010). *Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies*. Geneva, World Health Organization.

WHO Regional Office for Europe (2012). Case studies on health system performance assessment. A long-standing development in Europe (http://www.euro.who.int/__data/assets/pdf_file/0006/169548/19228-HSPA-Analytical-case-studies.pdf), accessed on 23 May 2016.

Working towards a common approach: the HSPA Framework for UHC

Irene Papanicolas, Marina Karanikolos, Josep Figueras, Dheepa Rajan

3.1 Introduction

The overarching aim of this book is to develop a framework for HSPA that supports countries' efforts to strengthen their health system while they move towards universal health care coverage (UHC). The HSPA Framework for UHC is intended to provide a tool that can assist stakeholders with making the best use of information collected through existing HSA tools for the purpose of HSPA. In order to ensure conceptual continuity, our approach uses health systems functions developed in the World Health Report 2000 – governance, financing, resource generation and service delivery – as a starting point to evaluate health systems. Our approach aims to provide further insight as to how these four functions contribute to the achievement of health system goals, and hence the attainment of good health system performance. Central to this approach is the premise that the way to attain a high level of overall health system performance is to ensure that each individual health system function is performing at a high level.

In order to provide a starting point from which to approach the HSPA Framework for UHC, this chapter will focus on:

- defining the entity being assessed – or setting the boundaries of the health system
- introducing the key functions of the health system
- the final goals and intermediate objectives of the health system.

Drawing on the review carried out in Chapter 2, this chapter will aim to build upon areas of consensus as much as possible, with the aim of producing a tool that is easily

applicable to existing approaches. This chapter will introduce the main functions that make up the HSPA Framework for UHC, and outline the intermediate objectives and final goals of the health system. The specific role and assessment of the functions will be discussed in more detail in Chapters 4 to 7. Once the role and assessment of function of the HSPA Framework for UHC has been introduced, Chapter 8 will review how they come together to influence health system performance.

3.2 Introducing key concepts

Chapter 2 outlined a number of key concepts that should be clarified before a HSPA can be set out, namely: (1) clearly defining the boundaries of the health system to be assessed; (2) outlining the factors that influence health system performance; and (3) identifying the health system objectives. As we introduce the HSPA Framework for UHC in this chapter, we will address how each of these steps has been approached.

3.2.1 Health system boundaries

In line with the Health System Performance Framework (Murray & Frenk, 2000), we limit the boundaries of health system to actors and actions whose primary intent is health improvement.

3.2.2 Factors that influence health system performance: functions and sub-functions

As discussed in Chapter 2, there are various ways to define the factors that influence performance. Two common approaches that are adopted by WHO and widely used across assessment tools are the conceptualization of health system functions (WHO, 2000) and the health system building blocks (WHO, 2007). To a certain extent, these frameworks support each other. For example, the health system functions serve as a starting point for the conceptualization of the building blocks. As outlined in WHO (2007), “to achieve their goals, *all health systems have to carry out some basic functions, regardless of how they are organized*: they have to provide services; develop health workers and other key resources; mobilize and allocate finances, and ensure health system leadership and governance (also known as stewardship, which is about oversight and guidance of the whole system)”.

In line with this approach, we adopt the concept of health system functions as a starting point for HSPA. The *Oxford English Dictionary* defines function as “a duty attached

to a role or office” or “the purpose or intended role of a thing”. When defining health system functions, the former description is most commonly used, and it outlines the essential duties that a health system needs to carry out to achieve its intended goals. Our approach, which is presented below, identifies four health system functions, in line with the World Health Report 2000: governance, financing, resource generation and service delivery (WHO, 2000).

As each function contributes to the attainment of the health system goals, our conceptual framework seeks to identify and outline each of these health system functions and assess how well it is performing. Before doing so, we must first outline more explicitly what a well-performing function looks like, considering differences in the individual structures and organizations that exist across health systems. The second part of this volume outlines this approach for each of the four health system functions – governance, financing, resource generation and service delivery – to create a performance framework and identify a set of assessment areas and indicative measures, for each. These function chapters identify the overarching aim of the function and key processes, or sub-functions, essential to achieving this aim. Ultimately, by identifying areas within each function that can be improved, we can identify ways to strengthen the health system as a whole and support the attainment of health system goals.

The selection of sub-functions is based on criteria drawn from the literature and further discussions of the UHC2030 Technical Working Group (2018). These are to:

- logically reflect the core health system functions, preferably in self-contained, complementary components
- identify specific actions or necessary elements of each function that are conducive to the achievement of the high-level health system goals
- have the potential to hold specific actors within the health system accountable for actions and processes
- be described or measured, monitored and assessed in relation to high-level goals
- ensure consistency with existing HSPA efforts.

As the four core functions are themselves very broad, the first two criteria provide a basis for the way they should be further broken down to enable assessment. First, to enable a meaningful assessment, the functions need to be broken down into specific elements, which can be evaluated through performance indicators. Second, as functions represent actions – what health systems do – they must be assessed as dynamic processes

that lead to specific results or outcomes, which either directly or indirectly contribute to the attainment of the health system goals.

The next two criteria related to the selection of sub-functions are related to assessment. The selected sub-functions must identify the distinct areas for improvement for which actors within health systems can be held accountable. This will make the framework useful for stakeholders within the system, by providing them with evidence for needed action; as well as external stakeholders looking to hold these entities to account, by providing them with information on how well the different functions of a health system are performing. To make a performance assessment meaningful, sub-functions must have the capacity to be measured with appropriate quantitative or qualitative indicators as well as the capacity to be monitored over time.

Finally, given the remit of the Technical Working Group (TWG) to identify a harmonised and common approach for assessing health systems, the last criterion is that sub-functions are consistent with existing instruments for HSAs. This will ensure that the framework builds on existing efforts where possible.

3.2.3 Identifying the health system's goals

Drawing upon the areas of consensus identified in Chapter 2, we propose the following health system goals for the HSPA Framework for UHC: health improvement, people centredness, financial protection, health system equity and health system efficiency.

Indisputably, a fundamental goal of any health system is the improvement of the health of the population for which it is responsible. Central to the consideration of this goal is a clear understanding of what is meant by “health” and, in particular, how much health attainment or improvement the health system is accountable for. Recent decades have seen the development of broader measures of health status that incorporate quality of life alongside years lived. Increasingly, HSPA exercises make use of population health metrics such as amenable mortality; these are more narrowly focused on areas where the health system can have a demonstrable impact, either through effective and timely care, or public health intervention (Karanikolos et al., 2013; GBD 2015, 2017; Kruk et al., 2018). For the purposes of this exercise, we consider a broad definition of health, as outlined in previous HSPA efforts (WHO, 2000, 2007). This ensures that it encompasses the health of the population at different points in the life cycle and includes the effects of morbidity and premature mortality. However, given the health system boundaries

we have assigned for this exercise, we only consider health improvement resulting from actions with the primary intent of improving health.

As a second fundamental goal of the health system, we explicitly outline “people-centredness”. A people-centred health system is one that meets the population’s medical needs alongside non-medical needs — such as ensuring that care is acceptable and that people’s individual rights, needs and preferences are respected in their interactions with the health system. It is important to distinguish that this goal reflects a product of the whole population’s non-medical interactions with the system — including trust in the health system, and perceptions of quality and access – and does not focus solely on patient experience and/or satisfaction, although these are important products of patient-centred care. This objective is reflected across multiple existing frameworks, albeit using varied terminology.

A recent study by Nolte et al. (2020) conceptualizes people-centredness and empowerment as having three main components. First, the citizen’s voice represents the notion of population representation and involvement in decision-making bodies. These include hospital boards and priority-setting bodies, as well as public reporting about the health system and assessing public views, which are all key in effective health system governance. Second is patient or service user choice of provider. Finally, the patient as a co-producer relates to how patients or service users engage, individually or collectively and in partnership with providers, in the delivery of their own treatment. In the two latter categories, instruments such as rights legislation, participatory decision-making tools and the availability of patient-related outcomes and experience measures will be key.

Financial protection, which is sometimes identified as risk protection, refers to the health system’s ability to protect the population from the financial risks of ill health. This is seen as an objective distinct from people-centredness, and refers specifically to protecting individuals from impoverishment or catastrophic spending in their pursuit of health. Many of the world’s health systems have implemented extensive health insurance mechanisms to protect their populations and to try to achieve this objective. In countries where these insurance systems are not universally accessible to the population, efforts are being undertaken to extend them through the achievement of universal health care coverage. However, even in systems where insurance arrangements are in place for the entire population, they often offer only partial financial protection. It is critical to examine differences in the structure and operation of a health system’s financing

arrangements when assessing how well countries meet this particular objective. This is discussed in Chapter 5.

In addition to the three fundamental goals outlined above, there are two cross-cutting health system goals: health systems equity and health systems efficiency. Health systems equity considers any variation across groups within the population in the attainment of the other health system goals. The fundamental aim of health systems equity is to ensure fairness in this distribution. However, in practice, how this is conceptualized differs across health system frameworks in terms of the goals that are examined in order to assess this distribution (Papanicolas & Smith, 2013). Often across stakeholders there are also differences in terms of what is considered an equitable distribution across the population (Allin et al., 2009).

Health system efficiency, the second of the cross-cutting health system goals, considers how resources are used to secure the objectives set out above (Cylus, Papanicolas & Smith, 2016). Improved health system efficiency is an important consideration because it enhances the capacity to produce valued outputs and the consequent sustainability of the system. Identifying inefficiencies, in either the system or in its component parts, is important as it enables the attainment of objectives with fewer resources. Or, alternatively, it enables the system to produce more with the same resources. In trying to understand variations in health system efficiency across health systems, it is critical to examine the performance of all four functions in the health system.

3.2.4 Intermediate objectives

As indicated in the review in Chapter 2, certain health system objectives – such as ensuring access to health services across the population and the attainment of good quality care – are instrumental to the achievement of the health system goals that have been outlined. Building on previous work (such as Murray & Frenk, 2000) we describe these as “intermediate goals”, not to suggest that they are less important, but to indicate that they are a necessary step on the pathway to achieving the health system goals. This follows the direction taken by other health systems frameworks (see Chapter 2). We set intermediate objectives – access and quality – each of which is, itself, multifaceted. As outlined in more detail in Chapter 7, these intermediate objectives are also indicative of the performance of service delivery, and provide an important link between the performance of the health system functions and the attainment of the health system goals.

A number of different frameworks are used to define and assess quality, which is also recognized as a multi-dimensional concept. It is beyond the scope of this chapter to provide a comprehensive assessment of the substantial body of literature concerned with evaluating the quality of health services, and there has been considerable work to develop taxonomies and frameworks to capture its various domains (Maxwell, 1992; Council of Europe, 1997; Institute of Medicine, 2001; Kelley and Hurst, 2006; Klassen et al., 2010; Carinci et al., 2015) For a detailed discussion of this please see Busse et al. (2019).

A widely used definition states that quality is “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current medical knowledge” (Institute of Medicine, 2001). The Institute of Medicine went on to identify six dimensions that could be used to evaluate the quality of care: safety, effectiveness, patient-centredness, timeliness, efficiency and equity. Others have added the dimensions of access, as well as acceptability and continuity, with some overlap between dimensions. For an overview see Busse et al. (2019) and Nolte et al. (2011).

More recently, the Lancet Global Health Commission on High Quality Health Systems in the Sustainable Development Goals Era further developed existing efforts to “define, measure, and improve the performance of health systems”, with a particular focus on low- and middle-income countries. It defined a high-quality health system as “one that optimizes health care in a given context by consistently delivering care that improves or maintains health outcomes, by being valued and trusted by all people, and by responding to changing population needs”. This is underpinned by four core values: being for people and being equitable, resilient and efficient (Kruk et al., 2018).

Access to health services has been conceptualized in numerous ways, but is most frequently defined in relation to the actual use of existing services. For example, the US Institute of Medicine described it as “the timely use of personal health services to achieve the best possible health outcomes” (IOM Committee on Monitoring Access to Personal Health Care Services, 1993). More recently, Levesque, Harris & Russell (2013) built on existing conceptualizations to develop a broader framework that unites the different dimensions and determinants of access to health services. This distinguishes approachability, acceptability, availability, accommodation, affordability and appropriateness, alongside what they termed population “abilities”, that is the ability to perceive, seek, reach, pay for and engage with health services.

3.2.5 Performance of the functions: assessment areas

The main objective of the HSPA Framework for UHC is to provide a tool that assists policy-makers in using the information collected from other assessments for the purpose of HSPA. Central to this is the belief that a well performing health system will be the product of well performing health system functions. Therefore, as a first step to producing the framework it is necessary to outline what well performing health system functions look like, and begin to map out how information from other assessment tools can be used to measure this.

Although the health system objectives help to assess performance at the system level, measures of health system outcomes are not precise enough to point to areas of strength or weakness at the function or sub-function level. In order to measure performance at the function and sub-function level, we outline specific assessment areas for each of the functions and their sub-functions. The assessment areas proposed are meant to evaluate the extent to which the functions and sub-functions are achieving their objectives, and are informed from the literature, the review of HSA tools (Chapter 2) and TWG discussions and consultations. As assessment areas derive from individual sub-functions, they are described in detail in the following function chapters (Chapters 4–7).

3.3 The HSPA Framework for UHC

To bring all of the concepts together, Fig. 3.1 shows the overview of the HSPA Framework for UHC. This framework illustrates the four functions and the intermediate and final objectives along with their structural and performance links. Chapter 8 showcases the details of the framework once each function has been introduced in detail, and its sub-functions and assessment areas have been outlined.

In Fig. 3.1, the four functions (governance, financing, resource generation and service delivery) are shown on the left-hand side (in the grey area). As the functions influence one another, they are represented with structural links, in the form of solid arrows. Governance not only influences the other three functions through the structural links, but is also present within the other functions, as will be outlined in Chapter 4 – specifically, through the governance of financing, the governance of resource generation and the governance of service delivery. This is shown in Fig. 3.1 with parts of the governance function overlapping the other three.

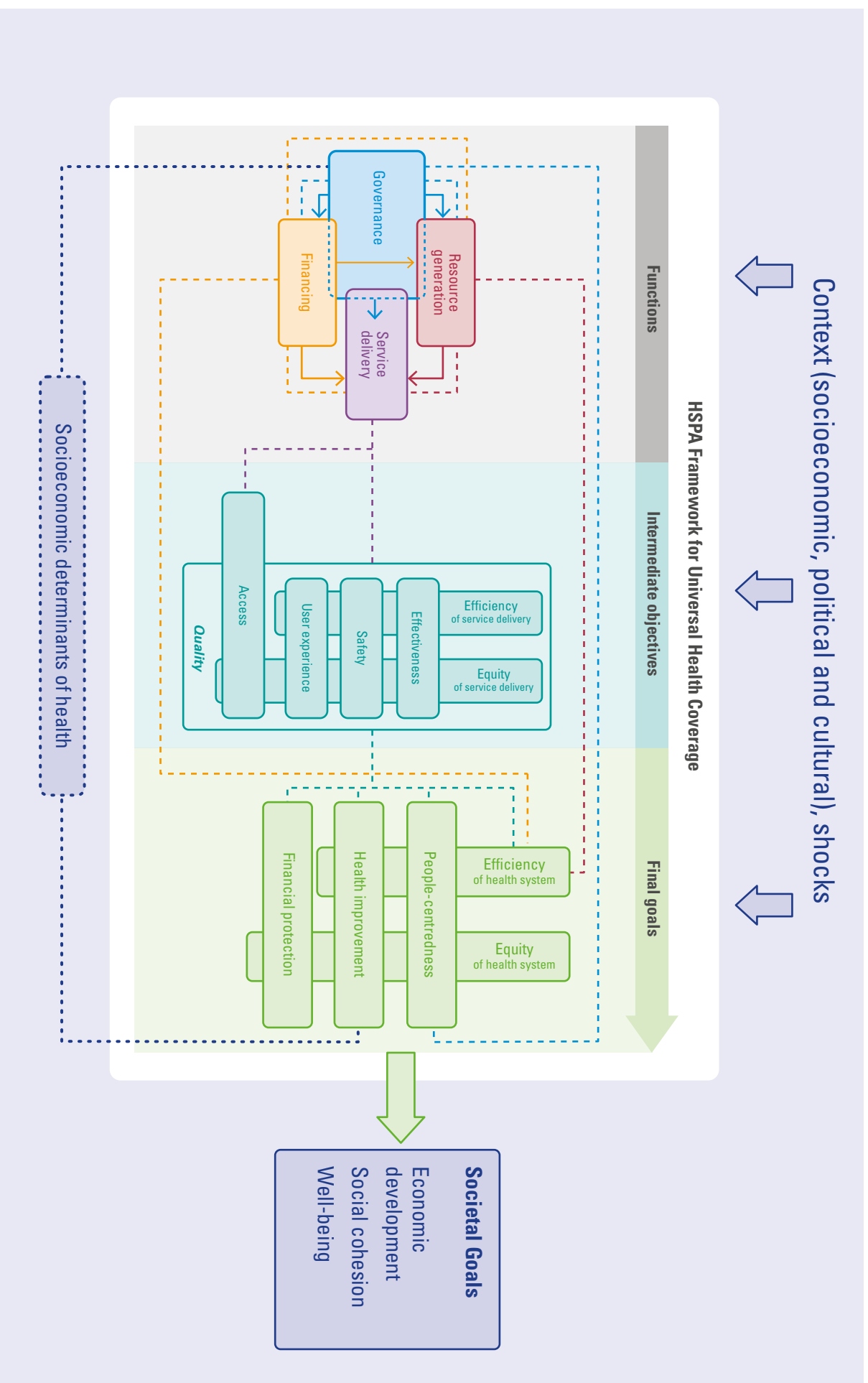
On the right-hand side of the framework (in the green area) the five health system goals are shown: health improvement, people-centredness, financial protection; plus the cross-cutting objectives of health systems equity and health systems efficiency. Directly influencing the attainment of these goals, as demonstrated by the connecting line, are the intermediate objectives – access and quality (these are shown in the turquoise area of Fig. 3.1). Access is placed to the left of quality – to indicate that the population must first overcome the barriers outlined above to access the system before any measure of quality is possible. As an objective, quality is broken down into effectiveness, safety and user experience, as well as cross-cutting dimensions of service delivery function – efficiency and equity. Efficiency is cross-cutting as it requires attainment of effectiveness, safety and user experience at the lowest costs, while equity is cross cutting because it requires a fair distribution of effectiveness, safety, user experience and access across all groups in society. The intermediate objectives are also the outcomes of a well performing service delivery function and, therefore, coincide with service delivery assessment areas (see Chapter 7).

Drawn from the vast amount of conceptual work developed over the past two decades, the this framework represents the fundamentals of a HSPA, but it is not sufficient to identify the areas where reforms and policies can impact the achievement of health system goals. Therefore, it serves only as a skeleton for further disaggregation of functions, into sub-functions and their assessment areas, as well as for a much wider set of linkages between the functions and outcomes. These are described in the following chapters and consolidated in detail in Chapter 8.

3.3.1 Health and health system impact on societal goals

Our approach to HSPA follows the health system definition and boundaries outlined above, which includes “those actions whose primary intent is to improve health”. Assessing the impact that health improvement and other health system goals have on overall societal goals falls outside these boundaries. In the same way, HSPA does not aim to measure the impact of social, economic, political and cultural factors on the performance of the health system functions. This is not to say, however, that these two objectives are unimportant, or should be ignored by policy analysts and practitioners when assessing health system performance and drawing policy implications. Therefore Fig. 3.1 also places the HSPA Framework for UHC within the wider societal context and shows the interrelationship between the health system and its societal context.

Fig. 3.1 HSPA Framework for UHC – an overview



Source: Authors' compilation.

There is a broad body of literature that examines the influence of health status on the attainment of broader societal goals, such as macroeconomic growth, social cohesion and overall societal wellbeing (Bloom, Canning & Sevilla, 2002, Deaton, 2007; WHO, 2016; Kieny et al., 2017; Cylus, Permanand & Smith, 2018; Lessof et al., 2019). The relationship between societal outcomes and health system performance is complex and dynamic, but linkages can be made between the two with this body of evidence suggesting that improved health system outcomes – such as better health, increased financial protection and a health system that is responsive to the population needs – will influence societal goals.

A recent review by the European Observatory (Lessof et al., 2019) for the G20 shows the range of contributions that health systems have on economic and societal progress. Three broad sets of contributions are noteworthy. First, the influence health and health systems have on the economy. The health sector is an important part of the economy, accounting for an average of 8% of gross domestic product (GDP) across the G20, which provides jobs and opportunities for innovation and trade. Moreover, it plays a crucial role in keeping people economically active and independent, which is increasingly important as populations age. Health systems, health and wealth form a virtuous cycle: health systems keep people healthy, healthy people are more productive and wealthier, and those who do not struggle financially make fewer calls on health system resources and are better able to support economic growth (Figueras & McKee, 2015). Second, health systems also contribute to social cohesion, equity and stability by ensuring societal protection and safeguarding against the financial consequences of ill health. By fostering social protection and stability, enhancing equity and increasing economic productivity, health systems – along with other sectors such as jobs, education, housing and gender equality – play a central role in societal well-being (Lessof et al., 2019).

In addition, the performance of the health systems functions can influence societal goals. For example, it has been argued that the type of financing structure adopted by the health system can effect labour mobility and, in turn, macroeconomic performance (Buchan, Dhillon & Campbell, 2017). In the same way the adoption of organizational and technological innovations in health care delivery may spill over to other production sectors and lead to overall increases in economic productivity (Cylus, Permanand & Smith, 2018).

The linkages between the performance of the health system and the attainment of societal goals are of paramount importance for policy-makers. It is essential that future research

continues to substantiate these links with evidence, to enable health policy-makers to advocate for the resources needed to support high performing health systems. However, this is beyond the scope of our HSPA exercise. The dynamic and complex nature of the relationships between health system performance and societal goals makes it difficult to measure and precludes it from becoming more integrated into routine assessments of health system performance.

3.3.2 Health systems governance and socioeconomic determinants of health

Health is the product of numerous determinants. Some, such as medical treatment for an acute condition, can be directly influenced by the health services. Some require action outside the health system, for example using environmental policy to target the prevalence of respiratory illness. Others, such as diet and exercise, which depend primarily on individual behaviour, can be tackled, to some degree, by the health services and, to a greater degree, through fiscal and regulatory actions outside the health system.

The dilemma for any HSPA exercise, therefore, is to decide which determinants should be included in the framework, if at all, and therefore measured. Again, considering the health systems definition and boundaries adopted here, our HSPA Framework for UHC takes a two-pronged approach to this question. First, while acknowledging the importance of health determinants – such as education or employment – measuring the role that these interventions play on health determinants is outside the scope of this exercise. However, we do include assessment of the health systems governance function, which has a key role in affecting socioeconomic determinants of health by working together with other sectors to promote health. As noted in Chapter 4 on governance, this function includes a series of sub-functions such as ensuring multisectoral collaboration, or leveraging legislation and regulation for public health goals whose primary intent is to have an impact, together with other sectors, on these determinants. Despite the complexities in measuring these actions across boundaries, they are a key component of HSPA. Second, any assessment of the health system actions on health improvement needs to take into account the gains to performance secured through other areas, such as environment, education and housing.

3.3.3 Influence of context on health system functions performance

In addition to understanding the health system's influence on health determinants and societal goals, an HSPA exercise needs to consider the role that the social, economic,

political and cultural contexts have on the performance of the health system's functions. The societal context will affect each and every one of the functions, either enabling or constraining their performance. For instance, an in-depth understanding of the broader system of governance in the country is required to assess areas of health systems governance, such as technical capacity, stakeholder participation or legal compliance; and, more particularly, to attribute causality or to develop policy (see Chapter 4). In other words, if the quality of its democracy is poor, and the rule of law is lacking, there is little point in trying to address transparency and participation in the health sector. The same applies for all other health system functions. For instance, levels of funding and coverage can only be assessed in the context of the level of economic development. Similarly, any shortage of health professionals will need to be assessed in the light of the competing labour-market opportunities.

In short, one of the main purposes of creating an HSPA framework is to understand how these external influences and determinants affect health and health system performance, while they can also be influenced by health system actions. We argue that these factors need to be represented in the framework, to ensure that the health system is held accountable for these external determinants through its governance function; and that important factors that affect health system decisions – such as the political system in place or the level of development of a country – are also considered in the assessment. These factors are discussed in more detail in Chapter 4 and linked to the achievement of the final health system goals in Chapter 8 through the application of the HSPA Framework for UHC.

3.4 Conclusions

There are a number of key challenges that meaningful HSPA needs to overcome as highlighted by Smith, Karanikolos & Cylus (2018). These include:

- expanding the focus of HSAs beyond health services, to include health promotion and public health
- measuring actual health system goals, expressed in terms of outcomes such as improved health and system responsiveness or reduced exposure to financial risk; rather than solely focusing on structures and processes, such as expenditures, number of beds, workforce size or number of treatments
- measuring progress using reliable metrics and associated analytical techniques
- ensuring HSPA is a regular process, embedded in all aspects of health policy-making

- adjusting HSPA to the country context by allowing room for flexibility and adaptation to individual systems, although effectiveness of HSPA is likely to be maximized by the adoption of metrics and methods that enjoy widespread international use.

The HSPA Framework for UHC aims to address these key challenges to ensure that HSPA can be undertaken regularly in a way that maximizes the use of existing metrics and analytical techniques developed from other tools. The basic framework laid out in this chapter illustrates the blueprint for the HSPA tool that will be outlined in detail throughout this volume. The HSPA Framework for UHC draws on the lessons from existing HSPA, and proposes using health system functions as the main components from which to carry out HSPA. In further chapters the four main functions introduced will be further disaggregated into sub-functions, which can be evaluated through specific assessment areas drawing upon indicators that exist across the HAS space. In line with previous work, the HSPA framework outlines how functions jointly contribute to the achievement of intermediate objectives and final health system goals. As the assessment areas for each function are further developed, this will outline the relationships between the functions and the health system goals more clearly.

The approach presented provides the basis for HSPA, irrespective of organizational structure or settings. It brings together conceptual HSPA literature and the practical implementation of existing instruments, putting performance at the forefront of health systems assessment. It also develops health system functions further, in terms of identifying the key sub-functions that can be measured in order to identify weaknesses in health system performance. Finally, it serves as a blueprint for the HSPA Framework for UHC (Chapter 8), which is a roadmap for assessing how a health system, or its specific functions, is performing and determines whether the level of achievement of a health system goal can be improved through adopting policies around specific health system actions.

References

- Allin S et al. (2009). Measuring equity of access to health care. In: Smith PC, et al. eds. *Performance Measurement for Health System Improvement Experiences, Challenges and Prospects. Health Economics Policy and Management*. Cambridge, Cambridge University Press:187–221
- Bloom DE, Canning D, Sevilla J (2004). The effect of ehealth on economic growth: a production function approach. *World Development*, 32(1):1–13.

- Buchan J, Dhillon IS, Campbell J, editors. (2017). *Health Employment and Economic Growth: An Evidence Base*. Geneva, World Health Organization.
- Busse et al. (2019). *Improving healthcare quality in Europe: Characteristics, effectiveness and implementation of different strategies*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Carinci F et al. (2015). Towards actionable comparisons of health system performance: expert revision of OECD framework and quality indicators. *International Journal of Quality in Health Care*, 27(2):137–146.
- Council of Europe (1997). Recommendation on development and implementation of quality improvement systems (QIS) in health care and explanatory memorandum (41st meeting, 24–26 June). Strasbourg, Council of Europe.
- Cylus J, Papanicolas I, Smith PC, eds (2016). *Health system efficiency: How to make measurement matter for policy and management*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Cylus J, Permanand G, Smith PC (2018). Making the economic case for investing in health systems. What is the evidence that health systems advance economic and fiscal objectives? Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Deaton A (2007). Income, aging, health and wellbeing around the world: evidence from the Gallup World Poll. NBER Working Paper no. 13317. National Bureau of Economic Research, Cambridge, MA. (https://www.nber.org/system/files/working_papers/w13317/w13317.pdf, accessed 9 September 2021).
- Figueras J, McKee M, eds. (2015). *Health Systems, Health, Wealth and Societal Well-being Assessing the Case for Investing in Health Systems*. Maidenhead, Open University Press.
- GBD 2015 Healthcare Access and Quality Collaborators (2017). Healthcare Access and Quality Index based on mortality from causes amenable to personal health care in 195 countries and territories, 1990–2015: a novel analysis from the Global Burden of Disease Study 2015. *Lancet*, 390(10091):231–266.
- Institute of Medicine (2001) *Crossing the quality chasm: A new health system for the 21st century*. Washington, D.C., National Academy Press.
- Institute of Medicine (US) Committee on Monitoring Access to Personal Health Care Services (1993). *Access to Health Care in America*. Washington, D.C., National Academy Press.
- Karanikolos M et al. (2013). Comparing population health. In: Papanicolas I, Smith P, eds. *Health System Performance Comparison: an agenda for policy, information and research*. Maidenhead, Open University Press.

- Kelley E, Hurst J (2006). *Health Care Quality Indicators project. Conceptual framework paper*. Paris, OECD.
- Kieny MP et al. (2017). Strengthening health systems for universal health coverage and sustainable development [published correction appears in *Bulletin of the World Health Organization* 2017;95(8):608]. *Bulletin of the World Health Organization*, 95(7):537–539.
- Klassen A et al. (2010). Performance measurement and improvement frameworks in health education and social services systems: a systematic review. *International Journal of Quality in Health Care*, 22(1):44–69.
- Kruk ME et al. (2018). High-quality health systems in the Sustainable Development Goals era: time for a revolution. *The Lancet Global Health*, 6.11:e1196–1252.
- Lessof S et al. (2019). *Rethinking Health and Wellbeing: How Health Systems Contribute to Economic and Societal Progress*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Levesque JF, Harris MF, Russell G (2013). Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *International Journal of Equity in Health*, 12:18.
- Maxwell R (1992). Dimensions of quality revisited from thought to action. *Quality in Health Care*, (1):171–177.
- Murray C, Frenk J (2000). *A WHO Framework for Health System Performance Assessment*. Geneva, World Health Organization.
- Nolte E, Merkur S, Anell A (2020). *Achieving Person-Centred Health Systems: Evidence, Strategies and Challenges*. Cambridge, Cambridge University Press.
- Papanicolas I, Smith P, eds. (2013). *Health System Performance Comparison: an Agenda for Policy, Information and Research*. Maidenhead, Open University Press.
- Smith P, Karanikolos M, Cylus J (2018). Evolution of health system performance assessment: the roles of international comparisons and international institutions. *Eurohealth* 24(2):15–18.
- Technical Working Group on Health Systems Assessment, Linking health systems assessment to performance dimensions. Meeting Report from the second face-to-face meeting., 2018. (https://www.uhc2030.org/fileadmin/uploads/uhc2030/Documents/About_UHC2030/UHC2030_Working_Groups/2017_Health_Systems_Assess_Working_Group/Second_face_to_face_HSA_Meeting_Report_Final_version.pdf, accessed 30 April 2020).
- WHO (2002). The World health report 2000 : health systems : improving performance., 2000, World Health Organisation: Geneva. (http://www.who.int/whr/2000/en/whr00_en.pdf?ua=1, accessed 22 August 2018).

WHO (2007). Everybody's business: strengthening health systems to improve health outcomes, 2007. Geneva, World Health Organization. (http://www.who.int/healthsystems/strategy/everybodys_business.pdf, accessed 22 August 2018).

WHO (2016). Working for health and growth: investing in the health workforce. Report of the High-Level Commission on Health Employment and Economic Growth. (<https://apps.who.int/iris/bitstream/handle/10665/250047/9789241511308-eng.pdf>, accessed 9 September 2021).

Governance

Dheepa Rajan, Kira Koch, Katja Rohrer, Agnes Soucat

4.1 Introduction

It is widely acknowledged that governance is central to health system functionality, but defining what “governance” means for health systems has proved challenging to researchers, policy-makers and practitioners alike. We use the lens of systems performance based on health system functions and adopt the WHO (2007) definition: “governance is ensuring [that] strategic policy frameworks exist and are combined with effective oversight, coalition-building, regulation, attention to system design and accountability”. This embodies the key functions and sub-functions discussed in this chapter.

The World Health Report 2000 introduced the concept of stewardship when describing the governance role within health systems (WHO, 2000), but since then, inconsistency in the way stewardship has been defined and applied has contributed to confusion rather than clarity (see Box 4.1).

Instead, the concept of “governance” has been more widely adopted in health literature (see Appendix 4.1). This chapter explores the notion of governance from the perspective of health system performance. It introduces the governance function and explains how it fits within the health system performance framework set out in Chapter 3. The

Box 4.1 *Stewardship and governance*

Travis et al. (2002) saw stewardship as narrower than governance and principally relevant for the health sector. Veillard et al. (2011) define stewardship as a function placed hierarchically above governance, potentially contradicting Travis et al. (2002). Finally, stewardship according to Kirigia & Kirigia (2011) involves a variety of actors whereas governance is seen as within the remit of government.

sub-functions of governance (see Table 4.1) are discussed in detail, in the context of how they can be measured through “assessment areas”, essentially topical issues within each sub-function that can be assessed in order to identify factors that contribute to overall performance of the governance function. Finally, suggestions for indicative qualitative and quantitative measures are proposed, with the caveat that many are fairly new and will require further validation and testing.

Table 4.1 *Governance sub-functions and definitions of governance*

Governance sub-functions	Corresponding section of governance definition
Policy and vision	strategic policy frameworks
Stakeholder voice	coalition-building
Information and intelligence	accountability
Legislation and regulation	effective oversight, regulation

Source: Authors' compilation.

4.2 Understanding the governance function

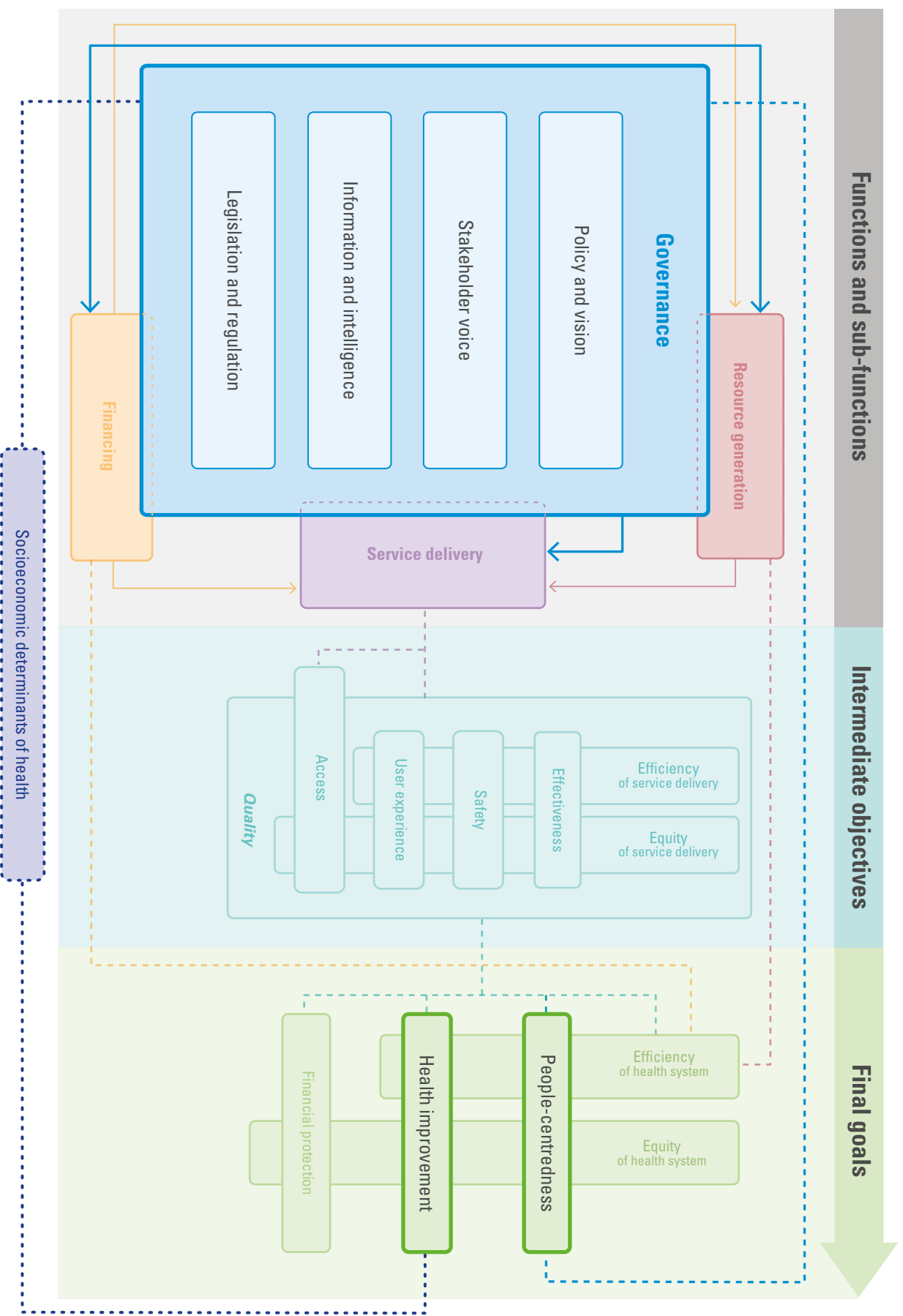
4.2.1 Where governance fits into the health system performance framework

Governance is one of the four core health system functions, and overlaps each of the other three: resource generation, financing and service delivery (Fig. 4.1). This illustrates the notion that, without some form of governance, the other three functions would operate within silos rather than within a managed and “governed” system.

Governance is arguably the most important enabling function within the health system as governance actions provide both a foundation and a lever for the resource generation, financing and service delivery functions. For this reason, causally and directly linking governance actions to be directly attributable to health system intermediate or final goals is difficult and complex; it is through the governance function’s interactions with other functions that its impact essentially plays out. Fig. 4.1 shows this by placing governance to the far left, and clearly overlapping areas with financing, service delivery and resource generation.

The governance function also works through collaboration with other sectors and stakeholders outside the health system. This scope beyond the strict confines of the health system is depicted in a dotted line (Fig. 4.1) leading to various health determinants

Fig. 4.1 Governance sub-functions



Source: Authors' compilation.

that impact health and the health system. This visualization is designed to convey the point that maximizing performance of the governance function is not dependent on the health sector alone and involves working through other sectors (such as education and environment) and so on. In essence, governance as a concept extends beyond health and, conversely, what happens beyond health affects health.

Governance is conceptualized in the HSPA Framework for UHC and in this chapter in two ways: as an overarching system-level function, and as further sub-functions within the system-level functions of resource generation, financing and service delivery. The principal differentiating factor is whether a governance action or activity affects the health system as a whole – overall governance – or whether it is specific to one of the other health system functions, and thus a “governance of” issue.

4.2.2 Conceptualizing governance

Conceptualizing governance within health systems is complicated by differing views on the component elements of governance, and how these elements are labelled. For example, accountability can be seen as part of the governance process (Baez Camargo & Jacobs, 2011), a defining element of governance (Brinkerhoff & Bossert, 2008), a governance function (Kirigia & Kirigia, 2011), a principle of governance (Siddiqi et al., 2009) or a governance strategy (Smith et al., 2012).

The past decade has seen a proliferation of governance frameworks specifically for the health sector. Sometimes a distinction is made between “governance for health”, which emphasizes the contribution of sectors beyond health that impact health systems (depicted in Fig. 4.1 with the dotted arrow going outside the health system to re-enter at the level of the final goal of “health improvement”), and “health governance” or “health system governance”, which are more narrowly focused on the health sector (Kickbusch & Gleicher, 2012).

The various frameworks (see Box 4.2 for selected examples) have different starting points and perspectives, that of the researcher, policy-maker or development partner. Sometimes this is explicit, but sometimes it is implied by the approach taken or the institution publishing the paper. The viewpoint most pertinent to system functionality and performance should be that of a policy-maker. However, in practice this perspective does not necessarily lead to frameworks that were particularly distinct from the others. In other words, regardless of perspective taken, the elements, principles, functions and/

Box 4.2 *Insights into the literature on governance frameworks*

Governance frameworks are increasingly studied (see Appendix 4.1) – in the literature, in different country settings and with different perspectives (Siddiqi et al., 2009; Baez Camargo & Jacobs, 2011; Kirigia & Kirigia, 2011; Veillard et al., 2011; Smith et al., 2012). The aim of most frameworks is to break governance down to a series of connected parts. When examining the range of frameworks, a pattern of prominent themes emerges (see Table 4.2), although the emphasis placed on each depends on the viewpoint or objective of the framework.

For example, Baez-Camargo & Jacobs (2011) emphasize systems design as an objective and highlight interactions between governance and other systems functions such as service delivery, human resources for health and medicines. They also draw attention to political economy analysis as a neglected area in other frameworks and therefore stress formal and informal relationships between both people and institutions.

For Mikkelsen-Lopez, Wyss & de Savigny (2011), the weakness of existing governance frameworks is the lack of realistic and simple indicators. They address this with an approach to governance that is problem-driven and actionable. They also focus on linkages between governance and other health system building blocks, to show that governance is difficult to disentangle from the rest of the health system.

The frameworks proposed by Siddiqi et al. (2009) and Veillard et al. (2011) address governance from both an operational and a policy level. This underlines the importance of developing frameworks that are practical and applicable and also allows for insights from country pilots. Otherwise, most frameworks targeting country governments implicitly or explicitly see their main audience as policy-makers.

Kirigia & Kirigia (2011) focus on Africa and present the “governance of health development” as a domain that comes under the “sole prerogative of the government through the Ministry of Health”. This draws more of a distinction between “governance” and “stewardship”.

Based on their broad review of the literature, the European Observatory on Health Systems and Policies suggests five governance domains in Greer, Wismar & Figueras (2016), while a targeted review of governance literature by Barbazza & Tello (2014) proposed eight sub-functions of governance.

These latter two reviews attempted to find common ground among existing frameworks and analyses, and similarly came up with a sub-set of converging topics (see Section 4.2.2 Conceptualizing governance).

or strategies all focus on a handful of topics. In fact, it is rather the angle taken on the topics themselves, and the way they are described, that differentiates a framework’s objectives and use.

A notable exception is the approach taken by the World Development Report 2004 (World Bank, 2004) and Brinkerhoff & Bossert (2008), both of which put three stakeholder groups – not the underlying elements of governance – at the forefront of their framework. They identify the three Ps: people, providers and politicians and/or

policy-makers as three principal constituencies whose interactions, both formal and informal, define health sector governance.

Following the lead of Barbazza & Tello (2014), we examine the converging topics across various governance frameworks; we however re-formulate them with the lens of an action-oriented governance function that ensures that certain activities, responsibilities and duties take place in the sector. The list of converging topics, re-formulated below to be action-oriented, can be associated principally, or solely, with overall systems governance, rather than with one or several of the other systems functions (resource generation, financing, service delivery: covered in Chapters 5, 6 and 7). The topic list in Table 4.2 is also meant to be granular enough to be easily linked to concrete activities or tasks.

Table 4.2 *Cross-walk between literature-based converging governance topics & the HSPA Framework for UHC governance sub-functions*

Literature-based converging topics	Re-formulated into sub-functions
Ensuring strategic vision and policy-making	Policy and vision
Ensuring participation/partnerships/collaboration	Stakeholder voice
Ensuring transparent, data-driven and evidence-based decisions	Information and intelligence
Ensuring legislation and regulation towards public health goals	Legislation and regulation

Source: Authors' compilation.

Equity and efficiency also feature in many governance frameworks, but attaining these goals requires input from several health system functions beyond governance (see Chapter 3). Hence, they are featured in our framework as health system outcomes (intermediate objectives or final goals), placed further to the right in the HSPA Framework for UHC.

Transparency and accountability are also prominent in various governance frameworks. We conceptualize both as outcomes of the governance function overall (see Section 4.4 Assessing the performance of the governance function), which are influenced by different sub-functions. Institutional design, which is aligned to health system goals, is also mentioned in some frameworks and adopted as a governance function outcome. This is explained in more detail in Section 4.4 Assessing the performance of the governance function.

4.3 Sub-functions

Based on the observations set out in Section 4.2 Understanding the governance function, we propose an approach in which governance is broken down to four sub-functions:

- policy and vision
- stakeholder voice
- information and intelligence
- legislation and regulation.

These are based on the primary points of similarity across existing governance frameworks and are re-purposed to reflect functionality and action orientation. This approach adopts the perspective of a national government tasked with steering the health sector towards clear goals.

As mentioned previously, these sub-functions include only the governance functionalities that are overarching and systemic in nature, and not those specific to financing, service delivery or resource generation. The link from the governance function to health system performance is largely via the other three functions, notably service delivery. Besides the governance sub-functions and overlapping “governance of” areas, specific assessment areas of the governance function and the overall appraisal of the function is elaborated in detail below.

4.3.1 Governance of financing, service delivery and resource generation

The HSPA Framework for UHC differentiates the overall governance of the health system from the governance of specific health system functions. The principle underlying the separation between overall governance of the health system and the governance of specific functions is the following: governance-related activities (decision-making, policy and rule setting, regulation) linked only to one function and contributing to the performance of that function are placed at the intersection (Fig. 4.1) between governance and another health system function. An example would be health workforce planning, which would be categorized as the “governance of resource generation” because it is specific to the resource generation function and contributes to health systems goals. Overall national health planning, however, would be part of the overall governance function because it affects and steers all activities within the health sector.

Governance that is specific to resource generation, financing and service delivery is described in more detail in the chapters focusing on those functions.

The “governance of” issues should be seen as sub-functions of health system governance but are discussed in the other (non-governance) functions chapters. For example, the governance of financing is discussed in the financing chapter because a financing function assessment would logically include its governance aspects as well. At the same time, when assessing the governance function overall, the “governance of” aspects are important elements to examine.

4.3.2 Policy and vision

This sub-function encompasses the capability and resourced capacity needed to provide a strategic vision for the health sector that is clearly articulated in a single document, a set of policies, laws and/or guidelines to which governments can be held accountable. The policy and vision sub-function is closely intertwined with the stakeholder voice sub-function as major strategic orientations for the health sector are made legitimate and implementable if a wide range of stakeholders, including government ministries/institutions, donors, international agencies, service providers, civil society organizations, community groups and the population, have been adequately brought into the policy-making process (Greer, Wismar & Figueras, 2016; Schmets, Rajan & Kadandale, 2016). Policy and vision is also closely linked to the information and intelligence sub-function because evidence is, and should be, the foundation for developing any national health policy or strategy. This sub-functions is also linked to the legislation and regulation sub-function as policies and laws go hand in hand.

WHO’s 2016 *Strategizing national health for the 21st century: a handbook* defines the aim of strategic planning as “identifying, sequencing and timing medium-term interventions for the health sector in a comprehensive way” (Terwindt & Rajan, 2016). It goes on to elaborate that health sector strategic planning should “guide activities and investments necessary for achieving... outcomes and impact”. Ideally, strategic planning serves as shared guidance with common principles applied by all actors, both public and private, to foster joint actions to drive towards set targets.

Almost all governance frameworks in health include strategic vision as a key component of health governance (WHO, 2000, 2007; Travis et al., 2002; Siddiqi et al., 2009; Baez Camargo & Jacobs, 2011; Mikkelsen-Lopez, Wyss & de Savigny, 2011; Veillard

et al., 2011; Wendt, 2012; Kaplan et al., 2013; UNEP, 2014). And most health system assessment tools include an evaluation of strategic vision through the existence (or not) of a national health strategy, or a set of clear rules, laws, norms and/or guidelines which steer the sector (UHC2030, 2017).

4.3.2.1 Intersectoral collaboration should be at the core of shaping policy and vision

Many factors exist outside the health sector that shape the health of populations and impact on health equity (WMA, 1964; WHO, 2017); this is illustrated in the dotted line exiting the governance function in Fig. 4.2 to reach the final system goal of “health improvement” through an additional pathway *outside* the health system. The definition of the health system used for the HSPA Framework for UHC (see Chapter 2) also acknowledges the need for the health sector to pro-actively influence public policies in other sectors that affect the determinants of health (WHO Commission on Social Determinants of Health, 2008). These include:

- education
- housing and urban planning
- transport and mobility
- social protection and welfare support systems
- energy and sustainable development.

Actions in these sectors impact health outcomes, regardless of the collaboration of the health sector itself. The policy and vision sub-function acknowledges this and highlights the responsibility of health stewards to engage with other sectors of government and society when formulating health strategies.

Over the past 30 years, different terms – such as multi-, inter- and cross-sectoral collaboration – have been used to describe this collaboration between health and other sectors. Various frameworks – such as health-in-all policies, whole-of-government, integrated governance, whole-of-society, and so on – underline the notion of collaborating outside health, not only within government line ministries but also beyond government actors.

In most government frameworks, multisectoral collaboration is considered a core element of governance (Kirigia & Kirigia, 2011; Veiklard et al., 2011; Kickbusch & Gleicher, 2012), merged with either the stakeholder voice, or policy and vision sub-functions (Rajan et al., 2017, 2018). We use policy and vision because, in order to perform well,

the health system's governance function should be anchored in a multisectoral mind-set and made explicit in a written policy.

In recent years, intersectoral action has received more prominence as a targeted strategy to address health inequities (Barr et al., 2008; McQueen et al., 2012; PAHO, 2015; Fisher et al., 2017). However, the evidence to date is limited. A rapid systematic review by Ndumbe-Eyoh & Moffatt (2013) reported moderate-to-no effect on health equity. They stressed that this does not imply a lack of effect but, rather, points to the need for more nuanced research (Shankardass et al., 2012; Ndumbe-Eyoh & Moffatt, 2013). A WHO analysis of 18 country case studies found some positive outcomes could be linked to intersectoral collaboration, but it was premature to draw conclusions with regards to its impact on health equity (WHO, 2008a).

4.3.3 Stakeholder voice

The engagement of stakeholders in health policy and decision-making is widely recognized as a critical dimension of the governance function (Kaufmann & Kray, 2021; Robinson, 2013; Rajan et al., 2021). This sub-function therefore revolves around the possibility for key stakeholders – such as academia, provider associations, civil society organizations, vulnerable and marginalized communities, the public – to contribute to health policy decisions.

Various modalities can be used to facilitate stakeholder engagement for meaningful deliberations. The overall objective is to provide a government interface with lay citizens, communities, different population sub-groups, civil society organizations, etc. (Rajan et al., 2021) in order to capture their views and expectations. A strong “stakeholder voice” sub-function therefore facilitates more people-centred policies that reflect population needs and ultimately hold the government accountable (Rohrer & Rajan, 2016).

As a result, the stakeholder voice sub-function is closely linked to the policy and vision sub-function, with health policies reflecting people's preferences and needs. Participatory governance platforms can also serve as an entry point for collaboration with non-health sectors (Rajan et al., 2017, 2018).

Almost all governance frameworks for health consider stakeholder participation and voice to be critical for enhanced decision-making (Brinkerhoff & Bossert, 2008; Lewis & Pettersson, 2009; Siddiqi et al., 2009; Baez Camargo & Jacobs, 2011; Kirigia &

Kirigia, 2011; Mikkelsen-Lopez, Wyss & de Savigny, 2011; Veillard et al., 2011; Kickbusch & Gleicher, 2012; Smith et al., 2012; Greer, Wismar & Figueras, 2016). Participation is also acknowledged as a key element in most health system assessment tools (UHC2030, 2017). Recurring participation-related themes and areas of assessment are:

- whether broad stakeholder participation is assured
- which stakeholders are involved
- how their power relations are balanced out
- what functional dialogue platforms exist to include population, community and stakeholder voices in policies and plans.

Baez-Camargo & Jacobs (2011), Mikkelsen-Lopez, Wyss & de Savigny (2011) and Siddiqi et al. (2009) link participation with consensus-building and explore to what extent a government is willing to cooperate with stakeholders in order to determine goals and policy design. While Siddiqi et al. (2009) consider the level of decentralization in decision-making as relevant for participation, both Brinkerhoff & Bossert (2008) and Kirigia & Kirigia (2011) focus on community participation with respect to health services reform and delivery.

A growing body of literature is exploring the links between participation and equity, service access and health outcomes. Studies confirm that increased social participation can improve preventive and curative care access as well as health status (Fiorati et al., 2018). Although this is hampered by the lack of a common definition for participation (Rifkin, 2014; Harris et al., 2018), social participation cannot be ignored as an important driver of health equity through a range of actions (Boyce & Brown, 2017; Francés & La Parra-Casado, 2019), including:

- raising awareness of health rights in disadvantaged groups
- giving voice to the vulnerable to influence policies that affect them
- promoting responsiveness and the rule of law

In summary, participation is a critical sub-function of governance that demands that governments engage pro-actively, ideally through institutionalized mechanisms, with a wide range of population groups and stakeholders to better inform decision-making processes for health.

4.3.4 Information and intelligence

This sub-function enables the collection, analysis and use of data, information and intelligence of and for the health system. International literature and government frameworks agree that the collection and use of information are essential to improve health services and health system performance (Lippeveld, Sauerborn & Bodart, 2000; WHO, 2000, 2009; PAHO, 2002). As this is a sub-function of governance, it focuses on the managerial culture and political will needed to support an environment where evidence generation and use is the norm, where changes within the health system and their effects on systems performance are constantly monitored, learned from and acted upon (Aqil et al., 2017). A well-functioning information system is pivotal to those objectives (WHO, 2008b), as is its accessibility for a wide range of health system stakeholders who can collectively use the information in service of health system goals (WHO, 2009).

WHO's 2016 *Strategizing national health for the 21st century: a handbook* identifies monitoring, evaluation, and review as critical steps to ensure the implementation of any strategic direction set by health system stewards (O'Neill et al., 2016). These steps are taken in relation to the health system as a whole, so fall primarily within the remit of a central health authority or, in some countries, a regional government. Any facility-level or local-level monitoring, evaluation and review of health services would fall under service delivery management and be considered under the governance of the service delivery function.

The literature yields little empirical evidence to support a cause-and-effect relationship between the strength of information system governance and improvements in health system outcomes. The most obvious connection is the idea that the increased availability of disaggregated data – by key population characteristics, through a well-functioning information system – will lead to the implementation of more equitable policies (Nolen et al., 2005). Health information systems also help to identify and understand inefficiencies within the system (Cylus, Papanicolas & Smith, 2017; EU, 2019), which has the potential to prompt actions that improve the utilization of resources (Yip & Hafez, 2015). Nguyen, Bellucci & Nguyen (2014) show that rigorous reporting, monitoring and evaluation can improve administrative efficiency; but these all depend on the performance of health information mechanisms, and the accessibility of timely and high-quality information on systems bottlenecks.

The somewhat indirect link between the information and intelligence sub-function and systems outcomes implies the notion that, ultimately, the use of intelligence enables other functions to influence performance (de Cos & Moral-Benito, 2014), which is largely the case for most governance sub-functions.

In summary, this sub-function is about the organizational culture, policies and decisions with regard to the necessary infrastructure and capacities needed to enable data-driven decision-making at a systems level.

4.3.5 Legislation and regulation

Legislation and regulation are issues that several governance frameworks see as key levers for the achievement of health system goals (Travis et al., 2002; Baez Camargo & Jacobs, 2011; Siddiqi et al., 2011; Kickbusch & Gleicher, 2012). Examples of this are human rights frameworks and rights-based health laws. The World Health Report 2010 emphasizes the necessity of legislation and regulation (WHO, 2010), which we defined as a sub-function, as “rules to govern the behaviour of actors”. However, the Report cautions that laws and regulations alone are not enough. Compliance among health actors must be supported by a more effective information base, support from different population groups, and incentives through policy design. Each of these is directly linked to the sub-functions of information and intelligence, stakeholder voice, and policy and vision, further affirming the interconnectedness of the different governance sub-functions.

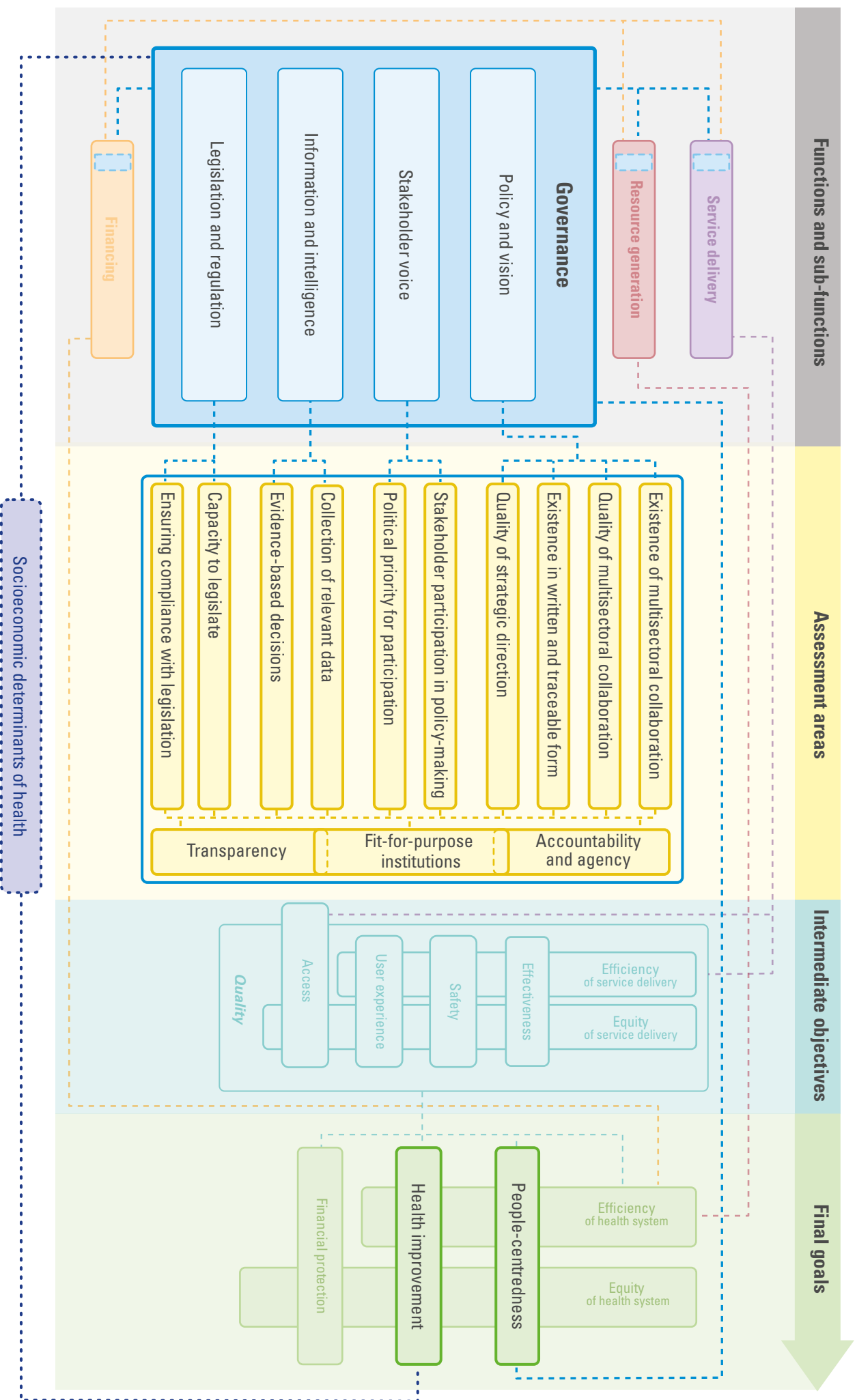
The Pan-American Health Organization’s Essential Public Health Function #6 is “strengthening the institutional capacity for regulation and enforcement in public health” (Pan-American Health Organization, 2002), while the United Nations Development Programme principles for good governance for sustainable development includes “justice and effective rule of law (15)” (UNEP, 2014). Law and regulations – particularly in relation to policies, vision and strategic direction – are also included in the governance section of many health system assessment tools (Rechel, Maresso & van Ginneken, 2019; USAID, 2017).

4.4 Assessing the performance of the governance function

4.4.1 Performance of the governance function overall

In Fig. 4.2, accountability and agency, fit-for-purpose institutions as well as transparency represent good performance of the governance function overall, meaning that the

Fig. 4.2 Assessing governance



Source: Authors' compilation.

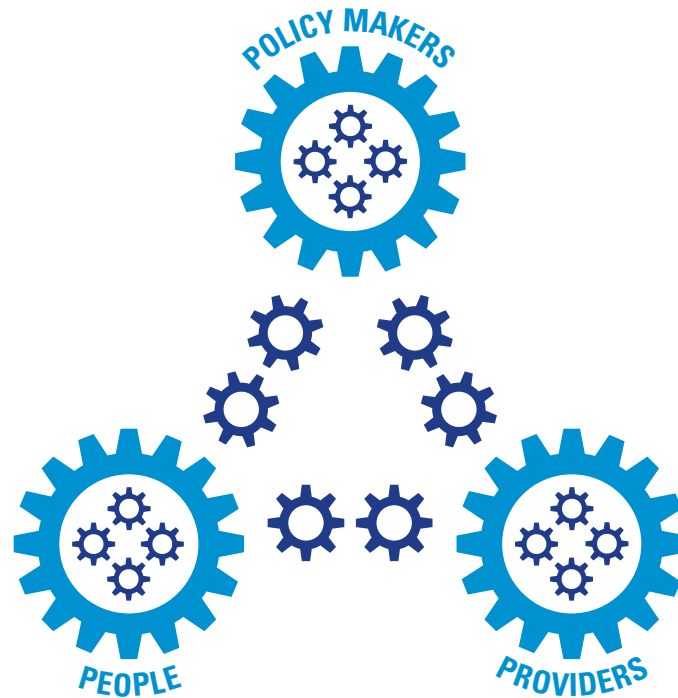
different governance assessment areas assist in understanding and appraising how far the governance function is leading to transparency, fit-for-purpose institutions, and accountability and agency. Put differently, if governance of the health system is functioning well (overall governance + the governance of service delivery, resource generation and service delivery), then the system is likely to have institutions that are enabled to fulfil their stated purpose, it is likely to be transparent and accountable, and lends agency to populations and communities to co-produce health.

4.4.1.1 Accountability and agency

We conceptualize accountability here in terms of an accountable system that is principally determined by how well governance functions, that is, how well the system is governed overall as well as how well the governance of financing, service delivery and resource generation performs.

At the heart of accountability is an accountability relationship, that is, someone is accountable to someone else for something. Here, those who are governing the health system – the policy-makers and politicians according to the governance framework adapted from the World Development Report 2004 (World Bank, 2004), see Fig. 4.3 – are accountable to the population for steering the health system towards public health goals. Following Fig. 4.3, providers are also accountable to both policy-makers and people. Put differently, if the governance sub-functions are working well, then health system stewards are fulfilling their accountability role.

Within the social science paradigm, agency refers to the capacity of individuals to make their own free choices and act independently (Barker, 2003). Within health specifically, accountability and agency are linked to the concept of empowerment. This is usually viewed in terms of how well users of a health system can pro-actively seek services when needed, engage in self-care and voice their views and experiences to ensure responsive health policy-making. Empowerment is the social action process that builds the confidence needed to move towards collective goals (Rajan et al., 2021), and it is this process that the governance function should foster and support to ensure populations and communities have a say in decisions concerning their health. By implication, this requires health systems to address social and economic determinants of health – such as social class, religion, sex, ethnicity, ability and customs – which may limit a participant's ability to influence decision-making.

Fig. 4.3 Governance actor triangle

Source: Bigdeli et al. (2020).

4.4.1.2 Fit-for-purpose institutions

Health systems that are ably governed form the foundation on which strong institutions are built; they are systems that protect public health goals, and facilitate other health system functions' good performance.

As highlighted in a number of governance frameworks (Travis et al., 2002; WHO, 2007; Kickbusch & Gleicher, 2012; Wendt, 2012), this requires organizational adequacy and system design. Travis et al. (2002) expand on this concept with the notion of effective institutions “being able to remove essentially structural constraints to equitable and efficient resource use”, highlighting the way the governance function works through other functions to influence broader systems goals, such as equity and efficiency. In 2007, WHO described this governance outcome as “ensuring a fit between strategy and structure” (WHO, 2007), thereby linking it closely to the policy and vision sub-function.

The literature examining the capacity of public sector institutions acknowledges the importance of their functional requirements and political pre-conditions. It also emphasizes the close interaction between capacity and the legislation and regulation

sub-function, via the enforcement of institutional rules and guidelines. This regulation and enforcement is seen as being integral to institutional functionality.

Institutional design is explicitly assessed in three HSA tools, underlining its important role across different approaches (Wendt, 2012; Rechel, Maresso & van Ginneken, 2019; USAID, 2017). These tools focus on the institutional organization of the health system, and how health institutions regulate, facilitate and enable health sector activities.

In summary, this governance outcome is centred on the existence of functional institutions that enable the achievement of public health goals, and involves the resources and support required to undertake the activities needed to achieve the institution's stated goals. What the institution does in terms of its mandate and technical area would be subject to other functions. For example, if the institution is a health facility, its operations would fall under the service delivery function, but if the institution is a health insurance fund, its operations would lie within the financing function.

4.4.1.3 Transparency

Similar to accountability, transparency is a feature of several governance frameworks (Siddiqi et al., 2009; Baez Camargo & Jacobs, 2011; Mikkelsen-Lopez, Wyss & de Savigny, 2011; Barbazza & Tello, 2014; Greer, Wismar & Figueras, 2016; Greer et al., 2019), attesting to its tenable link to the notion of governance. However, as is often the case, conceptualizations of this relationship differ across frameworks, with some viewing it as a core element of governance and others as an outcome of good governance. In Fig. 4.2, we adopt the latter conceptualization because transparency does not necessarily reflect functionality so it does not fit the sub-function criteria detailed in Chapter 2. Furthermore, any assessment of transparency would involve appraising several governance sub-functions; in other words, transparency is dependent on overall governance as well as governance of the financing, service delivery and resource generation functions. This points to transparency being an outcome of a governance function that is performing well, rather than a sub-function.

Transparency is essentially about the “public availability of usable information” (Vian, 2020), which ultimately “allows scrutiny of public actors and their decisions”. To a large extent, this governance outcome is influenced by direction from the policy and vision sub-function and input from the stakeholder voice sub-function. Essentially, wider stakeholder involvement in decision-making ensures that a system is more transparent.

In addition, an information and intelligence sub-function that is performing well promotes a culture of evidence-based, data-driven decision-making which, in turn, leads to a more transparent health system.

4.4.2 *Policy and vision*

4.4.2.1 **Assessment**

Information or guidance on how best to assess this sub-function in practice is sparse. However, the key features are encapsulated in four areas for assessment:

- **Assessment area #1** Whether a strategic vision exists in written and traceable form (through documents, directives, regulations, guidelines, etc.)
- **Assessment area #2** Whether the strategic vision is of good quality viewed in terms of implementability
- **Assessment area #3** Existence of multisectoral collaboration
- **Assessment area #4** Quality of multisectoral collaboration.

Most country HSA reports provide regular information on whether a strategic direction or vision for the health sector is formally set and documented. Some go further, and discuss the process of developing a strategic vision, and this touches on the sub-functions of stakeholder voice and information and intelligence. However, national HSAs do not necessarily yield information on the quality of that strategic vision, as set out in documents, laws or guidelines. The same is true for intersectoral collaboration – its existence is covered in most HSA country reports, but there is little detail on its quality.

A fairly recent, but still small, literature base addresses the impacts of governance interventions, including policy and vision, on various health system outcomes. For example, a review of 30 articles by Ciccone et al. (2014) concluded that “health policy-making that aligns and empowers diverse stakeholders” was a governance area that facilitated health sector actions and led to improvements in service quality and access. By juxtaposing the sub-functions of stakeholder voice and policy and vision, their conceptualization of governance as “health policy-making that aligns and empowers diverse stakeholders” underlines the interconnections between different governance sub-functions. Indeed, the same review goes on to clarify that the positive effects of policy and vision can be catalysed by elements common to other governance sub-functions and outcomes. These include participation, “use of data in decision-making” and “overall system transparency”,

highlighting possible synergies between the different governance sub-functions, and interactions with outcomes such as transparency. This allows maximization of the performance of each specific sub-function.

An innovative, quasi-experimental, study conducted in Afghanistan prospectively introduced governance interventions, such as “setting a shared strategic direction” in a small number of provinces and compared service access and coverage to provinces where this was not done (Shukla, 2018). Despite its limitations, their regression analysis indicated a strong link between having a vision and improved health sector outcomes. However, it is important to note that the mechanism between this sub-function and any health outcomes is nevertheless through the service delivery function as improvements in quality and access are only possible via the implementation of a strategic vision, and implementation sits within the realm of service delivery.

4.4.2.2 Indicative measures

WHO’s Global Programme of Work monitoring provides one of the few databases with recent data for several indicators on strategic vision and strategic policy-making. This holds information from 194 countries, drawn from qualitative questions answered by the WHO Country Offices – sometimes in consultation with the Ministry of Health – and reported annually to the WHO Executive Board since 2015. These simple yes/no questions are:

- Does your country have a national health policy/strategy/plan (NHPSP)?
- Is the NHPSP aimed at moving towards UHC?
- Does the NHPSP clearly mention indicators allowing for regular monitoring and evaluation of the sector?

If there is a collection of different health policies or plans, rather than a single vision or strategy, these indicators can easily be reframed to reflect different country contexts:

- Does your country have a comprehensive set of policies, laws and/or guidelines that give a strategic vision to the sector?
- Does your NHPSP and/or comprehensive set of policies/laws/guidelines have elements of UHC as its central tenet?
- Does your NHPSP and/or comprehensive set of policies/laws/guidelines indicate how the sector will be monitored and evaluated?

This last question is aimed at assessing the quality of the NHPSP (assessment area #2) whereas the first two aim to establish whether or not a country's government has a strategic vision for the health sector (assessment area #1). The information provided in the last question on NHPSP quality through monitoring and evaluation could also be used to assess the sub-function "information and intelligence".

The existence of intersectoral collaboration is frequently reported, but there is very little information on the quality of these collaborations in terms of which stakeholders are involved, what capacity and resources are dedicated towards intersectoral collaboration and the responsibilities and targets of the various actors involved.

Two indicators from the WHO social determinants of health monitoring are proposed to examine the existence of some collaboration with other sectors as well as the quality of these collaboration in terms of improving health outcomes. These are:

- The number of national policies for health and well-being that address at least two priority determinants of health, and involve at least two sectors, in target populations
- The composite index combining four assessed aspects of Health in All Policies in a country: whether a country has (a) favourable conditions for Health in All Policies development; (b) policy implementation; (c) monitoring and evaluation and (d) training and capacity building.

4.4.3 Stakeholder voice

4.4.3.1 Assessment

Broad stakeholder involvement and their participation in policy development is an integral element of reviewed HSA tools. However, the depth of analysis varies. For example, the FHI 360 tool emphasizes constituency involvement in decision-making, and devotes a whole section to community participation (Wendt, 2012). Extensive assessment questions are also embedded in the USAID tool (USAID, 2017). While the HiT series considers the involvement of populations from a service delivery angle, and assesses whether patients are involved in treatment decisions (Rechel, Maresso & van Ginneken, 2019).

Given its prominence in tool templates, it is striking that stakeholder participation in decision-making is somewhat neglected in country HSA reports. Some reports explicitly mention stakeholder participation in the development of a national health policy, but provide little if any detail on the stakeholders who participated, how their inputs were solicited and how they actually influenced decision-making.

The depth and levels of influence in decision-making must be evaluated in order to ascertain the quality of participation. This is mostly through qualitative assessments and, ideally, more in-depth methods such as observations and focus groups. To examine whether a government enables stakeholder involvement in decision-making, we propose two qualitative assessment areas, which draw on information that already exists or is easy to gather, that are not usually covered in HSAs. These are:

- Assessment area #1: whether national health policies, strategies, plans, guidelines, or laws are developed with the broad participation of key stakeholders
- Assessment area #2: whether stakeholder participation is a priority for the government in general (whether an enabling environment exists for participation).

4.4.3.2 Indicative measures

As stakeholder voice is barely mentioned in country HSA reports, we propose the inclusion of two new questions:

- Which stakeholders are involved in national health planning and review processes?
- Which mechanisms and dialogue platforms are in place to ensure involvement of key stakeholders in the health decision-making process?

Most of the information required to answer them would have to be collected as new primary data, or sought as secondary data in a targeted and consistent way. But these are simple questions that could feasibly be posed during an HSA, or answered through a desk review of key documents and publications.

As suggested by the literature (WHO Commission on Social Determinants of Health, 2008; Siddiqi et al., 2009; Wendt, 2012; Rohrer & Rajan, 2016; WHO, 2016; Rechel, Maresso & van Ginneken, 2019; USAID, 2017), in order to evaluate the breadth of participation and whether it could be skewed towards one group or another, the first question should also consider the range of stakeholders and include:

- different line ministries and institutions
- academia
- provider organizations, associations
- civil society organizations, advocacy groups (both patient groups and rights focused), grassroots organizations
- population groups and/or the general public
- vulnerable, marginalized and excluded population groups
- other stakeholders, such as health insurance bodies, members of parliamentary health committees, union representatives, private sector representatives.

The second question builds on the first, but aims to get a sense of how far participation is a priority for the government (WHO Commission on Social Determinants of Health, 2008; Wendt, 2012; USAID, 2017).

One data point where some information can be found, lies within the WHO Global Programme of Work indicators, which are routinely collected for WHO's 194 Member States. This is a simple yes/no statement that evaluates the involvement of stakeholders in health decision-making:

- The development or update of national health policies, strategies, plans, guidelines, or laws is done with the broad participation of key stakeholders.

4.4.4 Information and intelligence

4.4.4.1 Assessment

Good performance of this sub-function leads to decision-makers and health system stakeholders who have robust health data, information and intelligence at their disposal to help steer the health system. Likewise, the effective response of policies, strategies and plans to population health and health system challenges should be based on scientific evidence.

Information and intelligence therefore form a core governance sub-function because intelligence should be generated in a way that enables decision-makers to identify needs and challenges as well as to evaluate the impact of decisions and interventions.

Based on the above, the key assessment areas are:

- Assessment area #1: whether a government is committed to collecting relevant health data for decision-making
- Assessment area #2: whether decisions are largely data-driven and evidence-based.

Almost all HSA tools use an adapted version of the Health System Building Block approach whereby intelligence and information aspects are either captured through a separate Health Information System building block, or as part of the monitoring and evaluation component within the respective building block, such as governance, for example.

Country HSA reports focus their assessment on the procedural aspects of health information systems such as challenges around the use of data for planning, budgeting and quality assurance, as well as on technical aspects of data generation and its challenges. Overall, more emphasis is given to assessment of the strengths and weaknesses of monitoring and reporting systems than is given to assessing the government's overall ability to ensure data are generated and used. An example of this is the impact that uneven data quality has on its use for decision-making. Yet the broader question of a government ensuring the qualitative collection and use of information is usually not mentioned.

As a result, the governance aspects of the information and intelligence are often assessed implicitly rather than explicitly, or they are integrated within a broader and more detailed information system assessment.

4.4.4.2 Indicative measures

With regard to assessing this sub-function, the *Toolkit on Monitoring Health System Strengthening* (WHO, 2009) suggests looking at evaluations of country health information systems to assess the existence, and functionality, of a number of proxies. These potential indicators of a government's commitment to collect health data relevant for decision-making are:

- health surveys
- birth and death registrations
- census
- health facility reporting
- health system resource tracking
- capacity for analysis, synthesis and validation of health data.

The USAID-funded MEASURE Evaluation project (Measure Evaluation, 2021) provides further insights into health information system use for governance via the following proposed qualitative indicators:

- country has a health sector monitoring and evaluation plan
- country has a health information system policy (yearly) or strategic plan
- country has a set of core health indicators (updated yearly).

A broad HSA perspective can be taken with the following assessment questions, adapted from MEASURE:

- Does the country have a health sector monitoring and evaluation plan or a documented methodology for monitoring health sector outputs and outcomes?
- Does the country have a Health Information System policy and/or strategic plan? This question reflects on the existence of planned activities for strengthening the Health Information System by, for example, ensuring alignment between different data systems
- Does the country have a set of core health indicators (updated yearly)?

In addition, WHO's Global Programme of Work monitoring collects the following indicator for all Member States:

- National health policy, strategy, plan (or health laws and regulations) clearly mentions indicators allowing for regular monitoring and evaluation

From an HSA perspective, these questions could be complemented by indicators and/or qualitative questions on the functioning of the health information system as this would help appraise how well the generation and use of intelligence are being handled.

4.4.5 Legislation and regulation

4.4.5.1 Assessment

The heart of this sub-function is about the capacity to develop laws and rules, and enforce them through regulatory measures to ensure compliance across both the public and private sectors. Any assessment of this sub-function would need to focus on those two key capacities:

- Assessment area #1: the capacity to develop and enforce laws and regulations to govern the behavior of actors towards protecting and improving public health
- Assessment area #2: ensuring compliance with those rules, laws, and regulations

These assessment areas are in line with the legislation and regulation issues highlighted in various health governance frameworks and HSA tools (see Table 4.3). The health governance frameworks address the same issues generically, whereas the HSA tools tend to be more specific and have a decided health focus.

Table 4.3 *Legislation and regulation within governance frameworks and HSA tools*

Governance frameworks	HSA tools
Develop and enforce legislation and regulation to protect the public's health	Regulation of third-party payers, providers, human resources, pharmaceuticals, devices and aids, capital investment; accreditation and licensing
Ensure compliance with rules	Procedures for reporting, investigating, and adjudicating misallocation or misuse of resources

Source: Authors' compilation.

4.4.5.2 Indicative measures

We propose the following assessment questions, which are drawn largely from the forthcoming WHO *UHC legal mapping: country survey instrument* (WHO, forthcoming). In essence, the performance of the legislation and regulation sub-function can be assessed by examining whether the government has adequate capacity, political will and support to both develop and enforce legislation and regulation for the benefit of public health. These two performance areas can be assessed by the proposed questions below.

Develop legislation and regulation to protect the public's health

Assessment questions:

- Are existing health laws aligned with the government's health policies and plans?
- Do national human rights laws prohibit discrimination on the basis of sex, gender identity, disability status, race/ethnicity and sexual orientation in areas such as education, employment and housing?

Both questions help to measure the extent of a government's vision and capacity to use legal instruments to protect the public's health. The first assessment question is taken from the WHO country survey instrument (WHO, forthcoming), and is designed to show the coherence between health sector policies and plans and health laws. This assumes the public health is the primary concern of government health institutions and health ministry policies and plans but, in practice health laws are usually formulated by a broader range of actors who may prioritize or consider other interests and challenges. Demonstrating coherence between the policies and laws can help to reveal both the place and priority given to health in a country, as well as the capacity of the Ministry of Health (and other public health institutions) to influence public policies in favour of health.

The second assessment question is drawn from the WHO's 2016 *Global monitoring of action on the social determinants of health: a proposed framework and basket of core indicators* (WHO, 2016). This measure is not readily available in global databases but can easily be integrated into a health systems assessment. If necessary, and where data are available, the HSA could use a similar indicator to the question: does the country have national laws that guarantee (a) non-discrimination in financial services on the basis of sex; and (b) non-discrimination orientation in marriage or civil partnerships by sex, gender identity and sexual orientation (WHO, 2016).

Ensure compliance with legislation and regulation to protect the public's health

Assessment question:

- to what extent are measures taken to effectively implement and enforce health legislation?
- to what extent are executive and judicial actors resourced to implement and enforce health legislation?

In essence, these questions seek to capture the extent to which health legislation and regulation is not only developed but also enforced.

The WHO country survey instrument explains the first assessment question as a measure of “the capacity, capability and collaboration of executive agencies and judicial bodies tasked with implementing and enforcing health legislation...[including] steps...taken to effectively implement and enforce health laws in a consistent, predictable and proportionate manner” (WHO, forthcoming).

Enforcing legislation and regulation hinges on adequate resources to ensure compliance with laws and regulations. The second assessment question therefore addresses executive and judicial enforcement institutions such as regulatory bodies, ministries and courts and their functionality through resources.

4.5 Conclusions

Governance is clearly a core health system function that broadly influences all other functions and intermediate outcomes and final goals. Its centrality for systems performance has led to its inclusion, in various forms, within different frameworks. In this book, we define governance through core sub-functions, which have been formulated specifically to reflect an action-oriented functionality for which a person(s) or institution can be held accountable:

- policy and vision
- stakeholder voice
- information and intelligence
- legislation and regulation.

Key areas of assessment are proposed for each of the sub-functions, with a macro, whole-of-systems assessment in mind. Assessment areas are therefore those issues within each sub-function that have the most impact on performance of the governance function, namely on accountability and agency, transparency and fit-for-purpose institutions.

Measuring performance of health governance sub-functions is generally an underdeveloped field, with huge scope for fine-tuning assessment questions, moving into quantitative scoring, and undertaking case studies and country pilots that test the indicative measures proposed in this chapter. Besides efforts to improve these measures, country health systems assessments could also move towards more, and better, information on the governance function, whether through a simple qualitative description or, ultimately, with streamlined indicators.

References

Aqil A et al. (2017). *Health systems strengthening – monitoring, evaluation, and learning guide. Measure Evaluation*. Chapel Hill. (https://www.measureevaluation.org/resources/publications/tr-17-167c/at_download/document).

- Baez Camargo C, Jacobs E (2011). *A framework to assess governance of health systems in low income countries. Working paper series No. 11*. Basel, Institute on Governance.
- Barbazza E, Tello JE (2014). A review of health governance: definitions, dimensions and tools to govern. *Health Policy*, 116(1):1–11.
- Barker C (2003). *Cultural studies: Theory and practice*. Thousand Oaks (CA), Sage Publications.
- Barr V et al. (2008). *Health equity through intersectoral action: an analysis of 18 country case studies*. Ottawa, Public Health Agency of Canada and Geneva, World Health Organization.
- Bigdeli M et al. (2020). Health system governance: the missing links. *BMJ Global Health*, 5:e002533.
- Boyce T, Brown C (2017). *Engagement and participation for health equity*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Brinkerhoff DW, Bossert TJ (2008). Health governance: concepts, experience, and programming options. *Health Systems*, 20:20.
- Ciccone DK et al. (2014). Linking governance mechanisms to health outcomes: a review of the literature in low-and middle-income countries. *Social Science & Medicine*, 117:86–95.
- de Cos PH, Moral-Benito E (2014). Determinants of health-system efficiency: evidence from OECD countries. *International Journal of Health Care Finance and Economics*, 14(1):69–93.
- Council of Europe (2012). *Recommendation CM/Rec(2012)8 of the Committee of Ministers to member States on the implementation of good governance principles in health systems*. Strasbourg, Council of Europe.
- Cylus J, Papanicolas I, Smith PC (2017). *How to make sense of health system efficiency comparisons?* Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- EU (European Union) (2019). *Expert Group on Health System Performance Assessment. Tools and methodologies to assess the efficiency of health care services in Europe*. Luxembourg, Publications Office of the European Union.
- Fiorati RC et al. (2018) Intersectorality and social participation as coping policies for health inequities-worldwide. *Gaceta Sanitaria*, 32:304–314.
- Fisher M et al. (2017). Intersectoral action on SDH and equity in Australian health policy. *Health Promotion International*, 32(6):953–963.
- Francés F, La Parra-Casado D (2019). *Participation as a driver of health equity*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.

- Greer SL, Wismar M, Figueras J (2016). *Strengthening health system governance: better policies, stronger performance*. Report No.: 0335261345. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Greer SL et al. (2019). *It's the governance, stupid! TAPIC: a governance framework to strengthen decision making and implementation*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Harris J et al. (2018). Searching for the impact of participation in health and health research: challenges and methods. *BioMed Research International* 2018:ID 9427452
- Kaplan AD et al. (2013). Human resource governance: what does governance mean for the health workforce in low-and middle-income countries? *Human Resources for Health*, 11(1):6.
- Kaufmann D, Kray A (2021). Worldwide governance indicators: voice and accountability. Washington, D.C., World Bank. (<http://info.worldbank.org/governance/wgi>, accessed 17 August 2021).
- Kickbusch I, Gleicher D (2012). *Governance for health in the 21st century*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Kirigia JM, Kirigia DG (2011). The essence of governance in health development. *International Archives of Medicine*, 4(1):11.
- Lewis M, Pettersson G (2009). *Governance in health care delivery: raising performance*. Washington, D.C., World Bank.
- Lippeveld T, Sauerborn R, Bodart C (2000). *Design and implementation of health information systems*. Geneva, World Health Organization.
- Measure Evaluation (2021). Indicators of the Status of a Health Information System: Measure Evaluation. (<https://www.measureevaluation.org/his-strengthening-resource-center/country-profiles-1/indicators-of-the-status-of-a-health-information-system.html>, accessed 17 August 2021).
- McQueen DV et al. (2012). *Intersectoral governance for health in all policies*. Geneva, International Union for Health Promotion and Education (IUHPE), World Health Organization (WHO), and European Observatory on Health Systems and Policies.
- Mikkelsen-Lopez I, Wyss K, de Savigny D (2011). An approach to addressing governance from a health system framework perspective. *BMC International Health and Human Rights*, 11(1):13.
- Ndumbe-Eyoh S, Moffatt H (2013). Intersectoral action for health equity: a rapid systematic review. *BMC Public Health*, 13(1):1056.

- Nguyen L, Bellucci E, Nguyen LT (2014). Electronic health records implementation: an evaluation of information system impact and contingency factors. *International Journal of Medical Informatics*, 83(11):779–796.
- Nolen LB et al. (2005). Strengthening health information systems to address health equity challenges. *Bulletin of the World Health Organization*, 83:597–603.
- O’Neill K et al. (2016). Chapter 9: Monitoring, evaluation and review of national health policies, strategies and plans. In: Schmets G, Rajan D, Kadandale S, eds. *Strategizing national health in the 21st century: a handbook*. Geneva, World Health Organization.
- PAHO (2002). *Public health in the Americas: conceptual renewal, performance assessment and bases for action*. Washington, D.C., Pan American Health Organization.
- PAHO (2008). *The essential public health functions as a strategy for improving overall health systems performance: trends and challenges since the public health in the Americas initiative, 2000–2007*. Washington, D.C., Pan American Health Organization.
- PAHO (2015). *Intersectoral action and health equity in Latin America: an analytical approach*. Washington, D.C., Pan American Health Organization.
- Rajan D et al. (2017). The triangle that moves the mountain: nine years of Thailand’s National Health Assembly (2008–2016). Geneva, World Health Organization.
- Rajan D et al. (2018). Public voice and participatory governance in the health sector: status quo and way forward. In: Hsu J et al. eds. *Health system transformation in the Islamic Republic of Iran: an assessment of key health financing and governance issues*. Geneva, World Health Organization.
- Rajan D et al. (2021). *Voice, agency, empowerment: handbook on social participation for universal health coverage*. Geneva, World Health Organization.
- Rechel B, Maresso A, van Ginneken E (2019). *Health Systems in Transition: template for authors 2019*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Robinson M (2013). A look into the participation & human rights category 2013. (<https://mo.ibrahim.foundation/news/2013/a-look-into-the-participation-human-rights-category>, accessed 17 August 2021).
- Rohrer K, Rajan D (2016). Chapter 2: Population consultation on needs and expectations. In: Schmets G, Rajan D, Kadandale S, eds. *Strategizing national health in the 21st century: a handbook*. Geneva, World Health Organization.
- Rifkin SB (2014). Examining the links between community participation and health outcomes: a review of the literature. *Health Policy and Planning*, 29(suppl_2):98–106.
- Schmets G, Rajan D, Kadandale S (2016). *Strategizing national health in the 21st century: a handbook*. Geneva, World Health Organization.

- Shankardass K et al. (2012). A scoping review of intersectoral action for health equity involving governments. *International Journal of Public Health*, 57(1):25–33.
- Shukla M (2018). Impact of a health governance intervention on provincial health system performance in Afghanistan: a quasi-experimental study. *Health Systems & Reform*, 4(3):249–266.
- Siddiqi S et al. (2009). Framework for assessing governance of the health system in developing countries: gateway to good governance. *Health Policy*, 90(1):13–25.
- Smith PC et al. (2012). Leadership and governance in seven developed health systems. *Health Policy*, 106(1):37–49.
- Terwindt F, Rajan D (2016). Chapter 5: Strategic planning: transforming priorities into plans. In: Schmets G, Rajan D, Kadandale S, eds. *Strategizing national health in the 21st century: a handbook*. Geneva, World Health Organization.
- Travis P et al. (2002). Towards better stewardship: concepts and critical issues. Geneva, World Health Organization.
- UHC2030 (2017). Background paper: Harmonizing and Aligning health systems assessments (HSAs): review of HSA tools and approaches. Geneva, International Health Partnership for UHC.
- UNEP (2014). *Discussion paper - governance for sustainable development - integrating governance in the post-2015 development framework*. Geneva, United Nations Development Programme.
- USAID (2017). Explore USAID’s health system assessment approach v3.0: United States Agency for International Development (USAID). (<https://www.hfgproject.org/the-health-system-assessment-approach-a-how-to-manual/>, accessed date 17 August 2021).
- Veillard JHM et al. (2011). Health system stewardship of national health ministries in the WHO European region: concepts, functions and assessment framework. *Health Policy*, 103(2–3):191–199.
- Vian T (2020). Anti-corruption, transparency and accountability in health: concepts, frameworks, and approaches. *Global Health Action*, 13(suppl.1):1694744.
- Wendt D (2012). *Health System Rapid Diagnostic Tool. Framework, operational Guide, and metrics to measure the strength of priority health system functions*. Durham, NC, Family Health International.
- World Bank (2004) World Development Report 2004: Making services work for poor people. Washington, D.C., World Bank.
- WHO (2000). *The world health report 2000: health systems: improving performance*. Geneva, World Health Organization.
- WHO (2007). *Everybody’s business – strengthening health systems to improve health outcomes: WHO’s framework for action*. Geneva, World Health Organization.

- WHO (2008a). *Health equity through intersectoral action: an analysis of 18 country case studies*. Geneva, World Health Organization.
- WHO (2008b). *Framework and standards for country health information systems*. Geneva, World Health Organization.
- WHO (2009). *Toolkit on monitoring health systems strengthening*. Geneva, World Health Organization.
- WHO (2010). *The world health report 2010: health systems financing: the path to universal coverage*. Geneva, World Health Organization.
- WHO (2016). *Global monitoring of action on the social determinants of health: a proposed framework and basket of core indicators – consultation paper*. Geneva, World Health Organization.
- WHO (2017). *Adelaide Statement on health in all policies*. Geneva, World Health Organization.
- WHO (forthcoming). *UHC legal mapping: country survey instrument*. Geneva, World Health Organization.
- WHO Commission on Social Determinants of Health (2008). *Closing the gap in a generation: health equity through action on the social determinants of health*. Geneva, World Health Organization.
- WMA (1964). Declaration of Helsinki. Helsinki, World Medical Association.
- Yip W, Hafez R (2015). *Improving Health System Efficiency: Reforms for improving the efficiency of health systems: lessons from 10 country cases*. Geneva, World Health Organization.

Appendix 4.1: Overview of key governance frameworks

Author/ Institution	Name of framework	Governance elements
Baez-Camargo C. & Jacobs E., 2011	A framework to assess governance of health systems in low income countries	<p>Governance inputs:</p> <ul style="list-style-type: none"> · Participation · Consensus building · Strategic vision and system design <p>Governance process:</p> <ul style="list-style-type: none"> · Accountability · Transparency · Control of corruption <p>Governance outcomes:</p> <ul style="list-style-type: none"> · Responsiveness · Equity · Efficiency
Brinkerhoff D. & Bossert T., 2008	Health governance: concepts, experience, and programming options.	<ul style="list-style-type: none"> · Relationships: Client/citizen versus state versus providers · Improving the policy process · Enhancing participation · Increasing accountability, transparency, anticorruption
Kickbusch I. & Gleicher D., 2012	Governance for health in the 21st century	<p>Smart governance for health and well-being:</p> <ul style="list-style-type: none"> · Collaboration · Engagement · Mix of regulation and persuasion · Independent agencies and expert bodies · Adaptive policies, resilient structures and foresight
Kirigia J. & Kirigia D., 2011	The essence of governance in health development	<p>Functions of health development governance:</p> <ul style="list-style-type: none"> · Public health leadership and management · Rule of health-related laws · Community participation and responsiveness · Effective internal and external partnerships for health · Horizontal and vertical equity in health systems · Efficiency in resource allocation and use · Accountability and transparency in health development · Evidence-based decision-making · Ethical practices in health research and service provision · Macroeconomic and political stability
Mikkelsen-Lopez I., Wyss K. & de Savigny D., 2011	An approach to addressing governance from a health system framework perspective	<p>Governance elements:</p> <ul style="list-style-type: none"> · Participation and consensus orientation · Strategic vision and system design · Addressing corruption · Being transparent · Being accountable

Author/ Institution	Name of framework	Governance elements
Siddiqi S. et al., 2009	Framework for assessing governance of the health system in developing countries: gateway to good governance	Governance principles: <ul style="list-style-type: none"> · Strategic vision · Participation and consensus orientation · Rule of law · Transparency · Responsiveness · Equity and inclusiveness · Effectiveness and efficiency · Ethics
Smith P. et al., 2012	Leadership and governance in seven developed health systems	Strategies: <ul style="list-style-type: none"> · Priority setting · Performance monitoring · Accountability
Veillard J. et al., 2011	Health system stewardship of national ministries in the WHO European region: concepts, functions and assessment framework	Health system stewardship functions: <ul style="list-style-type: none"> · Define vision for health and strategy and policies to achieve better health · Exert influence across all sectors and advocate for better health · Ensure good governance supporting achievement of health systems goals · Ensure alignment of system design with health system goals · Make use of legal, regulatory and policy instruments to steer health system performance · Compile, disseminate and apply appropriate health information and research evidence
Greer SL., Wismar M. & Figueras J., 2016	Strengthening health system governance: better policies, stronger performance	<ul style="list-style-type: none"> · Transparency · Accountability · Participation · Integrity · Capacity
Lewis M. & Pettersson G., 2009	Governance in health care delivery: raising performance	Governance and performance fundamentals: <ul style="list-style-type: none"> · Standards · Incentives · Information · Accountability
Travis P. et al., 2002	Towards better stewardship: concepts and critical issues	Domains/sub-functions of stewardship: <ul style="list-style-type: none"> · Generation of intelligence · Formulating strategic policy direction · Ensuring tools for implementation: powers, incentives and sanctions · Building coalitions / building partnership · Ensuring a fit between policy objectives and organizational structures and culture · Ensuring accountability

Author/ Institution	Name of framework	Governance elements
WHO, 2007	Everybody's business – strengthening health systems to improve health outcomes: WHO's framework for action	Policy guidance Intelligence and oversight Collaboration and coalition-building Regulation System design Accountability
PAHO, 2008	The essential public health functions as a strategy for improving overall health systems performance: trends and challenges since the public health in the Americas initiative, 2000–2007	Public health functions: <ul style="list-style-type: none"> · Monitoring, evaluation and analysis of health status · Surveillance, research, and control of risks and threats to public health · Health promotion · Social participation in health · Development of policies and institutional capacity for public health planning and management · Strengthening of public health regulation and enforcement strategy · Evaluation of promotion of equitable access to necessary health services · Human resource development and training in public health · Quality assurance in personal and population-based health services · Research in public health · Reduction of the impact of emergencies and disasters on health
Council of Europe, 2012	Recommendation CM/Rec(2012)8 of the Committee of Ministers to Member States on the implementation of good governance principles in health systems	Enablers/Principles: <ul style="list-style-type: none"> · Equity · Participation · Organizational arrangements · Accountability · Integrity · Transparency Outcomes: <ul style="list-style-type: none"> · Responsiveness · Effectiveness · Efficiency · Quality · Sustainability Foundations/Core values: <ul style="list-style-type: none"> · Human rights · Rule of law · Democracy

Resource generation

Dheepa Rajan, Katja Rohrer, Kira Koch, Teena Kunjumen, Khassoum Diallo, Adriana Velazquez Berumen, Claudia Nannei, Judith Sprunken

5.1 Introduction

Resource generation ensures that a health system has all the inputs it needs to function. These inputs take many forms: health workers, medical devices, medical equipment, infrastructure, pharmaceuticals, vaccines, consumables, medical supplies, etc. The role of the resource generation function is to ensure that these inputs are produced, procured, made available or maintained at the place and time they are needed.

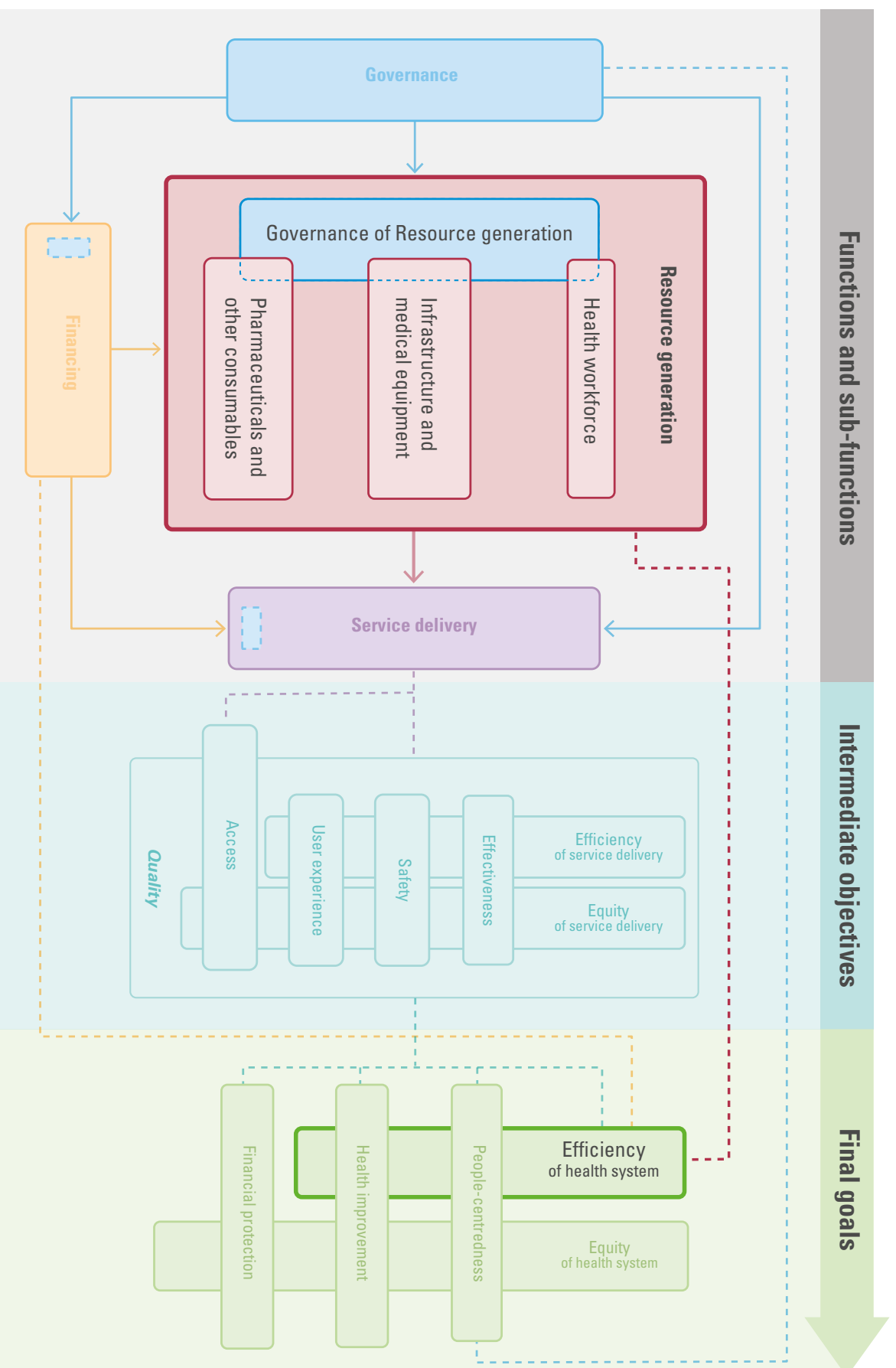
This chapter explores how best to assess this important function, keeping in mind what resource generation is, and what it is not. The crux of this function rests on an optimal balance between the inputs; it is therefore the interaction of the different resources, or sub-functions (see Box 5.1), with each other that helps enable the service delivery function and thereby influence intermediate objectives and overall systems performance.

In addition to the three sub-functions shown in Box 5.1, which are discussed in Section 5.3 Sub-functions, we propose assessment areas in Section 5.4 Assessing the performance of resource generation, which reflect the issues that are most important for resource generation and have the greatest impact on health system performance. The chapter ends with indicative measures that could be used to capture how well the assessment areas are functioning. As this information is largely drawn from health system assessments it can be either qualitative or quantitative – and, ideally, it is both.

Box 5.1 *Sub-functions of resource generation*

- Health workforce
- Infrastructure and medical equipment
- Pharmaceuticals and other consumables

Fig. 5.1 Resource generation sub-functions



Source: Authors' compilation.

5.2 Understanding the resource generation function

5.2.1 Where resource generation fits into the health system performance framework

As a function of the health system, resource generation is placed in the framework between governance and service delivery (Fig. 5.1). The governance function enables the resource generation function, and resource generation feeds into, and enables, the service delivery function (Adams et al., 2003). It is important to emphasize that resources are created and maintained within the resource generation function, but their interplay and use manifests itself within service delivery. In other words, the influence that resource generation has on the health system's ability to achieve its intermediate and final goals stems primarily from its impact on the service delivery function.

A notable exception is the final system goal of efficiency, where a direct link can be made from the resource generation function. In essence, efficiency is about maximizing output with the level of available inputs, in terms of both quantity and quality. The resource generation function comprises inputs such as health workforce, medical equipment and infrastructure – which represent fixed costs for a health system which need to be paid for and maintained, whether they are used or not. Costs associated with potentially idle resources represent a large share of some countries' overall health expenditure and present an efficiency problem without activating the service delivery function. Efficiency is also challenged when too few resources are produced, or when resources are mismatched to need. Efficiency gains in the system can be generated through procurement strategies, e.g. bulk purchases for large quantities of inputs such as medicines, supplies and consumables to reduce the unit cost. For these, and other, reasons system inputs may not even enter the service delivery function.

Excluding efficiency, resource generation is largely enabled by governance, and works through service delivery to influence intermediate and final system goals.

5.2.2 Conceptualizing resource generation

The concept of resource generation as a function of the health system was first introduced within the paradigm of health systems performance by WHO in its seminal World Health Report 2000 (WHO, 2000). The report sought to measure performance in all WHO Member States, using a series of key indicators. Controversially, it ranked countries in terms of health system performance, generating a heated debate around

the selection and comparability of indicators, the areas for performance assessment and the wisdom of measuring performance with poor data availability (Maes, 2000; Reinhardt & Cheng, 2000; Braveman et al., 2001; Walt & Mills, 2001; Nord, 2002; Richardson, Wildman & Robertson, 2003).

Lost in this debate was a recognition of the value of crystallizing the concept of health system functions and, within this, defining resource generation as a function that brings together all of the health system inputs. The World Health Report (WHO, 2000) identified three resource generation inputs that require capital investment and/or recurrent expenditure:

- human resources
- physical capital
- consumables.

The type of expenditure that a resource requires is described as a significant defining feature of each input. Maintenance is distinguished as a recurrent expenditure, with human capital needing “maintenance” through continuing education and on-the-job training; and physical capital requiring the upkeep and repair of equipment and buildings. It pointed out that maintenance is crucial for long-term performance because “with proper handling and maintenance, buildings and vehicles lose their value more slowly. Without care and maintenance, health capital deteriorates rapidly” (WHO, 2000).

A 2003 follow-up publication to the 2000 Report took up the resource generation concept and expanded it to include intellectual resources more explicitly, although it did not specify how this differed from human resources (Adams et al., 2003). The authors do, however, re-emphasize the distinction between investment and recurrent costs within the resource generation function – stressing that the former has long-term health system implications, and can be coloured by politics.

In 2007, the WHO outlined the health system building block framework (WHO, 2007a). Three out of the six building blocks fully or partially fit into the resource generation function because they must be generated and maintained:

- health workforce
- medical products, vaccines and technologies
- health information.

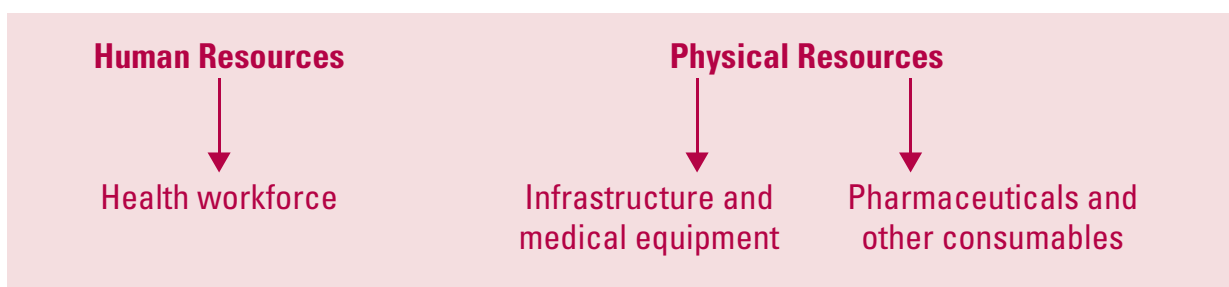
A more recent adaptation of the World Health Report 2000 comes from a Canadian proposal suggesting a more pro-active contribution by its provinces to the country's overall health system performance (Verma & Bhatia, 2016). The researchers recommend investing in the resource generation function by focusing on health worker training and health information technology. Within the Canadian context, they see this as a means to achieve efficiency, better population health and enhanced patient engagement. They single out areas within the human and physical resource dimensions that they believe need targeted improvement to improve systems performance, offering an example of a practical country application of the resource generation concept.

5.3 Sub-functions

We take the World Health Report 2000's differentiation of human and physical resources as a starting point to define the sub-functions of resource generation (see Fig. 5.2).

Keeping the assessment of functionality and performance of health systems in mind, we retain the World Health Report distinction between physical resources, which need capital investment, and those, such as infrastructure and medical equipment, which, in addition, need maintenance. And we add a further distinction for resources that are used in a one-off or disposable way, such as pharmaceuticals and other consumables. We also use the more specific term "health workforce" to mean human resources for health (see Fig. 5.2).

Fig. 5.2 *Human versus physical resources*



Source: Authors' compilation.

This leads directly on to the three resource generation sub-functions, which are discussed in more detail below:

- health workforce
- infrastructure and medical equipment
- pharmaceuticals and other consumables.

5.3.1 *Health workforce*

For the HSPA for UHC framework, we use WHO's broad 2009 definition of the health workforce: "all persons engaged in actions whose primary intent is to enhance health" (WHO, 2009). This interpretation explicitly values both formal and informal activities undertaken in the health sector, and expands on the World Health Report 2000 definition, which focused more on formally contracted health workers, called "clinical and non-clinical staff" (WHO, 2000).

The World Health Report 2000 sees the link between health workforce and systems performance as "depend[ing] ultimately on the knowledge, skills and motivation of the people responsible for delivering services" (WHO, 2000). The financial importance of this link is highlighted in the 2006 World Health Report which estimated that countries spend roughly 42% of total general government health expenditure on their health workforce (WHO, 2006).

The broader literature looking at health workforce does not, generally, provide a precise definition for this workforce. Instead, the meaning is implied via the research objectives and perspective taken by each report. If the objective is assessment and planning of the health workforce, then the implicit definition encompasses formal health worker cadres (Mokwena et al., 2007; OECD, 2008, 2016, 2019; Ono, Lafortune & Schoenstein, 2013; Boulton et al., 2014; Merçay, Dumont & Lafortune, 2015). Whereas, if skill set and functionality of the workforce are the focus then the implicit definition often includes informal caregivers as well as the formal workforce (Coronado, Koo & Gebbie, 2014).

Where a definition of health workforce is explicitly given, it is most frequently the WHO one (Tawfik & Kinoti, 2006; WHO, 2021a) – which emphatically includes informal care. Initially, the UHC2030 TWG also discussed health workforce, in the context of formal employment, and the preliminary thinking was to separate informal care out as a sub-function and to call it social resources. However, social resources did not meet the sub-function criteria (see Chapter 2). In addition, the WHO definition, and more

recent literature on social care, clearly point to community and patient involvement as a legitimate part of health care (Zigante, 2018). Those changes in the perception of health care, as well as the failure of social resources to meet sub-function criteria, led to the decision to subsume informal care under the health workforce sub-function of resource generation.

5.3.2 Infrastructure and medical equipment

Infrastructure and medical equipment are physical resources that give health providers, and users, the tools needed to provide effective and efficient health services. Resource generation achieves its maximum performance through the interplay of a large qualified health workforce, equipped with drugs and consumables, working in adequately built and equipped health facilities (Adams et al., 2003). Various WHO resolutions – such as WHO60.29 on health technologies adopted in 2007 – have highlighted the importance of physical resources for health-related development goals (WHO, 2007b).

The World Health Report 2000 refers to infrastructure and medical equipment as “physical capital”, one of the two health system inputs that define physical resources (WHO, 2000). Rather than adopting terminology that emphasizes the economic value of assets, we take the perspective of functionality and systems performance, and rename this sub-function: infrastructure and medical equipment.

Infrastructure and medical equipment are characterized by the large capital investments required to build health infrastructure, such as health facilities, and to equip health facilities with medical equipment, such as magnetic resonance imaging scanners. Another common characteristic is the recurrent costs for maintenance until depreciation reaches an obsolete, or non-functional, status. These two characteristics differentiate the infrastructure and medical equipment sub-function from the consumables and pharmaceuticals sub-function – as the latter does not require a large initial investment or ongoing maintenance because these are one-off or disposable items.

5.3.2.1 Infrastructure: definition and concept

The health infrastructure literature does not yield a common definition of infrastructure within the health sector. Instead, the differing perspectives offered encompass both a broad and a more narrow definition. For the HSPA Framework for UHC, we adopt a relatively narrow definition, based on the elements in Table 5.1, with further clarification

in Box 5.2. This perspective views infrastructure primarily as the physical structures, including its supporting systems*, needed to provide health care (Adams et al., 2003; Ademiluyi & Aluko-Arowolo, 2009; WHO, 2021b). This focuses on buildings, power and water supply, and other physical and technological resources such as non-medical equipment and computers.

Table 5.1 *Health infrastructure: key components*

(i)	Buildings and non-medical equipment; often labelled as physical infrastructure (Scholz, Ngoli & Flessa, 2015)
(ii)	Utilities and supply systems to make (i) functional, such as water and electricity
(iii)	Disposal systems for medical waste
(iv)	Information and communication technology infrastructure
(v)	Transport/logistics infrastructure

Source: Authors' compilation.

On the other hand, the broader view (Baker & Koplan, 2002; Powles & Comim, 2003; Scholz, Ngoli & Flessa, 2015; ODPHP, 2021), gives infrastructure a scope which, depending on interpretation, could include:

- the health workforce
- institutional capacity and knowledge
- all the physical, technical and organizational assets needed to deliver health services.

The more expansive definitions include not only the facility and its equipment, but also facility management, stressing that the latter is necessary for the good performance of all the components of infrastructure (Scholz, Ngoli & Flessa, 2015).

For a number of reasons, we take the narrower infrastructure definition. First, the resource generation function is about creating and making the resource available, whereas its use sits with other functions – primarily service delivery. Second, in terms of segregating specific impact on performance, it is useful to delineate three clear sub-functions of resource generation, rather than combining them all into infrastructure, as the broader definitions have done. Third, as highlighted earlier, infrastructure has properties that are wholly distinct from human resources, pharmaceuticals and consumables – and this warrants separating the three as sub-functions, which contribute to the overall performance of the resource generation function in different ways.

* Supporting systems include services such as power and electricity, water and sanitation, telecommunications, etc. We avoid the word “services” so as to not confuse readers with “health services”.

Box 5.2 *How do information and communication technology and transport/logistics fit into the infrastructure and medical equipment sub-function?*

Given its growing policy relevance due to the digital revolution, some clarification of category (iv), information and communication technology (ICT), is necessary (see Table 5.1) (WHO, 2019a). Along the same principles described earlier, the provision of functional and accessible ICT platforms would fall under the sub-function infrastructure and medical equipment. However, its use, often labelled as digital health or eHealth* (WHO, 2019a), would sit mostly in the service delivery function. For example, having a DHIS-2 health information platform in place at facility level would be part of the infrastructure and medical equipment sub-function of resource generation. However, its use to improve patient care would be within the service delivery function. And the decisions needed to ensure the interoperability and interconnectedness of digital technologies would be a governance of action with the resource generation function. The general health systems (and public sector) culture influencing which data gets collected and used for decision-making would be within the information and intelligence sub-function of overall governance. The point is that ICT is split across different functions.

The same principle applies to category (v), transport/logistics, which, adopting the same principle, is also spread across different health system functions. The presence of transport and logistics infrastructure falls under infrastructure and medical equipment, but the task of delivering pharmaceuticals and consumables to health facilities would be part of the service delivery function.

* WHO (2019) ehealth definition: the use of information and communication technology in support of health and health-related fields.

5.3.2.2 Medical equipment: definition and concept

We follow the spirit of WHO's definition of medical equipment, which differentiates between medical devices that do, and do not, require maintenance. Medical equipment falls under the former, while consumables and single-use devices come under the latter. More specifically, WHO defines medical equipment as a device that requires "calibration, maintenance, repair, user training and decommissioning – activities usually managed by clinical engineers" (GHMT, 2012).

Other definitions exist that, as is the case with infrastructure, give "medical equipment" and associated terms a broader purview. Sometimes, the all-encompassing term "health care technology" is used. This spans the application of organized knowledge and skills in the form of devices, medicines, vaccines, procedures and systems. This terminology puts the actions within the health workforce sub-function, such as knowledge and skills – and the service delivery function, which covers the application of procedures – within the category of medical equipment (WHO, 2007b).

For this reason, we adopt a narrower interpretation that helps to clarify boundaries between the different sub-functions of resource generation. Medical devices which do not depreciate or require maintenance are part of the pharmaceutical and other consumables sub-function, along with single-use or disposable devices.

Thus, the infrastructure and medical equipment sub-function provides the material platform that enables service delivery, while providing health workers with the technology necessary for effective and efficient health care.

5.3.3 *Pharmaceuticals and other consumables*

WHO sees pharmaceuticals as a fundamental component of medicine, emphasizing that they should be safe, effective, and quality-assured as well as prescribed and used rationally (WHO, 2021c).

Consumables are described in the World Health Report 2000 as an umbrella term that includes pharmaceutical products.

In line with the WHO approach, we treat pharmaceuticals and consumables in the same way, as both are used and consumed once – or when used more than once, they are disposable – and neither requires capital investment or maintenance. Single-use medical devices are considered to be consumables, because they are also intended for one-time, or temporary, use (WHO, 2000). For the same reason, vaccines would also fall under this category.

In the literature, policy documents and HSA tools, terms such as pharmaceutical system, pharmaceutical management system, pharmaceutical supply system and pharmaceutical sector are used interchangeably (Roberts & Reich, 2011; Hafner et al., 2017). All of these labels suggest that pharmaceuticals are part of an ecosystem that ensures safety, efficacy and quality. This spectrum includes medicine research and development, management, manufacturing, procurement, supply and use. Many of these actions are, for purposes of this HSPA for UHC framework, part of other health system functions or sub-functions. For instance, management would be governance of resource generation (see further explanation in Section 5.3.4, Governance of resource generation); pharmaceutical use would be part of service delivery; and domestic manufacturing would be part of the pharmaceuticals sub-function of resource generation because it involves making drugs available for use.

In short, the sub-function labelled pharmaceuticals and consumables focuses on the manufacturing and procurement processes needed to ensure that these products are available where and when they are needed. Procurement can be differentiated from purchasing, which is a sub-function of financing and focuses on purchasing services. A health service brings together several inputs, including pharmaceuticals, whereas procurement is concerned with procuring a good to input into the health service.

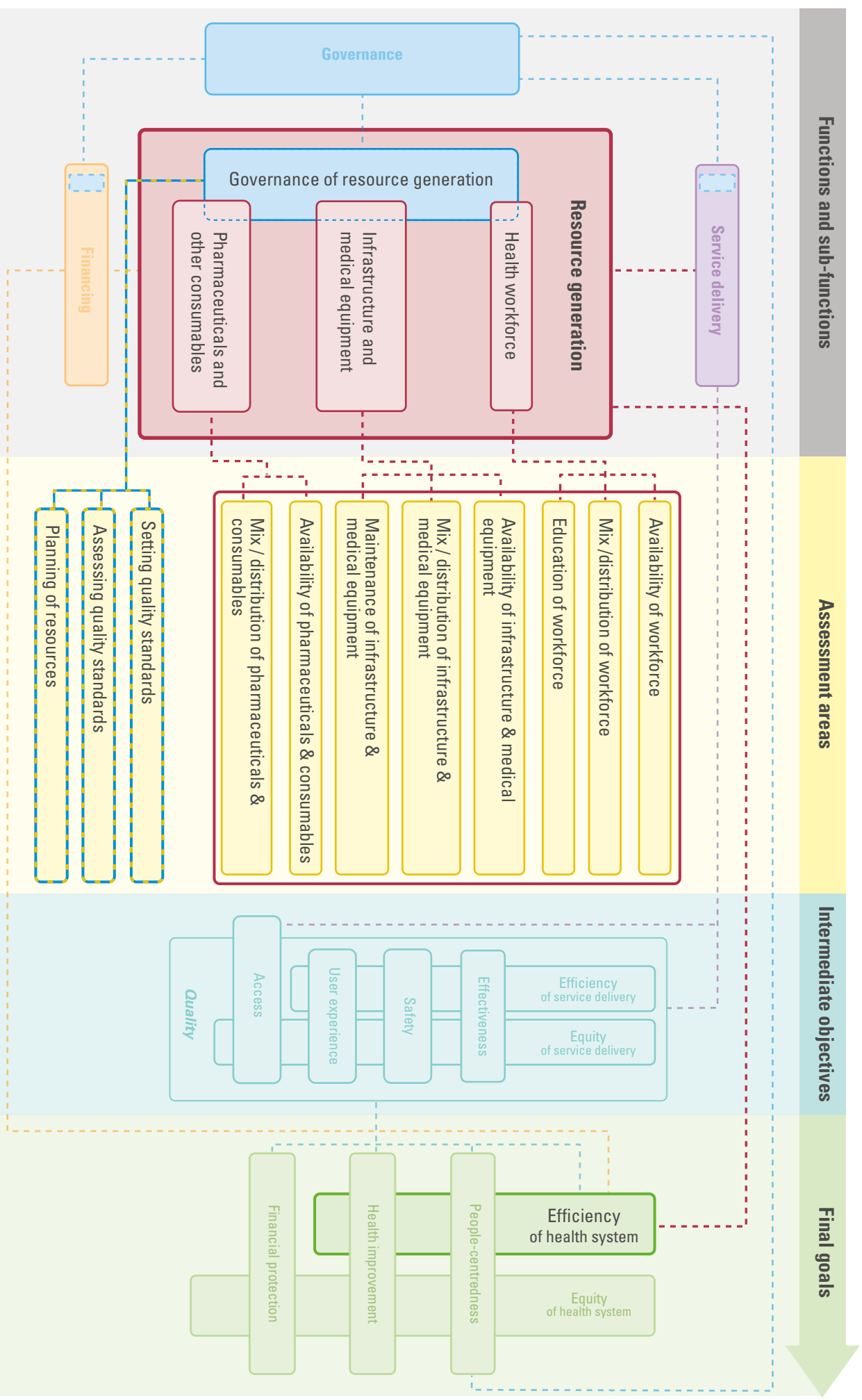
5.3.4 Governance of resource generation

As depicted in Fig. 3.1 in Chapter 3, the governance function overlaps resource generation, as well as the financing and service delivery functions. This intersection includes governance matters, which are specific to resource generation, as opposed to those involved with the overall system governance functions. The governance-of elements of resource generation centre on a wide range of tasks associated with planning for resources. These include health workforce planning and forecasting; setting quality standards, such as self-regulation of health providers by professional associations; and monitoring those standards, via regular inventory management of large medical equipment, for example. This sub-function is complex and far-reaching in terms of the performance of the resource generation function because it involves many parties, including patients, health providers, manufacturers and salespeople; can have serious consequences, at worst death, if not done well; and requires more than informal controls to be effective (Management Sciences for Health, 2012a).

5.4 Assessing the performance of the resource generation function

As mentioned previously, the performance of the resource generation function is greatly affected by the balance between the different inputs. Indeed, one of the main challenges of this function is finding the optimal input balance in a constantly changing political, social and demographic environment. This balance lies in the constant interaction of different inputs. For example, adequate equipment and drugs are needed to maximize the performance of the health workforce; maximizing the performance of medical equipment depends on how it is maintained and used; and pharmaceuticals must be considered in the context of the entire input environment. Hence, maximizing the potential of each resource, or sub-function – in order to maximize its contribution to overall performance – will involve interactions with other resources. As a result, when this function performs well, it creates an effective lever to enable the service delivery function (see Chapter 7).

Fig. 5.3 Assessing resource generation



Source: Authors' compilation.

5.4.1 Health workforce

5.4.1.1 Assessment

We propose measuring the performance of the health workforce sub-function by these assessment areas (see Fig. 5.3):

- availability of the workforce
- distribution/mix of the workforce
- education of the workforce.

The availability of health workers with the skills to provide services is positively associated with a number of intermediate objective and final systems goals (Frankenberg, 1995; Aiken et al., 2002; Shi et al., 2003; Staton et al., 2007; Chang et al., 2011), including quality, access, efficiency and overall health.

These links to the service delivery function and its performance are illustrated by studies that show that improving the availability of health workers increases service coverage (Kruk et al., 2009; WHO, 2019b). This point is significant because, overall, the literature indicates that while health worker supply can influence various overarching systems objectives, a more robust association can be seen when the goals are more closely linked to the service delivery function. For example, there is a solid evidence base for improved overall health in terms of mortality and morbidity, a fairly strong one for coverage and access, but less documented information exists as to effects on efficiency, equity and people-centredness.

The mix and distribution of the health workforce in terms of location, age, sex and multi-disciplinary teams all play a role in providing optimal health service delivery and systems performance. The health system goal of equity, in particular, is highlighted in studies on the geographic distribution of the health workforce, emphasizing the need for parallel policies and actions to increase both the availability and distribution of essential workforce cadres (Mantzavinis et al., 2003; Zhou et al., 2015; Rabbanikhah et al., 2018; Witthayapipopsakul et al., 2019).

A recent evidence analysis by an EU Expert Panel found that interventions that influence health workforce staff mix – such as task shifting within multi-disciplinary teams – can lead to better quality of care and reduced costs with no negative impact

on health outcomes (Kringos et al., 2019). Different studies examining staff mix interventions – ranging from primary care workforce increases to advanced roles for different health cadres – have reported increased access to care (Farris et al., 2010; Mapp, Hutchinson & Estcourt, 2015; Carter et al., 2016). In general, the empirical evidence behind the impact of such interventions is currently lagging. However, there is consensus in the academic and policy literature that the changing patterns of disease, technological advances and the global shortage of health workers require a balanced mix of health staff and skills to ensure health systems performance (Kringos et al., 2019).

The effectiveness of in-service and continuing education for health workers has been examined in recent systematic reviews and meta-analyses in terms of improved clinical knowledge, attitudes, skills, practice behaviour and clinical outcomes (Bloom, 2005; Mansouri & Lockyer, 2007; Marinopoulos et al., 2007) – all areas which can be linked to the intermediate or final systems goals of health care quality and overall health, working through the service delivery function. The reviews have all found some degree of effectiveness in all of the criteria, with varying results based on the type of continuing education conducted (for example, interactive versus non-interactive; print versus live media; simulations).

5.4.1.2 Indicative measures

Health workforce data over the past few decades have been relatively scarce and inconsistent across countries. The WHO *Global Strategy on Human Resources for Health: Workforce 2030*, which was adopted by Member States at the World Health Assembly in 2016, called for more coherent action to strengthen health workforce evidence and knowledge using clear milestones and targets (WHO, 2016a).

WHO's National Health Workforce Accounts (NHWA) was established in 2017 as a response to the Global Strategy with the explicit objective of harmonizing and improving the quality of country workforce data (2017a). The NHWA is based on the Health Labour Market Framework (Sousa et al., 2013) and its main areas of measurement align closely to the three health workforce performance assessment areas we propose.

Overall, in terms of data availability in both publicly accessible databases and information contained within most HSAs, health workforce stock is the most ubiquitous. For the assessment area of mix and distribution, the picture is more blurred. Almost all of the HSAs reviewed for this book addressed this area with a qualitative

Table 5.2 *Indicative measures for health workforce availability, distribution/mix and education*

INDICATIVE MEASURE	DEFINITION
Availability	
Health worker density at national level	Density of health workers per 10 000 population at national level, by occupation
Health worker density at sub-national level	Density of health workers per 10 000 population at sub-national level, by occupation
Distribution/mix	
Existence of advanced nursing roles	<p>Existence of advanced nursing roles (Yes/No/Partly)</p> <p>This indicator is measured, or supported, by the following capability questions:</p> <ol style="list-style-type: none"> 1. Is there a commonly accepted definition of nurse practitioner? 2. Is there another commonly accepted definition of other types of nurses working in advanced roles? 3. Are there formal requirements to become a nurse practitioner or other type of advanced practice nurse in terms of specified training, qualifications, experience, certification/registration, etc.? 4. Are there ad hoc/local methods for nurses being trained on the job to acquire specific skills that could lead to their employment in advanced roles?
Specialist surgical workforce	Density of specialist surgical workers, per 100 000 population.
Family medicine practitioners	Density of family medicine practitioners per 100 000 population.
Health worker distribution by age group	Percentage of active health workers in the given age groups, by occupation (age groups considered are the following: <25, 25–34, 35–44, 45–54, 55–64, ≥ 65 years), by occupation
Female health workforce	Percentage of female health workers in active health workforce, by occupation
Education	
Continuing professional development	<p>Existence of national systems for continuing professional development (Yes/No/Partly). The following questions should guide a response to this indicator:</p> <ol style="list-style-type: none"> 1. Are there existing national and/or sub-national systems for continuing professional development (CPD)? 2. If national and/or sub-national systems for CPD exist, are they compulsory? 3. If compulsory, are they linked to relicensing? 4. For occupations that have a national and/or sub-national system for CPD, is it integrated into national education plans for the health workforce, for that occupation?
In-service training	<p>Existence of in-service training as an element of national education plans for the health workforce, aligned with the national health plan (Yes/No/Partly)</p> <p>The following questions should guide a response to this indicator:</p> <ol style="list-style-type: none"> 1. Is in-service training integrated into larger national education-wide sector policies, strategies and plans? 2. Does in-service training consider and take into account national policies, strategies and plans for transforming professional, technical and vocational education and training? 3. Does in-service training consider and take into account national policies, strategies and plans for adult learning and higher education?

description – with some providing quantitative information on the distribution of specialist and generalist skills. HSAs do not always address the question of how health workers are distributed across the different levels of care, although they usually include a qualitative discussion on the different types of health worker categories, and their place in the health system.

More detailed information on each of the indicative measures are provided in Appendix 5.1.

5.4.2 Infrastructure and medical equipment

5.4.2.1 Assessment

Following the same approach taken with the health workforce sub-function, in order to measure performance of the infrastructure and medical equipment sub-function, we propose using the assessment areas:

- availability
- distribution/mix
- maintenance.

The lack of available health infrastructure and medical equipment is often cited as a barrier to high-performing health care (Hsia et al., 2012), while its availability is positively associated with access to health, quality, safety and efficiency. However, given that infrastructure and medical equipment represent the material platform on which service delivery rests – and health services are delivered by health workers – much of that positive association derives from its interaction with the health workforce (WHO, 2000; Adams et al., 2003; Lenel et al., 2005; Temple-Bird et al., 2005; Chaudhry et al., 2006; Mahfoud, Barkany & Biyaali et al., 2017). Indeed, Scholz, Ngoli & Flessa (2005) express concern that although much research attention is paid to the health workforce, very little is paid to health infrastructure, both areas must be addressed in tandem to improve service delivery outcomes.

Undoubtedly, certain health services cannot be provided at all, and certainly not safely, without available and functional medical equipment. WHO emphasizes the need for adequate management of equipment inventory in order to monitor equipment functionality

and ensure safety and effectiveness (O'Connor, 2011), underlining how performance is impacted by the interaction between the governance of resource generation, pharmaceuticals and other consumables as well as infrastructure and medical equipment.

The performance dimension of efficiency is influenced by the interplay between infrastructure and medical equipment with governance of resource generation, as well as health workforce. The procurement and effective and appropriate management of medical equipment, using it to its maximum capacity, and using it correctly, all drive efficiency gains in the system (Lenel et al., 2005). These gains can be further leveraged through information and communication technologies, as those technologies increase storage and performance capacities and accelerate the processing time frames (WHO, 2011a).

A sizeable body of literature examines the impacts of infrastructure distribution on health care access. Many studies underline the geographic barriers to access that confront the rural poor when health facilities are too far away, or too difficult to reach. Some also examine the contribution of those barriers to inequities (Khan et al., 2001; Valdivia, 2002; Ademiluyi & Aluko-Arowolo, 2009; Atser & Akpan, 2009; Abolhallaje et al., 2014). One study attempted to calculate an optimal radius for health facilities for each region in Bangladesh (Khan et al., 2001), underlining the link between infrastructure distribution and access.

The literature also points to an inequitable distribution of medical equipment in many countries, with urban areas and wealthier regions disposing of high-technology machines (Loureiro et al., 2007; He, Yu & Chen, 2013). In terms of systems performance, this highlights the need to analyse the distribution of medical equipment in order to better comprehend overall systems equity.

Maintenance centres on ensuring that functional infrastructure and medical equipment are available during the whole life-cycle and therefore links again to the performance dimensions of safety/quality (WHO, 2011b), overall health (Mahfoud, Barkany & Biyaali, 2017) and efficiency (WHO, 2000, 2011c; Adams et al., 2003). Breakdowns or failures of medical equipment increase over time (Tsarouhas, 2010). Both preventive as well as corrective maintenance, such as regular inspections, are required to verify the proper functionality and safe use of medical equipment, and maintain the optimal balance between costs and standards. In this context, the aspect of use points to the interplay with the health workforce sub-function. As one study estimated, more than half of equipment-related accidents are due to human errors (Dhillon, 2011).

In summary, the assessment areas for infrastructure and medical equipment can offer insights into how well this sub-function performs. But the performance of this sub-function is heavily dependent on its interaction with the health workforce and, to a lesser extent the pharmaceuticals and other consumables sub-function, as well as its interplay with the service delivery function. Hence, the impact of the infrastructure and medical equipment sub-function on performance works principally through service delivery.

5.4.2.2 Indicative measures

One of the challenges to using health system assessment information on infrastructure and medical equipment to assess system performance is that HSAs yield very little information on this topic. For example, the USAID tool provides 52 indicators for medical products, vaccines and technologies, but no indicators on medical equipment. Only the HiT template reserves a specific section for infrastructure, information technology and medical equipment, and provides some basic information on the topic.

Table 5.3 *Indicative measures for infrastructure and medical equipment availability, distribution/mix and maintenance*

INDICATIVE MEASURE	DEFINITION
Availability	
Health facility density	Total number of health facilities per 10 000 population Total number of hospitals per 100 000 population
Percentage of facilities with amenities – (water, sanitation and hygiene: WASH)	Percentage of facilities with basic amenities that meet criteria of WASH (general readiness)
Percentage of facilities with power	Percentage of facilities with power and communications that meet standards (general readiness)
Medical equipment density (selection of priority medical equipment of high cost and high complexity)	Selected priority medical equipment density per 1 000 000 population The following priority medical equipment is recommended: <ul style="list-style-type: none"> · Magnetic resonance imaging · Computerized tomography scanner · Position emission tomography scanner · Nuclear medicine · Mammograph · Radiotherapy equipment.
Percentage of facilities with electronic health management information systems	Percentage of facilities that have electronic reporting systems and percentage of elements that are digital
Percentage of facilities using electronic health records	Percentage of facilities using electronic health records [real time, patient-centred records that provide immediate and secure information to authorized users (WHO, 2016b)]

Distribution/mix	
Health facility distribution	Disaggregation by: <ul style="list-style-type: none"> · types of health care; it is recommended to categorize existing types across primary health care, first referral point of care, second referral point of care, etc. · location (district/province/national; rural/urban) · public/private sector
Hospital bed density and distribution	Total number of hospital beds per 10 000 population Disaggregated by: <ul style="list-style-type: none"> · type/ward · public/private sector · location (district/province; rural/urban)
Medical equipment distribution (selection of priority medical equipment of high cost and high complexity)	Disaggregation by: <ul style="list-style-type: none"> · public/private sector · location (e.g. urban/rural, across regions) · type of health care.
Maintenance	
Building and grounds maintenance: Percentage of facilities with evidence of systems for maintenance and repair for buildings and grounds	Indicative questions conducted through a health facility assessment. <ul style="list-style-type: none"> · Does this facility follow a routine maintenance schedule for any vehicles? · Is preventive and corrective maintenance ever carried out for any of the systems such as electrical, water sanitation, sewerage or ventilation? · Does this facility follow routine maintenance for any of the equipment related to infrastructure?
Maintenance and repair systems for medical equipment Percentage of facilities with evidence of systems for maintenance and repair for medical equipment	Indicative questions conducted through a health facility assessment: <ul style="list-style-type: none"> · Is there a schedule for inspection, testing and preventive maintenance for any medical equipment as guided by the manufacturer's recommendations? · Is there a contract for maintenance and/or repair for any laboratory machines?

Source: Based on WHO (2016c, 2017b; 2021d).

Most health system assessment reports mention the absolute number of health facilities across the country. However, more details with regards to general and specialized outpatient clinics (for example, laboratories, imaging units, haemodialysis units, rehabilitation units, ophthalmological units) is often missing. Furthermore, very little, if any, detail is provided on information technology infrastructure and the availability of functional medical equipment. Often, information and data are scattered across various sections within an HSA report, making it difficult to find, and easily missed. Most, if not all, attention is drawn towards medicines and vaccines, neglecting infrastructure and equipment. In the past, efforts have been undertaken to improve data availability in these areas, but clearly more needs to be done.

Generally, there is no standardized list of indicators available for infrastructure and medical equipment. In most cases, information technology infrastructure and the numbers of medical equipment remain unknown. However, recent efforts, such as the *Global Atlas on Medical Devices* and the *Atlas of eHealth country profiles*, have begun standardizing information, despite the fact that data is not routinely collected in all countries.

Box 5.3 *Global efforts to standardize information on health infrastructure and medical equipment*

The 2017 *Global Atlas of Medical Devices* (WHO, 2017b) provides a comprehensive overview across the areas of medical device policies, strategies and action plans; selection of medical technologies based on population needs; regulation, assessment and management of medical devices. The *Baseline Country Survey on Medical Devices* serves as a health technology monitoring tool, which entails a range of qualitative and quantitative assessment indicators. Data collected through this global survey is published in country profiles within the *Global Atlas*.

Similarly, the 2015 *Atlas of eHealth country profiles* (WHO, 2016c) provides snapshots of the eHealth landscape according to selected indicators. The third global survey on eHealth, undertaken in 2015, presents data collected on 125 WHO Member States. Broad in its scope, the survey covers eight themes of eHealth, from electronic information systems to social media, to policy issues and legal frameworks. The survey responses were based on self-reporting by a selected group of eHealth experts for each participating country.

In 2020, WHO's Health Data Collaborative released a new harmonized modular approach to facility surveys. The *harmonized health facility assessment modules* offer indicators for comprehensive, standardized assessment of health facility service quality, including for health infrastructure and medical equipment, based on global service standards (WHO, 2021d). This initiative aims to harmonize the various international health facility survey tools, such as service availability and readiness assessment (WHO, 2015); service provision assessment (DHS, 2012); and service delivery indicators (SDI, 2017) that have led to uncoordinated facility surveys in some countries, with non-comparable and fragmented results.

Given the sparse information provided by HSAs on the infrastructure and medical equipment sub-function, a general qualitative description would be useful to determine:

- what basic infrastructure and medical equipment is available
- if it is sufficient in quality and quantity
- if it receives regular maintenance
- if it is available across primary/ambulatory and inpatient care
- if it is in the public or private sector.

More detailed information on each of these indicative measures is provided in Appendix 5.1.

5.4.3 *Pharmaceuticals and other consumables*

5.4.3.1 **Assessment**

The assessment areas proposed for the pharmaceuticals and other consumables sub-function are:

- availability
- distribution/mix.

Assessment of the pharmaceuticals and other consumables sub-function can provide critical insight into the multi-dimensional problem of access to medicines and consumables, and the impact this has on systems performance. Out-of-pocket payments for medicines can be catastrophic (Acosta et al., 2019), and often represent the largest share of out-of-pocket health expenditures in both rich and poor countries. As such, it is a significant barrier to efforts to lift populations out of poverty and achieve universal health coverage (WHO, 2008; Hafner et al., 2017). Drug availability is therefore strongly linked to affordability and financial protection as defining elements of access (Prinja et al., 2015). Indeed, a 2006 editorial lamented, “the cost of medical care impoverishes or is simply beyond the reach of many people in developing countries” (Richards, 2006). Inherent in this statement is the notion that availability of pharmaceuticals includes their affordability. Other experts acknowledge the importance of both availability and affordability but separate the two aspects in terms of assessment (Wirtz et al., 2017; Acosta et al., 2019), while noting their dependency on each other*.

In the human rights literature, pharmaceutical availability is seen as a fundamental element of quality health care (WHO, 1978; OHCHR, 2001a, 2001b). Increasing the availability of medicines is also seen as critical to reducing the burden of disease and health inequities worldwide, and thus impacting on health outcomes (Robertson et al., 2015).

The links between drug availability and quality and access assume availability where need is. But the distribution/mix assessment area aims to shed light on whether the health system is able to distribute the medicines in a reliable manner to ensure an adequate mix.

* Sustainable Development Goals (SDGs) with SDG 3 b3 highlights the connection between the availability of medicines, the affordability of medicines as well as the existence of a core set of relevant essential medicines.

5.4.3.2 Indicative measures

Table 5.4 *Indicative measures for pharmaceuticals and other consumables*

INDICATIVE MEASURE	DEFINITION
Availability	
Unexpired essential medicines in medicine outlets are available	According to WHO / Health Action International (HAI) “the availability of individual medicines is reported as the percentage (%) of medicine outlets in which the (unexpired) medicine was found on the day of data collection” (WHO, 2008).
Percentage of medicine outlets in which the medicine was found on the day of data collection	These data are collected regularly through the WHO/ HAI surveys. The medicines to be counted would be identified through the national list of essential medicines. If such a list does not exist, the WHO essential medicines list (publicly available) could be used.
Distribution/mix	
Percentage of treatment sites that received all orders in full and on time during a defined period	<p>Calculation of the indicator:</p> <ul style="list-style-type: none"> · Numerator: Number of health facilities that received all orders for essential medicines / tracer items in full and on time during a defined period · Denominator: Total number of health facilities that received orders for essential medicines / tracer during the same period
Percentage of households more than 5/10/20 km from a health facility/pharmacy that is expected to dispense essential medicines	This indicator is measured as the percentage of households against public facilities and also against private facilities.

Source: WHO (2008); Brown et al. (2018).

An appraisal of pharmaceuticals can be found in all reviewed HSA tools, albeit with differing types, quality and quantity of data gathered. These inconsistencies relate to the fact that, until recently, no unified definitions for a pharmaceutical system and no unified approach for assessing the strengths and weaknesses of the pharmaceutical system were available. However, recent moves towards harmonization of pharmaceutical assessments are reflected in many HSA country reports which look at common indicators that are widely used by the pharmaceutical expert community (WHO, 2008). In addition, HSA country reports generally provide a useful amount of qualitative information on medicine availability and affordability to enable an appraisal of sub-function performance.

A milestone in terms of assessment frameworks was the 2008 WHO / Health Action International (HAI) joint report *Measuring medicine prices, availability, affordability and price components*. This report was widely used and its ability to standardize price and medicine availability measures mean it is still a primary reference point for pharmaceuticals assessment.

Another key development was the release of the *Tool for Measuring Progress in Pharmaceutical Systems Strengthening* introduced in 2018 by the Systems for Improved Access to Pharmaceuticals and Services Program (SIAPS) (Brown et al., 2018). SIAPS identified and defined key elements for assessment based on literature reviews and assessment framework reviews, as well as providing assessment tools and manuals and a measurement framework that considers the full pharmaceutical system.

With regard to consumables, such as medical supplies and disposable or single-use medical devices, very little information is available in country HSA reports, underlining the lack of normative reflection on the topic within the global health space. WHO recently released the essential in vitro diagnostic lists (WHO, 2019c), a list of priority medical devices for cancer management (WHO 2017c), one for COVID-19 (WHO, 2020), and is planning to expand similar lists for other disease areas such as cardiovascular disease, stroke and diabetes. The WHO lists include both the single-use medical devices and the medical equipment required for each list in different settings, for example, in surgery, imaging and clinical laboratories.

Further research is needed, especially given the difficulties in tracking medical devices and supplies as they can be procured from both the public and private sectors. An area of high importance due to the recent COVID-19 outbreak is personal protective equipment, which comprises medical devices used for protection by health workers, patients and community members.

We draw on the frameworks mentioned above and HSA country reports to propose the indicative measures set out below, to assess the availability and distribution of pharmaceuticals and other consumables.

More detailed information on each of the indicative measures are provided in Appendix 5.1.

5.4.4 Governance of resource generation

5.4.4.1 Assessment

We break governance of resource generation down to the three assessment areas which matter most in terms of ensuring functionality:

- resource planning
- setting quality standards
- assessing quality standards

Resource planning Planning and projecting a country's health resource needs is a core aspect of the governance of resource generation. The main aim of resource planning is to decide what training is needed to ensure a skilled workforce, in what numbers the workforce is needed, and what to build, manufacture or procure in order to increase the availability of health resources to meet health needs. One of the main aims is to avoid or reduce shortages and disruptions in resource supply (European Medicines Agency, 2021).

For health workforce, this translates into, for example, health workforce planning and projection processes; intersectoral coordination, especially with the education sector; and generally, anything done by the central health workforce unit within health ministries, or other ministry of health cadres (WHO, 2017a).

For infrastructure and medical equipment, this sub-function covers: policies and action plans specifying the number and location of health facilities; health service points; information technology infrastructure and large capital equipment. The planning and budgeting processes for maintenance of health facilities and equipment also fall within this sub-function.

The planning process for pharmaceuticals and other consumables involves manufacturing planning in countries where this is relevant (Management Sciences for Health, 2012b); otherwise, most countries' national pharmaceutical policy will seek to manage the supply of pharmaceuticals through their purchasing to meet domestic demand.

Setting quality standards Setting realistic and effective quality standards for training the health workforce, and manufacturing and/or procuring pharmaceuticals and medical devices, is an essential component of a health system that performs well.

Education, training, licensing and accreditation are the usual ways to set and regulate quality standards for the health workforce. The NHWA specify the need for standards for the full duration and content of health worker education and training, accreditation mechanisms for education and training institutions, and even standards for social accountability (WHO, 2017a).

An integral part of the infrastructure and medical equipment sub-function is the authorizing the use of medical equipment in the local market, using quality and safety criteria. These criteria can be stipulated within comprehensive accreditation and authorization mechanisms, integrated into health product legislation, or both (WHO, 2017b). Also included within this assessment area are national norms and guidelines for buildings used as health facilities. Many of these criteria would also be valid for items categorized as other consumables in the pharmaceuticals and other consumables sub-function.

Pharmaceutical quality assurance includes standards for manufacturing and procuring pharmaceuticals. Quality standards are usually subject to national pharmaceutical legislation, which is heavily influenced by global trade and international accords – such as the Agreement on Trade-Related Aspects of Intellectual Property Rights (Management Sciences for Health, 2012a).

Indeed, the legislation and regulation sub-function of overall governance overlaps the “setting quality standards” assessment areas, the delineation towards the governance of resource generation being the specificity of the laws or regulations for health workforce, infrastructure and medical equipment and/or pharmaceuticals and other consumables.

Assessing quality standards (including monitoring and evaluation) Setting quality standards, and planning with those quality standards in mind, are closely linked to assessing quality standards and the demarcation between these three governance aspects of resource generation is fluid. This fluidity is particularly evident in the management of resources as this a function of both planning and assessment, with the orientation being the standards that are set as a benchmark.

Assessing quality standards is often a part of enforcing regulation, sometimes this category also overlaps the governance sub-function of legislation and regulation, as described earlier in the section on setting quality standards.

Quality assurance mechanisms for the health workforce include the process for renewal of accreditation for educational institutions and health professionals. In many countries, this function is partially, or completely, fulfilled by a self-regulation model whereby professional associations set quality standards for their own occupational groups. This is done within a legal framework that lays out the roles and responsibilities of government and occupational groups (see Box 5.4)

For infrastructure and medical equipment, quality assessments contribute to decisions on benefit package interventions and positive lists. Examples of this sort of evaluation

Box 5.4 *Professional self-regulation*

Self-regulation is a popular regulatory model used for health professionals. It has the dual advantage of keeping a certain level of government oversight over the quality of professional practice, without having to maintain the special in-depth expertise otherwise required for direct regulation. In this model, an occupational group – physicians, nurses, midwives, dentists, pharmacists, and so on – enters into an agreement with government to formally regulate the activities of its members. Typically, this is done through an Act passed by parliament in which the government grants self-regulatory status to the occupational group. However, the specific modalities, degree of power and tasks transferred vary considerably across countries, and are influenced by context, history and health system architecture (Alderson & Montesano, 2003).

The self-regulatory status tasks each professional association with regulating the professional conduct of practitioners by keeping a common code of ethics and prescribing quality standards in the pursuit of protecting public interests (Zelisko et al., 1999). In practice, this includes accreditation of educational institutions, professional licensing, continuing education standards, and accountability mechanisms for those breaching standards. Membership fees cover the cost of regulatory operations, with additional government subsidies in some countries. In some cases, such as in Thailand, Canada and New Zealand, government subsidies allow for a certain level of government oversight and control. In addition, the legal framework granting self-regulation status sets out key principles which professional associations must abide by. For example, the Alberta Health Professions Act in Canada enforces the principle of public accountability by stipulating that 25% of regulatory body board membership must come from the lay public (Province of Alberta, 1999).

Challenges remain in many countries. For example, health workers may not be organized adequately to take on regulatory roles, conflicts of interest may prevail where defending boundaries and professional privileges are prioritized. A WHO report from the Western-Pacific region found poor transparency with regards to how professional standards or competences are determined, monitored and sanctioned by self-regulators. This poses a greater challenge in countries where institutional capacities and regulatory systems overall were weak (WHO, 2016d).

It is therefore important for governments and professional associations to continue collaborating to develop appropriate task-sharing and regulatory models to ensure that professions that serve the public interest do so to the highest possible standard.

are Health Technology Assessments, needs assessments and clinical effectiveness measurements. Increasingly, digital health assessments are also being used for decision-making (WHO, 2016c). Infrastructure management tasks – such as the conservation, maintenance and operation of buildings, facilities and their equipment – are based on constant quality appraisals, either formal or informal, so these task also fall within the infrastructure and medical equipment category (Scholz, Ngoli & Flessa, 2015).

In addition to Health Technology Assessments, in the area of pharmaceuticals and other consumables, assessing quality standards includes quality control inspections, marketing regulation enforcement, supply control mechanisms and many other measures (Management Sciences for Health, 2012a; WHO, 2021c). In countries with domestic manufacturing, monitoring and inspection of the manufacturing process itself is a critical task in this category.

5.4.4.2 Indicative measures

An overview of indicative measures for the governance of resource generation is provided in Table 5.5. These measures are largely based on initiatives or databases that have the primary intent of bringing existing indicators together, at a global level, in a harmonized expert process. They are, as always, only indicative as several metrics exist at country or regional level, which may be more apt to appraise the assessment areas.

For health workforce, the NHWA has been used as a reference (WHO, 2017a). For infrastructure and medical equipment, the *Medical Device Atlas* and the *E-health Country Profiles* (see Box 5.3) provide the indicators listed. For pharmaceuticals, the *Management Sciences for Health 2012 pharmaceutical training manual* was a primary data source, along with an analysis of pharmaceutical information contained in HSA reports (Management Sciences for Health, 2012a, 2012b).

5.5 Conclusions

Resource generation is a key function of the health system with the particularity that it especially cannot be understood or assessed in isolation from the other functions. Its maximum impact on systems performance lies in the interplay between its sub-functions of health workforce, infrastructure and medical equipment, and pharmaceuticals and consumables. The interaction of these sub-functions leads the way to service delivery.

Table 5.5 *Indicative measures for the governance of resource generation*

INDICATIVE MEASURE	DEFINITION
Setting quality standards	
Existence of national and/or sub-national mechanisms for accreditation of health workforce education and training institutions and their programmes (Yes/No/Partly)	<p>The following questions should guide a response to this indicator:</p> <ol style="list-style-type: none"> 1. Have national and/or sub-national mechanisms for accreditation of health workforce education and training institutions and their programmes been established? 2. Are national and/or sub-national mechanisms for accreditation of health workforce education and training institutions and their programmes compulsory? 3. Are there national and/or sub-national mechanisms for accreditation of health workforce education and training institutions and their programmes that are not compulsory? 4. If established, do national and/or sub-national mechanisms for accreditation of health workforce education and training institutions and their programmes take into account national education plans for the health workforce?
Standard on the duration and content of health workforce education and training	<p>Existence of national and/or sub-national standard on the duration and content of health workforce education and training, by health workforce education and training programme. The following questions should guide a response to this indicator:</p> <ol style="list-style-type: none"> 1. Are entry requirements to health workforce education and training programmes established concerning age, previous studies, previously acquired competence by study and past professional experience? 2. Are the total number of hours to be spent on health workforce education and training established? 3. Is there a list of knowledge, skills and competencies to be acquired during health workforce education and training?
Existence of a medical device nomenclature system	
Existence, comprehensiveness, and flexibility of pharmaceutical policy, legislation and regulation. This includes the functioning and political backing of the drug regulatory authority and the transparency of decisions for stakeholders.	<p>The following questions should guide a response to this indicator:</p> <ol style="list-style-type: none"> 1. Existence of a National Medicine Policy that sets objectives and strategies for the pharmaceutical sector based on priority health problems 2. Existence of a functioning National Drug Regulatory Authority responsible for the promulgation and enforcement of regulations 3. Existence of a National Quality Control Laboratory 4. Existence of a functioning system for pharmaceutical registration and monitoring 5. Existence of an officially defined protocol for ensuring the quality of medicines

INDICATIVE MEASURE	DEFINITION
Resource planning	
Existence of mechanisms and models for health workforce planning (Yes/No/Partly)	<p>The following questions should guide a response to this indicator:</p> <ol style="list-style-type: none"> 1. Are clear and explicit health workforce planning objectives set up in the national health policy? 2. Is there a coordinated communication and information flow among national-level intersectoral stakeholders? 3. Is there a dedicated and established Human Resources for Health Planning Committee, a designated entity or a specific group at the national level responsible for the health workforce? 4. Is there a methodology established for health workforce planning? 5. Are complete data with full coverage of the population available in a sustainable manner to provide quantitative assessment required for health workforce planning? 6. Are policy actions based on the recommendations of the health workforce Planning Committee implemented?
Existence of an eHealth strategy or policy	
Existence of health technology (medical device) policy	
Existence of lists of approved medical devices for public procurement or reimbursement	
Existence of List of National Essential Medicines	
Assessing quality standards	
Existence of a health workforce unit in the Ministry of Health responsible for developing and monitoring policies and plans on health workforce (Yes/No/Partly)	<p>The following questions should guide a response to this indicator:</p> <ol style="list-style-type: none"> 1. Are there functions to monitor health workforce policies and plans as part of the monitoring of health services development? 2. Are there institutional mechanisms in place to coordinate an intersectoral health workforce agenda, including negotiations and intersectoral relationships with relevant other line ministries, government agencies and stakeholders?
Ministry of Health responsibility for health technology policy implementation	<p>Includes one or more of the following:</p> <ul style="list-style-type: none"> · Existence of a national health technology assessment unit · Existence of national health technology management units · Existence of medical equipment management unit (if possible, disaggregated by: national, regional, hospital level)
Are pharmaceuticals and other consumables monitored for quality?	<p>The following indicators should guide a response:</p> <ul style="list-style-type: none"> · Existence of standard procedures for the quality control of health products at initial receipt at the central level · Existence of a system for the collection of data regarding the efficacy, quality and safety of marketed products (post-marketing surveillance) · Product batches of pharmaceuticals that have undergone a quality control process at the initial receipt according to standard procedures (percentage) · Percentage of health facilities that have a procedure in place to report product quality issues

Along with financing and governance, resource generation can be seen as enabling the service delivery function, thereby contributing heavily to its performance areas of quality and access.

This chapter proposes assessment areas for each resource generation sub-function along a common pattern: availability, distribution/mix, and a notion of upkeep for human resources for health, via continuing education, and infrastructure and equipment, via maintenance. As they are used in a one-off or disposable way, pharmaceuticals and other consumables are treated differently and are assessed on the basis of their availability and distribution/mix only.

In general, HSAs offer good quantitative data and/or qualitative information on the availability of health workforce, infrastructure and pharmaceuticals. But the other assessment areas of distribution/mix and “upkeep” tend to be largely ignored or given little attention. Medical equipment data, especially maintenance, is another field where more information is needed within HSAs – at the very least at a basic qualitative descriptive level – to enable a better appraisal of the resource generation function overall.

Appendix 5.1 Details on indicative measures for the resource generation sub-function assessment areas

Health workforce

Availability

The NHWA has data on health worker density for more than 170 countries within the past 5 years (WHO, 2021a) in terms of:

Health worker density

Density of health workers per 10 000 population

Numerator: Number of health workers, defined in headcounts

Denominator: Total population (UN Statistics Division methodology)

Disaggregation: Occupation and activity level. For activity level the following categories are recommended: practising health workers, professionally active health workers and health workers licensed to practice.

If geographically disaggregated data are available, an indicator to add to the above is:

Health worker density at sub-national level

Density of active health workers per 10 000 population at sub-national level

Numerator: Number of active health workers at sub-national administrative units, defined in headcounts

Denominator: Total population at sub-national level

Disaggregation: Occupation

Preferably, the location where the health worker works should be taken into account when sub-national levels are defined according to needs of Member States. The use of administrative units to the first or second sub-national level is recommended (depending on the structure of administrative units and the size of sub-national territories), without overlaps between the administrative units. Examples of sub-national administrative units: states, regions, provinces, counties and districts.

The review of country HSA reports revealed widespread reporting of health worker density, with qualitative information to describe, explain and qualify the numbers. Hence, including this data point in a health system performance assessment makes sense, and it can be easily extracted from an HSA.

Distribution/mix

Regarding more disaggregated data on health workforce distribution, the most widely available data set in countries and reported to the NHWA are disaggregation by age and sex. Disaggregation by facility type and facility ownership is lagging, with the latter data available largely on the public sector side, which is not particularly useful when assessing overall health worker distribution.

Nevertheless, the age distribution of health workers is insightful in terms of sustainability of the resource generation function within the health workforce sub-function in that an imbalance of workers close to retirement age or insufficient counts of incoming young workers can indicate a long-term sustainability challenge (WHO, 2010). Indeed, the Belgium Health Systems Performance Assessment 2019 looks at four indicators for workforce sustainability, including the share of the workforce who will retire in the near future (physicians aged 55+; nurses aged 50+) (Devos et al., 2019).

Following trends in the distribution by sex of the health workforce is crucial because women represent the largest share of the health workforce albeit in lower-paying positions, pointing to real barriers face by women in contributing more to the health sector in paid employment. Addressing these barriers is key to improving health workforce numbers and attracting young women to join the workforce.

The NHWA defines the age- and sex-disaggregated indicators as follows:

Health worker distribution by age group

Percentage of active health workers in the given age groups, by occupation (age groups considered are the following: >25, 25–34, 35–44, 45–54, 55–64, ≤65 years)

Numerator: Number of active health workers in a specific age group

Denominator: Total number of active health workers, defined in headcounts

Disaggregation: Occupation

Female health workforce

Percentage of female health workers in active health workforce, by occupation

Numerator: Number of active female health workers

Denominator: Total number of active male and female health workers, defined in headcounts

Disaggregation: Occupation

Health worker distribution by facility ownership

Percentage of active health workers employed by type of facility ownership

Numerator: Number of active health workers, defined in headcounts, working in facilities owned by the given institutional sector

Denominator: Total number of active health workers, defined in headcounts

Disaggregation: Occupation and facility ownership

Based on the sub-set of country HSAs that were reviewed, the available disaggregated data on how the health workforce stock is distributed is not always reported. When it is, it is not always done so quantitatively but rather with a description of the general trend and/or political attention given to ensuring increased female or younger health workers. That being said, these data points are increasingly becoming more available in countries, and the NHWA is consolidating data into one easily accessible database. For these reasons, it seems feasible to keep these indicators while still relying on the qualitative assessments where quantitative data gaps exist. Again, our primary aim is to support national governments to use health system assessment data to evaluate how their health system is performing; our main objective is not necessarily finding indicators to compare across countries, although we do not dispute the utility of ultimately having such numbers. Therefore, drawing on a qualitative description of the political attention paid and the trends in the age and gender balance of the health workforce, among other indicators, can be enormously useful in assessing overall function and systems performance.

An indicator for which data are increasingly available in the NHWA database is the following:

Specialist surgical workforce

Density of specialist surgical workers, classified in ISCO-08 with code 2212, per 100 000 population.

Numerator: Total number of specialist surgical workers, defined in headcounts. Specialist surgical workers are surgeons, obstetricians and anaesthesiologists.

Denominator: Total population

Disaggregation: Not applicable

This data point gives an indication of specialist versus generalist capacity in a country and, together with overall health worker numbers, provides a sense of trends in balance between the different health worker categories. Taken alone, and without a benchmark for

the ideal number of specialist surgeons, it may not be so useful; nevertheless, the data are increasingly available and combined with other data and qualitative information, may help to complete an understanding of the performance of the health workforce sub-function.

Given the growing policy emphasis on primary health and first-contact care, we include the density of family medicine practitioners, with the caveat that NHWA has little available data. However, some country HSAs do provide this information, albeit with differing definitions.

Family medicine practitioners

Density of family medicine practitioners per 100 000 population. Family medicine practitioners are part of the generalist medical practitioners classified in ISCO-08 with code 2212. They are referred to as general practitioners in some countries, and as a specialization in others. They should provide person-centred, continuous and comprehensive medical care to individuals and families in their communities.

This group does not include resident medical officers, medical interns or other generalist medical practitioners not in general practice activities.

Numerator: Total number of family medicine practitioners, defined in headcounts

Denominator: Total population

Disaggregation: Not applicable

One indicator is proposed here despite the dearth of available data: the share of workers across health and social sectors. This indicator is recommended for collection by Member States by WHO through its inclusion in the NHWA, although few data on this currently exist in the NHWA database. This indicator brings in the perspective of social care as a contributing factor to health care, and recognizes social care as a key resource for health system performance. It is acknowledged that few HSAs currently report on this; however, at least a sub-set of countries do. By including it here, we hope that at least a qualitative description of trends and state of play on social care can be mentioned in future HSAs.

Share of workers across health and social sectors

Ratio of the number of persons working in health and social sector to the total number of persons employed in the civilian labour force.

Numerator: Number of persons working in health or social sector, in headcounts

Denominator: Total number of persons employed, defined in headcounts

Disaggregation: Health and social sectors defined by International Standard Industrial Classification (ISIC) codes 86, 87, and 88

This indicator aligns with the indicator labelled Total health and social employment in OECD Health Statistics.

If ISIC data are lacking, the ratio between health employment and total civilian employment can be used for approximation.

Besides sectoral workforce composition, which is the predominant focus of the literature analysing the mix and distribution of the health workforce (Murray & Evans, 2003; Dubois & Singh, 2009), the distribution of skills is also relevant for health systems performance.

Measuring skill mix is challenging because of the lack of consensus on which skill mix interventions work well and which work less well. This is compounded by the extreme micro-context-specific nature of whether an intervention does, indeed, work or not (Farris et al., 2010; Kroezen et al., 2011; Hoare, Mills & Francis, 2012; Colvin et al., 2013; Mapp, Hutchinson & Estcourt, 2015; Carter et al., 2016; Flodgren et al., 2017; Joo & Huber, 2018; Karam et al., 2018). Therefore, a huge step towards understanding this under-reported area within HSAs would be, at the very least, a brief, consistent description of the skill mix of the health workforce, whether or not there are initiatives to optimize it and, if so, how and with what results.

We propose one skill mix-specific indicator from the NHWA that is a fairly simple yes/no question but includes sub-questions which contribute to understanding the performance of the health workforce sub-function overall:

Existence of advanced nursing roles

Existence of advanced nursing roles (yes/no/partly)

This indicator is measured (or supported) by the following (capability) questions:

1. Is there a commonly accepted definition of nurse practitioner?
2. Is there another commonly accepted definition of other types of nurses working in advanced roles?
3. Are there formal requirements to become a nurse practitioner or other type of advanced practice nurse in terms of specified training, qualifications, experience, certification/registration, etc.?
4. Are there ad hoc/local methods for nurses being trained on the job to acquire specific skills that could lead to their employment in advanced roles?

Education

There is currently very little information in HSAs on continuing education, so a brief qualitative description in this area would be welcome. We suggest two indicators drawn from the NHWA as a point of orientation for collecting more information in this area: continuing professional development and in-service training. Currently, the NHWA also has little information reported by countries to its database.

Continuing professional development

Existence of national systems for continuing professional development (yes/no/partly). The following questions should guide a response to this indicator:

1. Are there existing national and/or sub-national systems for continuing professional development?
2. If national and/or sub-national systems for continuing professional development exist, are they compulsory?
3. If compulsory, are they linked to relicensing?
4. For occupations that have a national and/or sub-national system for continuing professional development, is it integrated into national education plans for the health workforce, for that occupation?

In-service training

Existence of in-service training as an element of national education plans for the health workforce, aligned with the national health plan (yes/no/partly). The following questions should guide a response to this indicator:

1. Is in-service training integrated into larger national education-wide sector policies, strategies and plans?
2. Does in-service training consider and take into account national policies, strategies and plans for transforming professional, technical and vocational education and training?
3. Does in-service training consider and take into account national policies, strategies and plans for adult learning and higher education?

Infrastructure and medical equipment

Availability

These indicators are derived from WHO's Standardized Health Facility Survey Module (WHO, 2019d).

Health facility density

Total number of health facilities per 10 000 population

Total number of hospitals per 100 000 population

The review of country HSAs revealed widespread reporting of health facility density, including information on health facility types. Including this data point in an HSPA would therefore be simple as it can easily be extracted from an HSA.

With regards to more disaggregated data, the following information is useful: size, age, condition of health facility, and the split between the public and private sectors (Rechel, Maresso & van Ginneken, 2019). These information points are included in the Baseline Country Survey on Medical Devices, but are not yet routinely collected in all countries.

Moreover, WHO's Standardized Health Facility Survey Module has started collecting data on "facilities with appropriate structural and security conditions for the unit, and without a serious defect in assessed units" (WHO, 2019d). In the future, more data from this source may be available for this indicator across different countries and regions.

In addition, we propose two indicators to better assess the infrastructure component of health facilities, which are ideally collected through a health facility assessment. Both indicators are included in the PHC monitoring and evaluation framework.

Percentage of facilities with amenities (water, sanitation and hygiene: WASH)

Percentage of facilities with basic amenities that meet criteria of WASH (general readiness)

Percentage of facilities with power

Percentage of facilities with power and communications that meet standards (general readiness)

In terms of the availability of medical equipment, we propose this indicator, derived from the Baseline Country Survey on Medical Devices.

Medical equipment density (selection of priority medical equipment of high cost and high complexity)

Selected priority medical equipment density per 1 000 000 population

The following priority medical equipment is recommended:

- Magnetic resonance imaging
- Computerized tomography scanner
- Position emission tomography scanner
- Nuclear medicine
- Mammograph
- Radiotherapy equipment.

Information on the above is not yet routinely collected in many countries. It might, however, be an indicator for which data become more available in the future through WHO's efforts to centralize medical equipment information, and hence will be useful to include.

With regards to more disaggregated data, the following qualitative information is useful: whether basic equipment is available in sufficient quality and quantity, across primary/ambulatory and inpatient care, public and private sector. Currently, HSAs include minimal information on medical equipment, and sometimes none at all.

With regards to information technology and eHealth, the WHO Resolution 71.7, adopted in 2018, acknowledges the potential of digital technologies as a major player in improving public health (WHO, 2016b, 2018). As a result, WHO is currently leading the development of a global strategy in consultation with Member States and key stakeholders that aims to accelerate adoption of digital health (WHO, 2019e). So far, the eHealth survey, which encompasses quantitative and qualitative assessment questions, has been conducted three times, with the latest data published in the *Atlas of eHealth country profiles in 2016* (WHO, 2016c). We propose two indicators from the *Atlas*:

Percentage of facilities with electronic health management information systems

Percentage of facilities that have electronic reporting systems and percentage of elements that are digital

Percentage of facilities using electronic health records

Percentage of facilities using electronic health records (real-time, patient-centred records that provide immediate and secure information to authorized users)

Information is not yet routinely collected across all countries but data are becoming increasingly available. Information on the health information infrastructure is not always provided in country HSAs and when it is, it is often scattered across various sections, so easy to miss.

In addition, WHO has begun collecting data through its Standardized Health Facility Survey Module (WHO, 2019d) with the following questions:

- Does this facility have a means for communicating outside the facility such as a phone or radio that is supported by the facility?
- Does this facility have a functioning computer?
- Is there access to email or internet within the facility today?
- Is the connecting time for the internet paid or reimbursed by the management?

Distribution/Mix

To assess the distribution of health facilities across a country, we propose two indicators:

Health facility distribution

Disaggregation by:

- types of health care; it is recommended to categorize existing types across primary health care, first referral point of care, second referral point of care, etc.
- location (district/province/national; rural/urban)
- public/private sector

Distribution across health facilities is captured within the indicator “health facility density and distribution” as per WHO 100 core indicators. Apart from the disaggregation mentioned previously; namely specific services, facility ownership, location and type; an additional dimension is suggested: access to emergency surgery. This is defined as the percentage of the population who can access, within 2 hours, a facility that can perform emergency caesarean section, laparotomy and open fracture fixation.

In addition, the Baseline Country Survey on Medical Devices is collecting data on health facility distribution (density per 100 000 population), with disaggregated information on health posts, health centres, district hospitals, provincial hospitals, regional hospitals in both the public and private sectors.

Hospital bed density and distribution

Total number of hospital beds per 10 000 population

Disaggregated by:

- type/ward
- public/private sector
- location (district/province; rural/urban)

The above indicator is part of the WHO 100 core indicators.

WHO's Harmonized Health Facility Survey Module has started collecting more specific data on types of beds using the following indicators, and data may be available for a sub-set of countries soon:

- total number of inpatient beds per 10 000 population (by region)
- number of maternity beds per 1000 pregnant women
- how many overnight/inpatient beds in total does this facility have, both for adults and children (excluding any beds/tables used for delivery, and excluding smaller beds (infant/paediatric))? This includes beds used for observation of emergency patients and intensive care beds.
- In total, what is the official number of established inpatient beds, including dedicated maternity beds?

With regards to more disaggregated data, the following qualitative information is useful:

- how trends for acute hospital beds compare with those in other countries
- differences across regions, including differences across urban and rural areas
- the reasons for any major differences
- do the differences impact access to care
- share of psychiatric, acute care and long-term care institutions.

These are all suggested in the current Health Systems in Transition template (Rechel, Maresso & van Ginneken, 2019).

Information on the distribution of health facilities is generally included in HSAs, most predominantly providing an overview across regions and/or rural areas compared with urban areas.

With regards to medical equipment distribution, the following indicators are derived from the Baseline Country Survey on Medical Devices.

Medical equipment distribution (selection of priority medical equipment of high cost and high complexity)

Disaggregation by:

- public/private sector
- location (e.g. urban/rural, across regions)
- type of health care.

The following priority medical equipment is recommended:

- magnetic resonance imaging
- computerized tomography scanner
- position emission tomography scanner
- nuclear medicine
- mammograph
- radiotherapy equipment.

Information is not yet routinely collected, but this indicator is included because it will be useful when data become more available in the future.

WHO's Standardized Health Facility Survey Module is currently collecting more granular information on the following indicators:

- medical devices/essential technologies: % of facilities with each specific medical device and technology
- blood transfusion services: % of facilities offering blood transfusions services
- oxygen administration services: % of facilities offering oxygen administration services for any service
- basic laboratory diagnostic services: % of facilities offering basic laboratory diagnostic services, including rapid tests.

Again, as mentioned above, issues around medical equipment are rarely or not at all mentioned in current country HSAs.

Maintenance

For maintenance, two indicators are taken from WHO's Standardized Health Facility Survey Module:

Building and grounds maintenance

Percentage of facilities with evidence of systems for maintenance and repair for buildings and grounds. Indicative questions conducted through a health facility assessment.

- Does this facility follow a routine maintenance schedule for any vehicles?
- Is preventive and corrective maintenance ever carried out for any of the systems such as electrical, water sanitation, sewerage or ventilation?
- Does this facility follow routine maintenance for any of the equipment related to infrastructure?

Maintenance and repair systems for medical equipment

Percentage of facilities with evidence of systems for maintenance and repair for medical equipment. Indicative questions conducted through a health facility assessment:

- Is there a schedule for inspection, testing and preventive maintenance for any medical equipment as guided by the manufacturer's recommendations?
- Is there a contract for maintenance and/or repair for any laboratory machines?

Data collection is ongoing in a number of countries and may be available soon. Given that this area is barely mentioned in country HSA reports currently, a brief qualitative description, which includes an appraisal of the maintenance of infrastructure and medical equipment, would be useful.

Pharmaceuticals and other consumables

Availability

For quantitative data, the assessment of availability was similar across HSA tools and focused on the availability of key medicines in outlets and facilities. Qualitative information provided in HSA country reports was, however, more diverse and usually addressed challenges of making medicines available in treatment facilities or outlets. Those challenges were often linked to management of procurement, distribution and storage, or to regulation and legislation.

The most widely used indicator in this regard, usually referenced to the WHO/HAI indicator list (2008) is:

Unexpired essential medicines in medicine outlets are available

According to WHO/HAI “the availability of individual medicines is reported as the percentage (%) of medicine outlets in which the (unexpired) medicine was found on the day of data collection” (WHO, 2008).

WHO estimates that at least 156 countries have adopted national essential medicines lists that could provide national guidance on which medicines to trace for assessing availability. Additionally, the WHO Model List of Essential Medicines (2019; updated regularly), listing the “most efficacious, safe and cost-effective medicines for priority conditions” (WHO, 2019e) would be the most recent source for identifying essential medicines, or selecting tracer medicines.

Availability in terms of affordability

The Sustainable Development Goals introduce the notion of pharmaceutical availability being dependent on, and linked to, affordability. This echoes the emphasis deep-dive tools place on the conditional relationship between affordability and availability.

Affordability, and its links to availability, is described qualitatively in reviewed country HSAs. HSA tools strongly suggest combining availability and affordability (WHO, 2010; USAID, 2017; Wendt, 2012) as these are seen as core indicators to assess access to essential medicines.

In addition to a qualitative appraisal, this Sustainable Development Goals indicator can be used: “Proportion of health facilities which have a core set of relevant essential medicines available and affordable on a sustainable basis.”

If this is not available, as is the case for many countries, a sense of availability and affordability can be gauged with two readily available data points instead:

For availability of medicine:

Percentage of medicine outlets in which the medicine was found on the day of data collection.

These data are collected regularly through the WHO/HAI surveys. The medicines to be counted would be identified through the national list of essential medicines. If such a list does not exist, the WHO essential medicines list, which is publicly available, could be used. As such, no additional effort would be necessary to gather the data.

For affordability of medicine:

Sustainable Development Goal 3b3 uses the concepts listed below for affordability assessment (UN, 2021):

- daily dose treatment of the medicine
- national poverty line
- wage of the lowest paid unskilled government worker.

The HSA tools and country HSA reports suggest other ways of examining affordability:

- Median consumer price ratio of selected essential medicines in public and private health facilities (suggested by USAID HSAA, FHI 360, Monitoring the Building Blocks)
- Daily wage of the lowest-paid unskilled government worker by determining the number of days' wages required to purchase selected courses of treatment for common acute and chronic conditions (WHO / HAI 2008)

In summary, qualitative information is available in many HSAs; in addition, some quantitative indicators could be collected but may not be strictly necessary for appraisal of pharmaceutical affordability in-country.

Mix

Country HSA reports did not provide a unified picture on how to best assess whether the right pharmaceutical mix is available across the country. The qualitative information provided varies in type and breadth in the different tools and reports.

WHO and partners* developed a set of “harmonized monitoring and evaluation indicators for procurement and supply management systems” (WHO, 2011a). Although the

* I-solutions, SCMS, PEPFAR, UNICEF, Stop TB Partnership, USAID, UNDP, UNAIDS, Roll Back Malaria.

indicator set focuses mainly on stocks of antiretroviral, anti-tuberculosis and anti-malaria medicines, we see one of their indicators as useful for assessing pharmaceutical mix:

Percentage of treatment sites that received all orders in full, and on time, during a defined period

Calculation of the indicator:

- Numerator: Number of health facilities that received all orders for essential medicines / tracer items in full and on time during a defined period
- Denominator: Total number of health facilities that received orders for essential medicines / tracer during the same period

This measure assesses whether the health system is able to distribute medicines in a reliable manner to ensure an “adequate” mix (see above regarding essential medicines). The emphasis put on timely distribution is relevant with regard to availability of the pharmaceuticals and supply of the products to the facilities. This indicator is also very useful in regard to the overall framework of this publication as it can be applied to all service delivery sub-functions – public health, general care, specialist care, very specialist care – and to all sectors including public, private and non-governmental organizations.

This indicator could also be useful in fragmented health systems with a strong private sector as there is no assumption that everything could be accessed through the public sector. The indicator can be used in a context of multiple supplier systems.

The presence of pharmaceuticals with an equitable geographical spread can be assessed through the following indicator, in addition to qualitative information collected through interviews with service providers, village leaders, end users and other stakeholders:

Percentage of households more than 5/10/20 km from a health facility/ pharmacy that is expected to dispense essential medicines

This indicator is measured as the percentage of households against public facilities and also against private facilities.

If very little information is available in an HSA, a sense of pharmaceutical mix could be captured through the service delivery function – for example, number of primary care facilities per x population – and so no additional effort would be needed.

References

- Abolhallaje M et al. (2014). Assessing health inequalities in Iran: a focus on the distribution of health care facilities. *Global Journal of Health Science*, 6(4):285.
- Acosta A et al. (2019). Medicine shortages: gaps between countries and global perspectives. *Frontiers in Pharmacology*, 10:763.
- Adams O et al. (2003). *Human, physical and intellectual resource generation - proposals for monitoring*. Geneva, World Health Organization.
- Ademiluyi IA, Aluko-Arowolo SO (2009). Infrastructural distribution of health-care services in Nigeria: an overview. *Journal of Geography and Regional Planning*, 2009;2(5):104–110.
- Aiken LH et al. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *Journal of the American Medical Association*, 288(16):1987–1993.
- Alderson D, Montesano D (2003). *Regulating, de-regulating and changing scopes of practice in the health professions: a jurisdictional review – a report prepared for the Health Professions Regulatory Advisory Council (HPRAC)*. Ottawa, Government of Ontario.
- Atser J, Akpan P (2009). Spatial distribution and accessibility of health facilities in Akwa Ibom State, Nigeria. *Ethiopian Journal of Environmental Studies and Management*, 2(2).
- Baker Jr EL, Koplan JP (2002). Strengthening the nation's public health infrastructure: historic challenge, unprecedented opportunity. *Health Affairs*, 21(6):15–27.
- Bloom BS (2005). Effects of continuing medical education on improving physician clinical care and patient health: a review of systematic reviews. *International Journal of Technology Assessment in Health Care*, 21(3):380–385.
- Boulton ML et al. (2014). Public health workforce taxonomy. *American Journal of Preventive Medicine*, 47(5):S314–S23.
- Braveman P (2001). World health report 2000: how it removes equity from the agenda for public health monitoring and policy commentary: comprehensive approaches are needed for full understanding. *BMJ*, 323(7314):678–681.
- Brown SM (2018). *PSS insight: a tool for measuring progress in pharmaceutical systems strengthening*. Washington, D.C., United States Agency for International Development (USAID), Systems for Improved Access to Pharmaceuticals and Services (SIAPS).
- Carter R (2016). The impact of primary care reform on health system performance in Canada: a systematic review. *BMC Health Services Research*, 16(1):324.
- Chang C-H (2011). Primary care physician workforce and Medicare beneficiaries' health outcomes. *Journal of the American Medical Association*, 305(20):2096–2104.

- Chaudhry B et al. (2006). Systematic review: impact of health information technology on quality, efficiency, and costs of medical care. *Annals of Internal Medicine*, 144(10):742–752.
- Colvin CJ et al. (2013). A systematic review of qualitative evidence on barriers and facilitators to the implementation of task-shifting in midwifery services. *Midwifery*, 29(10):1211–1221.
- Coronado F, Koo D, Gebbie K (2014). The public health workforce: moving forward in the 21st century. *American Journal of Preventive Medicine*, 47(5):S275–S257.
- Devos C et al. (2019). Performance of the Belgian health system—report 2019. Brussels, Belgian Health Care Knowledge Centre (KCE).
- Dhillon B (2011). Medical equipment reliability: a review, analysis methods and improvement strategies. *International Journal of Reliability, Quality and Safety Engineering*, 18(04):391–403.
- DHS (The Demographic and Health Surveys) Program (2012). Service Provision Assessment (SPA) questionnaires 2012 (<https://dhsprogram.com/methodology/Survey-Types/SPA.cfm>, accessed 17 August 2021).
- Dubois C-A, Singh D. From staff-mix to skill-mix and beyond: towards a systemic approach to health workforce management. *Human Resources for Health*, 7(1):87.
- European Medicines Agency (2021). Availability of medicines: European Medicines Agency; (<https://www.ema.europa.eu/en/human-regulatory/post-authorisation/availability-medicines>, accessed 17 August 2021).
- Farris KB et al. (2010). Preventing unintended pregnancy: pharmacists' roles in practice and policy via partnerships. *Journal of the American Pharmacists Association*, 50(5):604–612.
- Flodgren GM, Meneses J (2017). Unskilled personnel, skill mix, quality of care and patient safety in the healthcare services: a mapping review. Report No.: 8280828885. Oslo, Norwegian Institute of Public Health.
- Frankenberg E (1995). The effects of access to health care on infant mortality in Indonesia. *Health Transition Review*, 1995:143–163.
- GHMT (2012). Study Group 1 of the Global Harmonization Task Force. *Definition of the terms 'medical device' and 'in vitro diagnostic (IVD) medical device'*. Global Harmonization Task Force.
- Hafner T et al. (2017). Defining pharmaceutical systems strengthening: concepts to enable measurement. *Health Policy and Planning*, 32(4):572–584.
- He D, Yu H, Chen Y (2013). Equity in the distribution of CT and MRI in China: a panel analysis. *International Journal for Equity in Health*, 12(1):39.
- Hoare KJ, Mills J, Francis K (2012). The role of Government policy in supporting

- nurse-led care in general practice in the United Kingdom, New Zealand and Australia: an adapted realist review. *Journal of Advanced Nursing*, 68(5):963–980.
- Hsia RY et al. (2012). Access to emergency and surgical care in sub-Saharan Africa: the infrastructure gap. *Health Policy and Planning*, 27(3):234–244.
- Joo JY, Huber DL (2018). Barriers in case managers' roles: A qualitative systematic review. *Western Journal of Nursing Research*, 40(10):1522–1542.
- Karam M et al. (2018). Comparing interprofessional and interorganizational collaboration in healthcare: a systematic review of the qualitative research. *International Journal of Nursing Studies*, 79:70–83.
- Khan MM et al. (2001). A cost-minimization approach to planning the geographical distribution of health facilities. *Health Policy and Planning*, 16(3):264–272.
- Kringos DS et al. (2019). *Expert Panel on effective ways of investing in Health (EXPH) Task shifting and health system design*. Brussels, European Commission.
- Kroezen M et al. (2011). Nurse prescribing of medicines in Western European and Anglo-Saxon countries: a systematic review of the literature. *BMC Health Services Research*, 11(1):127.
- Kruk ME et al. (2009). Are doctors and nurses associated with coverage of essential health services in developing countries? A cross-sectional study. *Human Resources for Health*, 7(1):27.
- Lenel A et al. (2005). *How to organize a system of healthcare technology management*. Geneva, World Health Organization.
- Loureiro S et al. (2007). Diffusion of medical technology and equity in health in Brazil: an exploratory analysis. *The European Journal of Development Research*, 19(1):66–80.
- Maes H-J (2000). World health report—mixtur von harten und weichen daten. *Deutsches Arzteblatt-Arztliche Mitteilungen-Ausgabe A*, 97(36):2289–2295. [In German].
- Mahfoud H, Barkany AE, Biyaali AE (2017). Medical maintenance performance monitoring: a roadmap to efficient improvement. *International Journal of Productivity and Quality Management*, 22(1):117–140.
- Management Sciences for Health (2012a). Chapter 6: pharmaceutical legislation and regulation. In: *MDS-3: managing access to medicines and health technologies*. Arlington, VA, Management Sciences for Health.
- Management Sciences for Health (2012b). Chapter 38: planning for pharmaceutical management. In: *MDS-3: managing access to medicines and health technologies*. Arlington, VA, Management Sciences for Health.
- Mansouri M, Lockyer J (2007). A meta-analysis of continuing medical education effectiveness. *Journal of Continuing Education in the Health Professions*, 27(1):6–15.

- Mantzavinis G, (2003). Geographical inequalities in the distribution of general practitioners in Sweden. *Lakartidningen*, 100(51–52):4294–4297.
- Mapp F, Hutchinson J, Estcourt C (2015). A systematic review of contemporary models of shared HIV care and HIV in primary care in high-income settings. *International Journal of STD & AIDS*, 26(14):991–997.
- Marinopoulos SS et al. (2007). Effectiveness of continuing medical education. Evidence Report/Technology Assessment No 149. AHRQ Publication no. 7-E006. Rockville, MD, Agency for Healthcare Research and Quality.
- Merçay C, Dumont J-C, Lafortune G (2015). Changing patterns in the international migration of doctors and nurses to OECD countries. *International Migration Outlook*, 105–176.
- Mokwena K et al. (2007). Training of public health workforce at the National School of Public Health: meeting Africa's needs. *Bulletin of the World Health Organization*, 85:949–954.
- Murray CJL, Evans DB, eds. (2003), *Health systems performance assessment: debates, methods and empiricism*. Geneva, World Health Organization.
- Nord E (2002). Measures of goal attainment and performance in the world health report 2000: a brief, critical consumer guide. *Health Policy*, 59(3):183–191.
- O'Connor T (2001). *Introduction to medical equipment inventory management*. Report No.: 9241501391. Geneva, World Health Organization.
- ODPHP (Office of Disease Prevention and Health Promotion) (2021). Public health infrastructure. US Department of Health and Human Services (<https://www.healthypeople.gov/2020/topics-objectives/topic/public-health-infrastructure#1>, accessed 17 August 2021).
- OECD (Organization for Economic Cooperation and Development) (2008). *Health policy studies, the looming crisis in the health workforce—how can OECD countries respond?* Paris, Organization for Economic Cooperation and Development.
- OECD (Organization for Economic Cooperation and Development) (2016). *Health workforce policies in OECD countries—right jobs, right skills, right places*. Paris, Organization for Economic Cooperation and Development.
- OECD (Organization for Economic Cooperation and Development) (2019). *Recent trends in international migration of doctors, nurses and medical students*. Paris, Organization for Economic Cooperation and Development.
- OHCHR (Office of the United Nations High Commissioner for Human Rights) (2001a). *Access to medication in the context of pandemics such as HIV/AIDS. Commission on Human Rights resolution 2001/33*. Geneva, Office of the United Nations High Commissioner for Human Rights.

- OHCHR (Office of the United Nations High Commissioner for Human Rights) (2001b). *Declaration of Commitment on HIV/AIDS. General Assembly resolution S-26/2 of 27 June 2001*. Geneva, Office of the United Nations High Commissioner for Human Rights.
- Ono T, Lafortune G, Schoenstein M (2013). *Health workforce planning in OECD Countries: a review of 26 projection models from 18 countries*. Paris, Organization for Economic Cooperation and Development.
- Powles J, Comim F (2003). Public health infrastructure and knowledge. In: Smith R et al., eds. *Global public goods for health: health economic and public health perspectives*. Oxford, Oxford University Press:159–76.
- Prinja S et al. (2015). Availability of medicines in public sector health facilities of two North Indian States. *BMC Pharmacology and Toxicology*, 16(1):43.
- Province of Alberta. Health Professions Act, (1999).
- Rabbanikhah F et al. (2018). Trends of geographic distribution of general practitioners in the public health sector of Iran. *Journal of Education and Health Promotion*, 7:89.
- Rechel B, Maresso A, van Ginneken E (2019). *Health Systems in Transition: template for authors 2019*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Reinhardt UE, Cheng T-M (2000). The world health report 2000–Health systems: improving performance. *Bulletin of the World Health Organization*, 78:1064.
- Richards T (2006). The great medicines scandal. *BMJ*, doi:10.1136/bmj.38868.651736.47.
- Richardson J, Wildman J, Robertson IK (2003). A critique of the World Health Organisation's evaluation of health system performance. *Health Economics*, 12(5):355–366.
- Roberts MJ, Reich MR (2011). *Pharmaceutical reform: a guide to improving performance and equity*. Washington, D.C., The World Bank.
- Robertson J (2015). Medicines availability for non-communicable diseases: the case for standardized monitoring. *Globalization and Health*, 11(1):18.
- Scholz S, Ngoli B, Flessa S (2015). Rapid assessment of infrastructure of primary health care facilities—a relevant instrument for health care systems management. *BMC Health Services Research*, 15(1):183.
- Service Delivery Indicators (SDI) (2017). Home. (<https://www.sdindicators.org/>, accessed 17 August 2021).
- Shi L et al. (2003). The relationship between primary care, income inequality, and mortality in US States, 1980–1995. *The Journal of the American Board of Family Practice*, 16(5):412–422.
- Sousa A et al. (2013). A comprehensive health labour market framework for universal health coverage. *Bulletin of the World Health Organization*, 91:892–894.

- Staton FS et al. (2007). How PAs improve access to care for the underserved. *Journal of the American Academy of Physician Assistants*, 20(6):32–37.
- Tawfik L, Kinoti SN (2006). *The impact of HIV/AIDS on the health workforce in developing countries*. Geneva, World Health Organization.
- Temple-Bird C et al. (2005). *How to operate your healthcare technology effectively and safely*. Geneva, World Health Organization.
- Tsarouhas PH (2010). Measuring the efficiency of medical equipment. *World Academy of Science, Engineering and Technology* 4(44):340–345.
- UN (2021). SDG indicators–metadata repository. (<https://unstats.un.org/sdgs/metadata/>, accessed 17 August 2021).
- USAID (2017). Explore USAID’s health system assessment approach v3.0. (<https://www.hfgproject.org/the-health-system-assessment-approach-a-how-to-manual/>).
- Valdivia M (2002). Public health infrastructure and equity in the utilization of outpatient health care services in Peru. *Health Policy and Planning*, 17(suppl. 1):12–19.
- Verma A, Bhatia S (2016). A policy framework for health systems to promote triple aim innovation. *HealthcarePapers*, 15(3):9–23.
- Walt G, Mills A (2001). World health report 2000. *Lancet*, 357(9269):1702–1703.
- Wendt D (2012). *Health System Rapid Diagnostic Tool. Framework, operational Guide, and metrics to measure the strength of priority health system functions*. Durham, NC, Family Health International.
- WHO (1978). *Declaration of Alma-Ata. International Conference on Primary Health Care Alma-Ata, USSR*. Geneva, World Health Organization.
- WHO (2000). *The world health report 2000: health systems: improving performance*. Geneva, World Health Organization.
- WHO (2006). *The world health report 2006: working together for health*. Geneva, World Health Organization.
- WHO (2007a). *Everybody’s business – strengthening health systems to improve health outcomes: WHO’s framework for action*. Geneva, World Health Organization.
- WHO (2007b). *WHA60.29 Health technologies*. Geneva, World Health Organization.
- WHO (2008). *Measuring medicine prices, availability, affordability and price components*. Geneva, World Health Organization.
- WHO (2009). *Toolkit on monitoring health systems strengthening*. Geneva, World Health Organization.
- WHO (2010). *Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies*. Geneva, World Health Organization.
- WHO (2011a). *Harmonized monitoring and evaluation indicators for procurement and supply management systems: early-warning indicators to prevent stock-outs and*

- overstocking of antiretroviral, antituberculosis and antimalaria medicines*. Report No.: 9241500816. Geneva, World Health Organization.
- WHO (2011b). *Medical equipment maintenance programme overview*. Geneva, World Health Organization.
- WHO (2011c). *Computerized maintenance management system*. Geneva, World Health Organization.
- WHO (2015). *Health Statistics and Information Systems. Service Availability and Readiness Assessment (SARA): an annual monitoring system for service delivery*. Geneva, World Health Organization.
- WHO (2016a). *WHA69.19 Global strategy on human resources for health: workforce 2030*. Geneva, World Health Organization.
- WHO (2016b). *Global diffusion of eHealth: making universal health coverage achievable—report of the third global survey on eHealth*. Geneva, World Health Organization.
- WHO (2016c). *Atlas of eHealth country profiles 2015: the use of eHealth in support of universal health coverage—based on the findings of the 2015 global survey on eHealth*. Geneva, World Health Organization.
- WHO (2016d). *Regional Office for the Western Pacific. Health workforce regulation in the Western Pacific Region*. Manila, WHO Regional Office for the Western Pacific.
- WHO (2017a). *National health workforce accounts: a handbook*. Geneva, World Health Organization.
- WHO (2017b). *Global atlas of medical devices*. Report No.: 9241512318. Geneva, World Health Organization.
- WHO (2017c). *WHO list of priority medical devices for cancer management*. Geneva, World Health Organization.
- WHO (2018). *WHA71.7 Digital health*. Geneva, World Health Organization.
- WHO (2019a). *WHO Guideline: recommendations on digital interventions for health system strengthening*. Geneva, World Health Organization.
- WHO (2019b). *Primary health care on the road to universal health coverage—2019 global monitoring report*. Geneva, World Health Organization.
- WHO (2019c). *The selection and use of essential in vitro diagnostics: report of the second meeting of the WHO strategic advisory group of experts on in vitro diagnostics (including the second WHO model list of essential in vitro diagnostics)*. Report No.: 9241210311. Geneva, World Health Organization.
- WHO (2019d). *Standardized health facility survey module – a working document*. Geneva, World Health Organization.
- WHO (2019e). *Global strategy on digital health: 2020–2024*. Geneva, World Health Organization.

- WHO (2019f). *World Health Organization model list of essential medicines: 21st list*. Geneva, World Health Organization.
- WHO (2020). *Priority medical devices list for the COVID-19 response and associated technical specifications: interim guidance*. Geneva, World Health Organization.
- WHO (2021a). National health workforce accounts data portal (<https://apps.who.int/nhwportal/>, accessed 17 August 2021).
- WHO (2021b). Infrastructure and technologies. (<https://www.who.int/hospitals/infrastructure-and-technologies/en/>, accessed 17 August 2021).
- WHO (2021c). Medicines. (https://www.who.int/health-topics/medicines#tab=tab_1, accessed 17 August 2021).
- WHO (2021d). Harmonized health facility assessment (HHFA) modules. (<https://www.who.int/data/data-collection-tools/harmonized-health-facility-assessment/introduction>).
- Wirtz VJ et al. (2017). Essential medicines for universal health coverage. *The Lancet*, 389(10067):403–476.
- Witthayapipopsakul W et al. (2019). Equity of health workforce distribution in Thailand: an implication of concentration index. *Risk Management and Healthcare Policy*, 12:13.
- Zelisko D et al. (2014). Ensuring accountability through health professional regulatory bodies: the case of conflict of interest. *Healthcare Policy*, 10(SP):110.
- Zhou K et al. (2015). Inequality trends of health workforce in different stages of medical system reform (1985–2011) in China. *Human Resources for Health*, 13(1):94.
- Zigante V. (2018). *Informal care in Europe: exploring formalisation, availability and quality*. Brussels, European Commission.

Financing

Jonathan Cylus, Julia Sallaku, Matthew Jowett

6.1 Introduction

At its core, health financing constitutes a simple but integral function of a health system: raising and spending money on health care. However, it has the potential to do much more. It can make funding available in the right places and create financial incentives for providers to ensure that everyone has access to effective public health and personal health care (WHO, 2010). Health financing is key to enabling interactions between providers and the general population, establishing myriad actions, including who pays for care, when they pay, how much they pay, who they pay and obtain services from, and what types of services they can receive. It is a core function of health systems that can support progress towards UHC by improving effective service coverage and financial protection.

To systematically unpack this function, we have broken health financing down to three sub-functions which, together, describe the flow of monetary resources through the health system:

- revenue raising
- pooling resources
- purchasing goods and services.

We also consider an overarching fourth sub-function in this chapter, the governance of health financing. This relates to normative issues inherently linked to financing, such as benefit design – including who is covered, what is covered and how much of the cost is covered – and public financial management of the health sector. This chapter details each of the sub-functions of health financing and suggests existing indicators that can be used to assess the performance of those sub-functions.

6.2 Understanding the financing function

6.2.1 *Where financing fits into the health system performance framework*

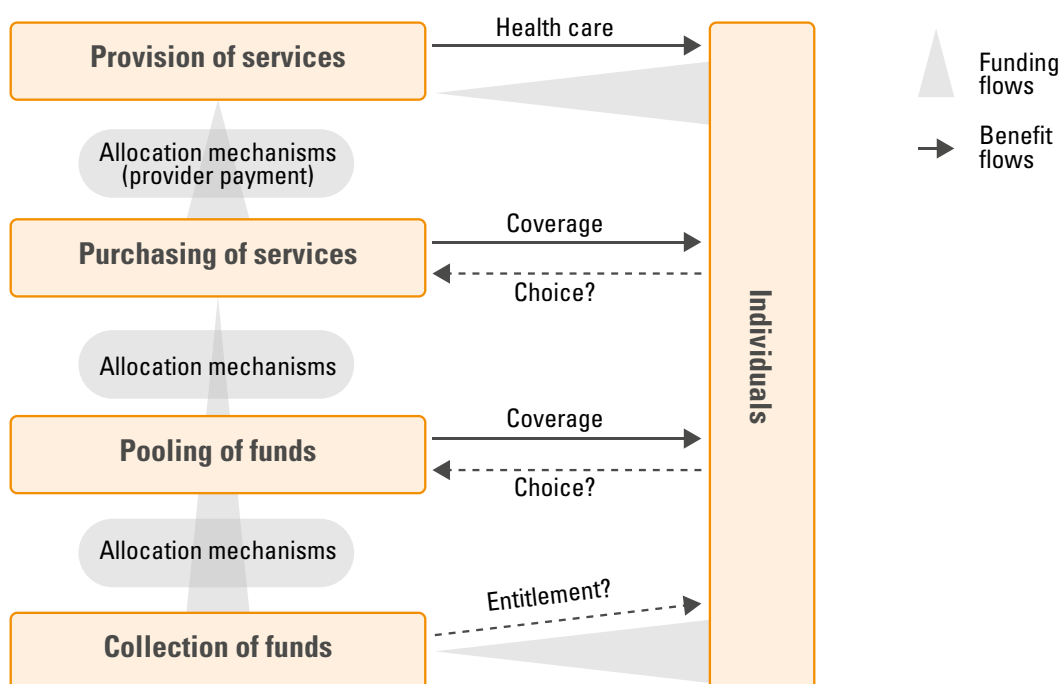
Financing is one of the four health system functions and links to each of the other main functions through a number of pathways. For instance, financing is crucial to operational aspects of governance, such as setting strategic directions, and by providing sufficient monetary resources to support the implementation of policies. The financing function offers monetary incentives to providers to prioritize delivery of certain types of services, and encourages providers to provide those services at the highest quality and/or most efficiently. The financing function is also responsible for ensuring adequate population coverage – either because entitlement to services is based on whether an individual has contributed financially to the health system; or whether an implicit contribution to the health system has been made on that individual's behalf. Without a strong financing function, health professionals might emigrate to health systems providing better remuneration and there will be no resources to build facilities or pay for medicines. Put simply, financing is key to the success of all functions of the health system.

Although financing plays an important role in a health system's overall performance, it generally does so through its interactions with the other three functions. For example, financing affects health outcomes, not directly, but through other functions such as service delivery, because monetary compensation motivates providers to deliver quality health care (Cashin et al., 2014). There are also obvious linkages from financing to financial protection: the degree to which households experience financial hardship as a result of using health services. Financial protection can vary as the result of a number of characteristics of health financing systems. These include the importance of co-payment design for determining exposure to out-of-pocket (OOP) payments and the need for the health system to generate sufficient monetary resources to ensure access to quality services; as without this, people will seek care privately and may be exposed to significant expense (Thomson, Cylus & Evetovits, 2019). At the same time, financial protection is dependent on other functions, such as the availability of services – because a lack of availability may lead to unmet need rather than financial hardship due to use. It should be self-evident that while financing is core to the performance of the health system, it is still merely one piece of a very complicated and interconnected structure.

6.2.2 Conceptualizing financing

The financing function has received considerable attention from academics and health policy researchers, including by WHO. Fig. 6.1 contains Kutzin’s seminal 2001 framework (Kutzin, 2001) describing a generic health financing system. The framework shows the links between revenue raising, pooling, purchasing and provision, and how funds flow from one to another. The impact of this framework has largely been to move conventional thinking about health financing away from distinguishing health financing systems based on institutional characteristics – such as whether a financing system is tax-based or social health insurance-based, which are, essentially, meaningless despite being ubiquitous classifications – towards thinking about the sub-functions of those financing systems. To illustrate how little information is captured by the tax versus social health insurance distinction, one could imagine a hypothetical tax-based system where public financing is heavily dependent on payroll taxation, making it similar to the archetypal social health insurance system that is heavily reliant on the labour market for funding. Alternatively, a social health insurance-based system could depend heavily, or almost entirely, on transfers from general tax revenues for funding. Indeed, the reality in many countries is somewhere between these artificially polarized classifications. Most importantly, neither the tax nor the social health insurance titles gives any real indication of how funds are collected, pooled or spent.

Fig. 6.1 Health financing framework (Kutzin)



Source: Kutzin (2001).

One can also see from the Kutzin framework in Fig. 6.1 how the main financing sub-functions discussed in this chapter – referred to in Fig. 6.1 as collection of funds, pooling of funds and purchasing of services – are linked by the flow of funds in the health system, which is represented by the grey triangles. The framework also considers a multitude of policy decisions in terms of who is covered, what is covered, and how much of the cost is covered – some of which is discussed later in the governance of health financing sub-function.

6.3 Sub-functions

The basic sub-functions of health financing are well established, and Fig. 6.2 shows how they fit together.

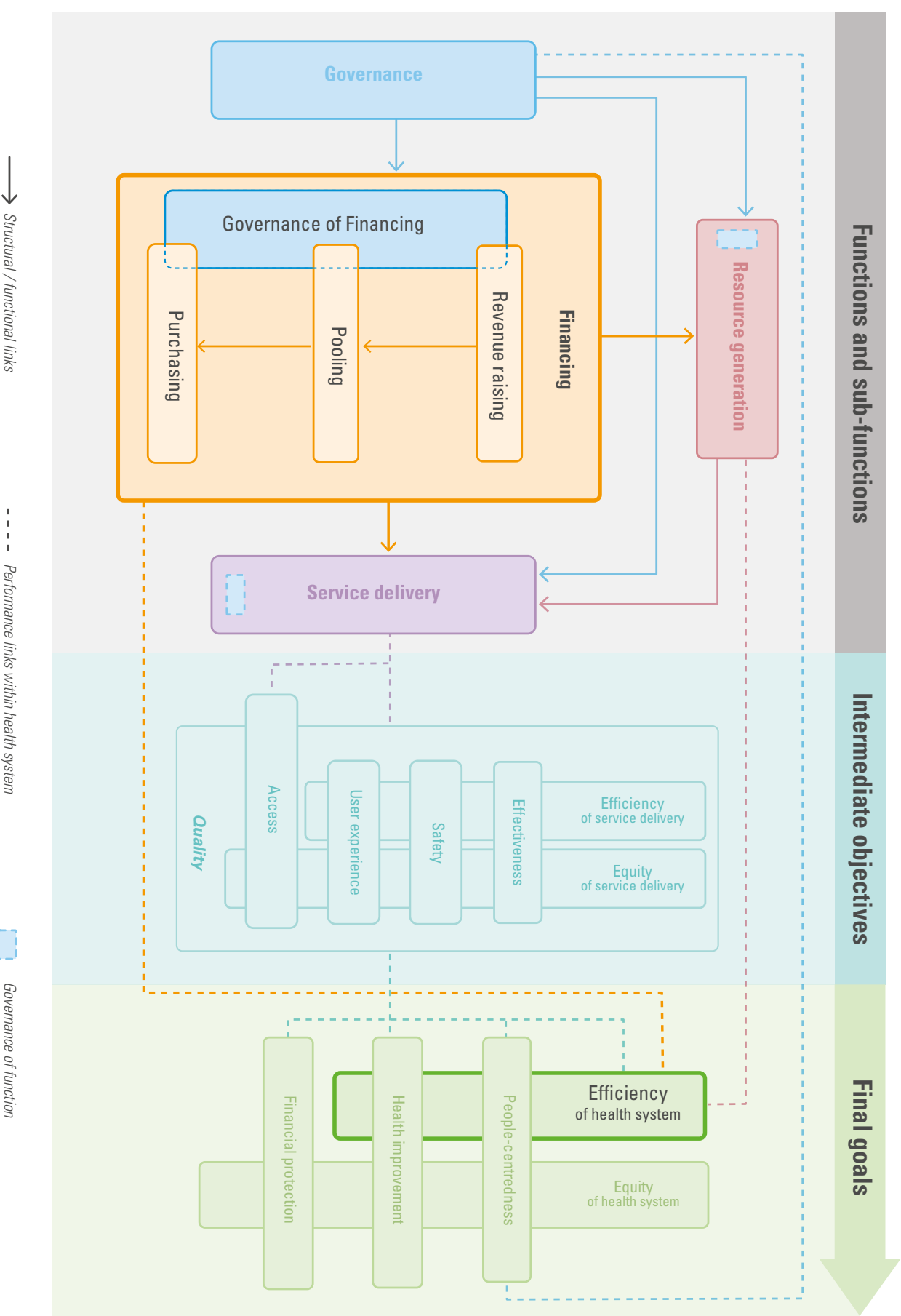
6.3.1 Revenue raising

Revenue raising refers to the ways in which money is brought into the health system. In most countries, apart from funds that come from external sources, the population is ultimately the source of all, or most, funds for the system. Revenue is collected through OOP payment at the point of service use, or through pre-paid funds including insurance contributions and/or taxes. In part, the way money is generated for the health system depends on whether third-party payers in the system are public or quasi-public, and hence compulsory; or private, as either profit or not-for profit models.

In a public, or quasi-public, scheme, money for the health system comes from taxation, which may or may not be specifically earmarked for health; or through social health insurance contributions, which could also be considered to be an earmarked tax. Funds may also come from external sources, such as donors, and then be channelled into the health system via the Ministry of Finance. In many settings, entitlement to care is dependent on the payment of contributions or taxes, whereas other systems do not link entitlement to having contributed pre-paid funds. Focusing on forms of taxation, there is still a wide range of possible sources of financing. These include consumption taxes, property taxes, income taxes, payroll taxes and corporate taxes.

In a private scheme, regardless of whether it is for profit or not, money comes from premiums paid by households and/or employers and these can be community-rated (the same premium level is required from everyone in a given geographic area) or experience-rated (where premium levels vary by individual according to expectations

Fig. 6.2 Financing sub-functions



Source: Authors' compilation.

regarding their particular risk). Indirectly, private insurance revenues can be affected by taxation policies if premiums are paid pre-tax, effectively subsidizing private insurance. Private schemes range from large private insurers to community-based health insurance.

Out-of-pocket payments could also be considered a form of revenue raising. However, as they are used to pay for care at the point of use, rather than to accumulate resources that can ultimately be pooled and used to purchase care, they are most appropriately addressed in this chapter in the purchasing section.

6.3.2 *Pooling resources*

Pooling refers to the accumulation of prepaid funds that can be used to purchase goods and services on behalf of a population. It is crucial to delineate pooling and revenue raising as two different functions of health financing. Revenue raising, as explained previously, refers to the funding sources; in other words, who pays into the system? And this can provide insights into whether the burden is distributed equitably. Whereas pooling focuses on who benefits from health spending, because the pooling structure defines the extent to which prepaid funds can be redistributed across a particular population.

Pooling is an important function of all health financing systems, not just insurance schemes (WHO, 2019). Some systems will have a single pool that may consolidate funding from different revenue raising sources; other systems might have multiple pools. And where there are multiple pools there could be distinct revenue collection mechanisms for each pool, or each pool may draw on the same revenue generating streams – or there may be a mix of streams, as in the case for regional pools that are funded both regionally and nationally.

Some sort of resource allocation or equalization formula might be used in an effort to ensure that each pool has an allocation appropriate for the population it covers. Allocations can be from a collecting agency to the pooling agency, for example Ministry of Finance to Ministry of Health; from the initial source of funds to the pooling agency, private insurers that implement collection and pooling together, for instance; or from one pool to others, such as the allocation from a central pool to competing or geographically based pooling organizations and using a risk adjustment process that takes into account differences between populations that are expected to correlate with health care costs, such as age, health status or socioeconomic characteristics.

An important distinction between different pools is often the populations and benefits that are covered. In some health systems, people can choose which pool to be affiliated to, while in others the pool they are covered by is compulsory or determined automatically. Compulsory participation refers to the legal requirement that exists for specific individuals, groups or the entire population to join the pool. Mandatory contributions are then made by, or on behalf of, the covered population (WHO, 2019). Automatic participation is typically based on legal or constitutional obligations, and the basis for entitlement is non-contributory, deriving from citizenship, residence or other factors such as low income. This sort of automatic entitlement is typically funded solely from general budget revenues. Although many of those with non-contributory entitlement pay taxes in some form, there is no direct linkage between explicit contribution and entitlements (Mathauer, Saksena & Kutzin, 2019). Whereas individuals who make a voluntary pre-payment and enrol in a scheme are not legally obliged to do this. The way in which individuals are included in, or allocated to, pools has important implications for their efficiency and redistributive capacity (Mathauer, Saksena & Kutzin, 2019; WHO, 2019). Table 6.1 provides examples of the various types of pooling organizations and methods used to allocate financial resources to them (Kutzin, 2001).

Table 6.1 *Examples of pooling organizations and mechanisms for allocating to or among them*

Pooling organizations	Allocation mechanisms
Ministry of Health <ul style="list-style-type: none"> · Central · Decentralized units (provincial, district health authorities) 	Government (central or local) revenues <ul style="list-style-type: none"> · Historical patterns related to infrastructure · Needs-based weighted capitation formula · Subsidize premium payment for participation of those who are otherwise uninsured
Local government health department Area health boards Social health insurance fund(s) Private insurance companies Employers as “self-insuring” firms Member-owned “mutual” insurers	Earmarked: compulsory contributions <ul style="list-style-type: none"> · Percentage of salary or income · Risk-adjusted allocation to insurers, usually with consumer choice of insurance fund · Opting out, with or without risk adjustment
Fundholding providers and provider-based	Voluntary contributions <ul style="list-style-type: none"> · Individual risk-rated or community-rated premium

Source: Kutzin (2001).

6.3.3 Purchasing goods and services

Purchasing, or commissioning, refers to payers using funds to pay for health care on behalf of a population. These funds can be pooled or include direct OOP payments at the point of service (see below).

Purchasing differs from procurement. Purchasing refers specifically to payment for services or items such as medicines and other supplies used in the context of care provision, whereas procurement is the process of obtaining inputs, and includes both commodities, such as medicines and laboratory supplies, and aspects of capital investment, such as medical devices (WHO, 2019).

Purchasing is often seen as a more useful term than paying because it implies a potentially active approach that might involve:

- choosing to purchase only from accredited providers
- purchasing only cost-effective services
- payment mechanisms that incentivize more, or less, provision.

When a more passive approach to purchasing is taken, funds such as historical budget allocations, or payment to a provider, are not influenced by provider performance or efforts to influence the quantity or quality of health services. In an extreme case, a third-party payer may simply reimburse any bill they receive without question. Moving to more active, or strategic, purchasing implies that funds that are allocated to a provider are, at least in part, linked to aspects of their performance or the health needs of the population they serve (Mathauer, Dale & Messen, 2017).

Throughout this chapter we have said that OOP payments at the point of service might also be considered as a part of purchasing. Out-of-pocket payments refer to payments made by individual service users at the point of use. These may include formal or informal payments, and cover some or – where there is no insurance – all of the cost of services.

Where they cover partial costs, OOP payments may be levied as a percentage of the stated price of care, in other words, a percentage-based co-payment; as a flat user charge irrespective of the full price; or a combination of the two. Often, particularly when it comes to purchasing medicines, there will be a flat user charge or a dispensing fee plus a percentage-based co-payment that reflects the difference between the advertised price of the medicine and a reference price of some kind. Some systems use deductibles where a set amount is paid out of pocket before some degree of insurance kicks in. These mandated OOP payments – which cover a share of the actual cost of care and reflect normative decisions about how much of the cost of care should be covered – OOP payments could be considered to be a component of benefit package design (see Section 6.3.4.1 Coverage policies). For example, policy-makers may opt to cover only a small

percentage of the cost of a low-value service and expose users to the majority of costs OOP (Elshaug, McWilliams & Landon, 2013); or cover a service only for a small subset of the population most likely to benefit from it. Including OOP payments as part of benefit design is the conceptual approach used by the WHO Health Financing Progress Matrix (HFPM).

In many cases OOP payments are mandated in a largely ineffective attempt to rationalize health service demand by sending price signals to patients (Thomson, Foubister & Mossialos, 2010); in some settings they are also viewed as revenue-raising instruments. It is important to note that our discussion of OOP payments as a form of purchasing does not conflict with any notion that they are also a form of raising revenues. However, because OOP payments are not pooled, it makes most sense to consider them as an example of the purchasing sub-function.

6.3.4 Governance of health financing

The three sub-functions of health financing described above naturally fit together to describe the flow of funds: from how money is generated, pooled and then used to pay for health care services. But there are many related choices and factors that determine whether the sub-functions are fit for purpose and able to perform adequately. For example, is the money collected sufficient to cover the benefits promised? Will money be able to travel seamlessly through the system from government agencies to purchasers and providers, or are there structural factors that inhibit the way money is collected and allocated?

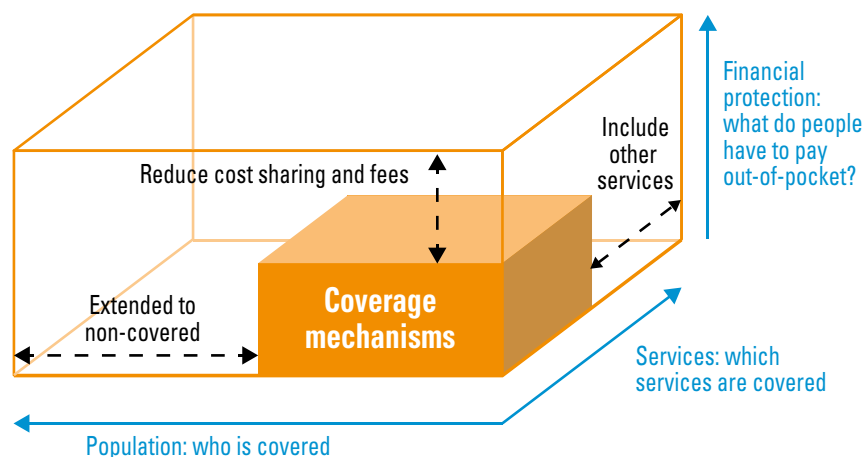
We refer to the choices, rules and normative decisions that relate to health financing as the governance of health financing sub-function. More specifically, within the governance of health financing, we consider policies relating to benefits design and coverage and public financial management (PFM) as two important aspects. Coverage policies are normative decisions which relate closely to health financing whereas PFM indicates the rules that govern the allocation, use and accounting of public funds.

Although we include only the two particular governance aspects that directly pertain to the governance of financing, there are many more that are highly relevant to financing, as well as to other health system functions such as transparency, particularly of decision-making by various institutions, and participation. These and other governance aspects are discussed more generally in the governance function chapter (see Chapter 4).

6.3.4.1 Coverage policies

Coverage policies determine who is covered, what the pooled public revenues will pay for, and any restrictions or conditions of access. All countries limit health service entitlements in one way or another. Coverage policy decisions determine the specifics of how benefits are rationed, and so influence health system performance and progress towards UHC goals. Some may consider coverage policies as part of purchasing because they reflect decisions around entitlements, but arguably they should not be made by the purchaser, but rather left to a higher level, such as central government, which can more directly be held to account by citizens and which may be less concerned with cost implications.

Fig. 6.3 *UHC cube*



Source: European Observatory (2019).

To illustrate the inextricable linkages between the rest of financing and coverage policy, the widely known coverage cube (Fig. 6.3) breaks health care coverage down to three dimensions: population coverage, service coverage and financial coverage or financial protection – with the yellow box representing pooled funds (WHO, 2010). The performance of the health system ultimately reflects myriad coverage policy choices within these dimensions, and these are highly intertwined with, and dependent on, other aspects of the financing function.

For example, a health system may nominally cover the entire population for a comprehensive package of benefits. But, in practice, if it does not raise sufficient revenues to fund this coverage, it will not be able to deliver access to quality services. There are a

number of ways this can happen: funding shortfalls may result in supply shortages or a narrow benefits basket, or it could be that inadequate funding leads to prohibitively high OOP payments – either in the form of high co-payments or as informal payments – to make up the shortfall. High user charges with no co-payment exemptions for poor households create barriers to accessing care, even in a system with universal population coverage. At the same time, a country could have very high levels of spending, but exclude a large segment of the population from coverage for reasons such as employment status, age and citizenship.

Even if the entire population is technically covered for the same basket of services, an inequitable distribution of funds across pools could result in inequalities in access to services. A weak purchasing function may lead to unnecessarily high prices and limit the breadth, or depth, of the benefits package a health system can afford.

As these examples illustrate, coverage policies impact the rest of the financing function, and vice versa.

6.3.4.2 Public financial management in health

Public financial management refers to the set of rules and mechanisms that govern the allocation, use and accountability of public funds. It is important for the management of resources from all sources at national and subnational levels (WHO, 2017). With respect to the health system in particular, the PFM system plays a key role in the budgetary formulations that determine the level and allocation of public funding for health; the execution of that budget in terms of effectiveness and targeting of spending; and financial monitoring and transparency (WHO, 2019). A clear understanding of PFM, and how it works, is especially useful for health policy-makers to ensure they are equipped to frame and guide their discussions with ministries of finance.

If PFM and health financing systems are aligned, then it follows that they can also reinforce each other's objectives and achieve more effective and efficient use of public funds, better financial accountability and greater transparency. For example, a strong link between PFM and health financing can ensure that health sector priorities and objectives are reflected in funding decisions and that there are clear lines of accountability on how resources are spent. Two important, and relevant, concepts that demonstrate the importance of PFM to health financing are policy-based budget formulation, where policy and budget formulation processes are closely linked; and programme-based

budget classification, where countries move from input line items (for example, budgeting based on the quantity of inputs such as numbers of hospital beds) to budgets based on programmes, which can be linked to strategic priorities and objectives as well as performance.

6.4 Assessing the performance of the financing function

Each of the financing sub-functions can be evaluated in a number of dimensions that reflect performance. Here we consider some of the main assessment dimensions pertinent to each sub-function (Fig. 6.4) and, where appropriate, illustrate them with quantitative and/or qualitative indicators. To inform this, we reviewed potential indicators from a range of different tools:

- National Health Accounts, which feature in many other tools
- Health System Assessment Approach: A How-To Manual (USAID, 2017)
- Situation Analysis of the Health Sector (Rajan, 2016)
- Health System Reviews (HiTs) (European Observatory, 2002)
- WHO HFPM (Jowett et al., 2020), which aims to collect timely information on the health financing sub-functions through a series of questions and ratings or categorizations.

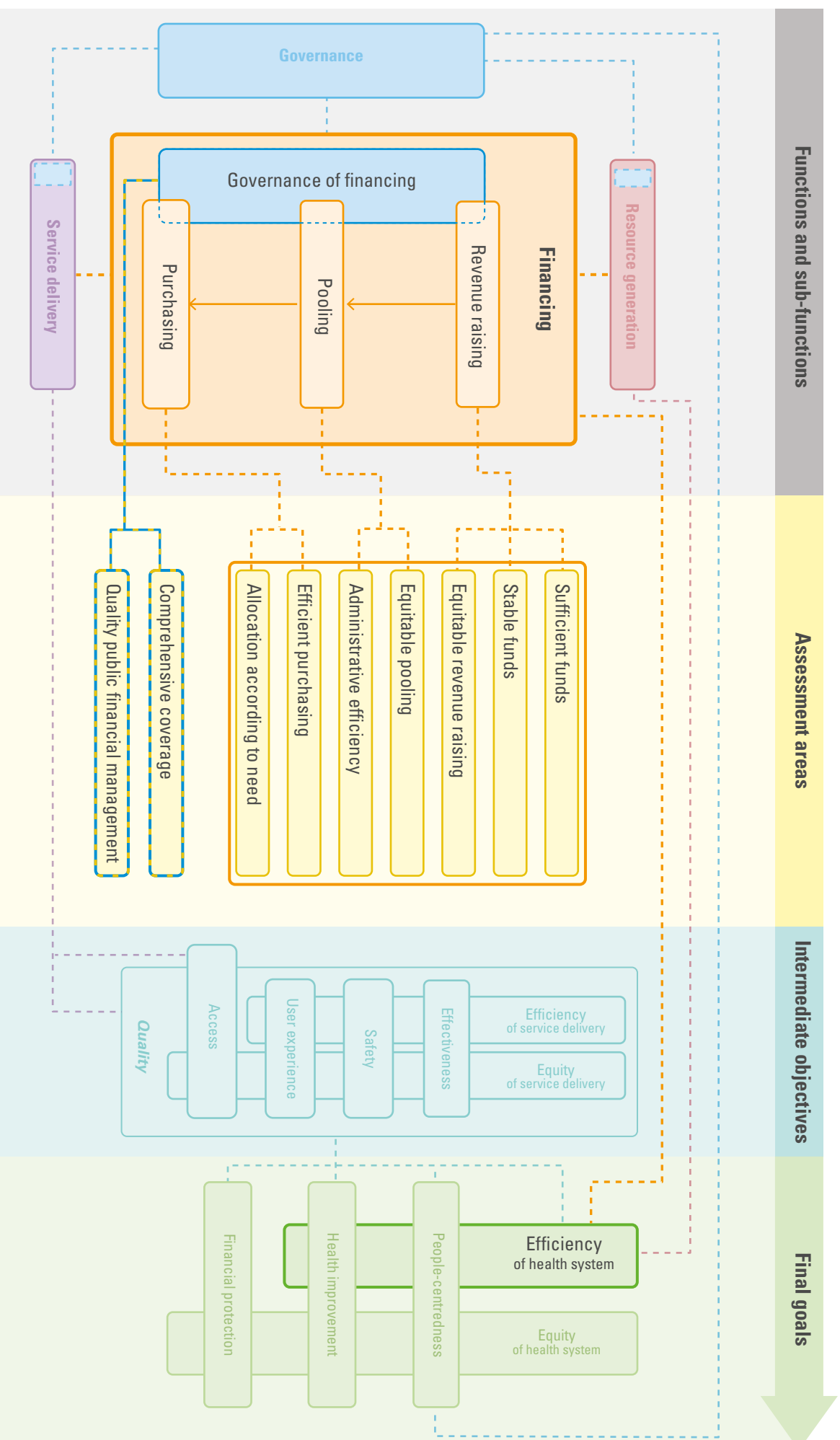
Our primary aims are to produce an objective, primarily qualitative assessment of how well each health financing sub-function is aligned to good practice; to enable some degree of performance assessment; and to support dialogue with countries about health system priorities. We focus on the HFPM throughout this section of the chapter.

6.4.1 Assessing the performance of Revenue Raising

A revenue raising sub-function that performs well should ensure that the health system has sufficient resources to meet health care needs; that those resources are stable, predictable and able to cope with shocks and that they are collected in an equitable manner in order to ensure the burden of financing does not fall on the poor or sick.

A range of widely available indicators can provide some insights into these aims. Ideally, one would want information on the different sources of financing and their relative size over time. However, while there are data available on health expenditures, there is usually little, or no, specific information on revenues. This distinction is important

Fig. 6.4 Assessing financing



Source: Authors' compilation.

because expenditures can come from revenues that are generated through a number of mechanisms and these can have different implications, particularly for stability and equity. For example, government spending on health can be raised through different taxes as well as external sources of funding, but in some countries not all of these sources of funding will be stable, predictable or equitable.

Nevertheless, all the reviewed HSAs and countries reports contain information on health expenditures. The WHO Global Health Expenditure Database provides internationally comparable National Health Accounts data on health spending for close to 190 countries from 2000 to 2017. Table 6.2 contains some relevant National Health Accounts indicators. These are expressed as a share of current health expenditure or GDP, although they can also be expressed in other units including total spending, or expenditure per capita. It is important to note that although these accounts can be informative when considered alongside other health system data, in isolation they tell us very little. For example, current health expenditure as a share of GDP may be relatively low in a very wealthy country, even if per person spending is adequate or in line with comparator countries, as is the case with Singapore. At the same time, countries such as the USA, which spend a very high share of their economic resources on health, may perform poorly on measures of equity of access and health outcomes. This suggests that due to distributional issues and other inefficiencies, these high expenditures are, in fact, inadequate. Put simply, higher levels of spending do not necessarily imply that revenue generation is sufficient. To assess whether the revenue generated meets expenditure needs, one could look for evidence of underfunding, such as excessive waiting times, a very narrow benefits package or other barriers to accessing needed services. However, the availability of this information is limited, or at best inconsistent, in the HSAs reviewed.

Table 6.2 *Measures from National Health Accounts*

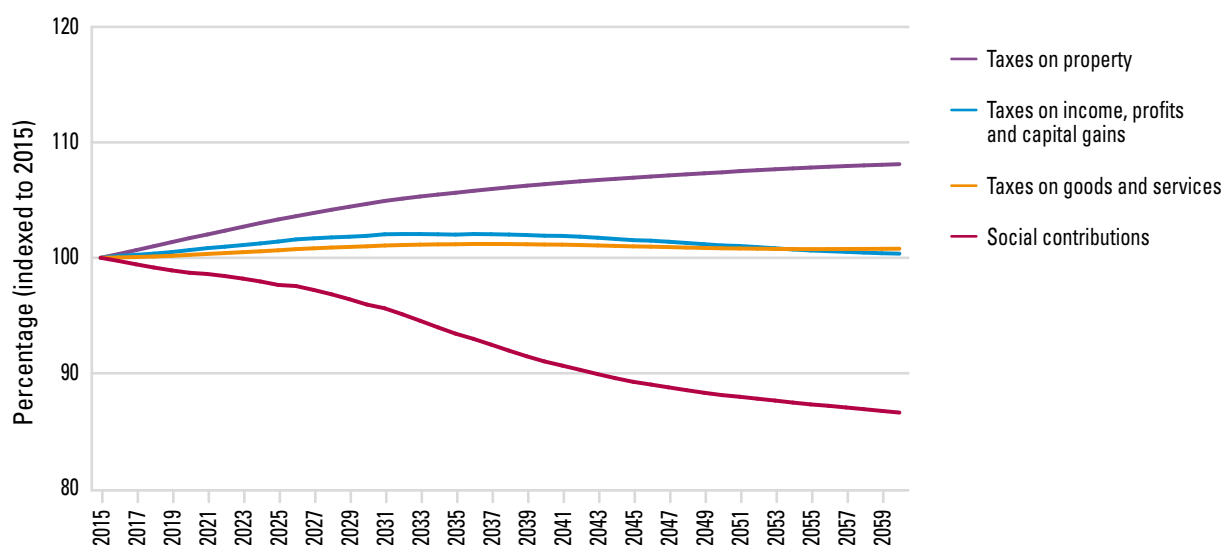
Current health expenditure (CHE) as a percentage of Gross Domestic Product (GDP)
Domestic general government health expenditure (GGHE-D) as a percentage of gross domestic product (GDP)
Domestic general government health expenditure (GGHE-D) as a percentage of current health expenditure (CHE)
Domestic general government health expenditure (GGHE-D) as a percentage of general government expenditure (GGE)
Out-of-pocket (OOP) expenditure as a percentage of current health expenditure (CHE)
Health expenditure from external sources (EXT) as a percentage of current health expenditure (CHE)
Domestic private health expenditure (PVT-D) as a percentage of current health expenditure (CHE)
Voluntary health insurance (VHI) Prepayments as a percentage of current health expenditure (CHE)

Source: Authors' compilation.

Stable funding is important for effective planning and to prevent any shortages that undermine service delivery (WHO, 2019). At a very aggregate level, information could be gleaned from looking at the National Health Accounts indicators in Table 6.2 over multiple years, to see if there are wide fluctuations. For example, if domestic government funding as a share of current health expenditure changes drastically from year to year, this may point to an issue with stability of public funds. And since there is strong evidence that improved health outcomes, and progress towards UHC generally, is dependent on public funds, it is worthwhile to consider National Health Accounts data on the share of spending that comes from public sources (Bokhari, Gai & Gottret, 2007; Farahani, Subramanian & Canning, 2010; Serra-Moreno & Smith, 2012).

Another way to assess the stability of revenues, which relies more on revenue data than expenditures, would be to look at historic economic fluctuations – such as variations in unemployment rates – or demographic changes, and any links between these variables and changes in revenues from particular sources. For example, recent research shows that population-ageing reduces the ability to raise revenues from social insurance contributions because people age out of the formal labour market (Fig. 6.5). While research from Slovenia has shown that social contributions to the Health Insurance Institute are susceptible to increases in unemployment (WHO, 2015). The key finding here is that, without diverse revenue streams, revenues can be sensitive to external shocks to a particular revenue base.

Fig. 6.5 *How does population-ageing affect revenue generation for health? Japan case study*



Source: Cylus et al. (2019).

Table 6.3 *Indicative measures for revenue collection*

<p>OOO expenditure as a total of health expenditure</p> <hr/> <p>OOO expenditure as a total of total household consumption</p> <hr/> <p>Kakwani indices: a measure of progressivity that can be calculated for each source of financing. The progressivity of the entire financing system can be subsequently established by weighting the progressivity (using the macro-weights) of the finance sources.</p>
--

Source: Authors' compilation.

Note: OOO, out-of-pocket.

Equity of financing addresses several important questions:

- Who pays for health care?
- To what extent is the funding of health care related to ability to pay?
- Is the relationship proportional?
- Is the relationship progressive, in other words, do health care payments account for an increasing proportion of ability to pay as the latter rises?
- Is there a regressive relationship?

A number of metrics can be used to assess equity of financing specifically in the context of revenue raising (Table 6.3). Although in our framework we consider OOO spending as part of purchasing, OOO spending as a share of total spending provides some insights into equity of revenue generation – because high levels of OOO payments suggest that people are paying at the point of use according to need, rather than ability to pay. Generally speaking, it is much more difficult to ensure equitable revenue generation when a health system relies on financing through OOO payments. There is also a distinct likelihood that, if health care financing is reliant on direct OOO payments, there will invariably be inequalities in access, and ultimately outcomes, because some people will face financial barriers to accessing care.

To look at the distribution of the burden of financing properly, one typically needs household-level data, not macro-level National Health Accounts data. Health financing is progressive if richer people spend a greater portion of their resources on health than poorer people. Conversely, it is regressive if poorer people spend a greater portion of their resources on health. At a basic level, one could look at the distribution of OOO health spending according to household socioeconomic status – data that are routinely available in household budget surveys. This would involve a comparison of the OOO share of total household consumption among rich and poor households. Or one could look at the progressivity or regressivity of specific sources of funding using Kakwani

indices, which can be weighted to account for the contribution to total health financing of each funding source (Fig. 6.6) (Thomson, Vörk & Habischt, 2010). Fig. 6.6 shows how much different types of financing sources contribute to progressivity or regressivity of financing; for example, in Estonia social taxes and personal income taxes are fairly progressive because wealthier people pay a higher amount; however, OOP spending is very regressive due to the disproportionate burden it places on poorer households.

Fig. 6.6 *Equity of financing using Kakwani indexes, Estonia*



Source: Thomson, Vörk & Habicht (2010).

6.4.2 Assessing the performance of pooling

The pooling function is largely intended to ensure that resources are distributed in an equitable way and also to enable efficiency through economies of scale.

Pooling of monetary resources is considered using a mix of qualitative and quantitative data in the HSA tools we reviewed (Table 6.4). In HSAs, pooling is sometimes described jointly with design of benefits and entitlement as one sub-function, perhaps because differences across pools in the populations covered, and the benefits basket, are seen as the most relevant aspect of pooling. We consider design of benefits and entitlement – coverage policies – to be separable from pooling because the decision to vary coverage or benefits by pool is normative. However, this distinction is not particularly important.

Table 6.4 *Indicative measures for pooling*

Indicative measure
Per person expenditure, by pool
Population coverage, by pool
Spending on administration, total and by pool
Ratio of voluntary health insurance coverage as a percentage of the population, to voluntary health insurance expressed as a percentage of current health expenditure
Pooling arrangement description (See Table 6.5 for example questions)

Source: Authors' compilation.

Assessing whether the pooling function is achieving its objectives can be done in various ways. First, following on the approach of the HFPM, one can describe the pooling arrangements using quantitative indicators (WHO, 2020), or in a more qualitative way (Table 6.5). This can give a sense of the degree of fragmentation and whether there are likely to be effective mechanisms to redistribute resources across the population according to need.

Table 6.5 *Measures for pooling in the Health Finance Progress Matrix*

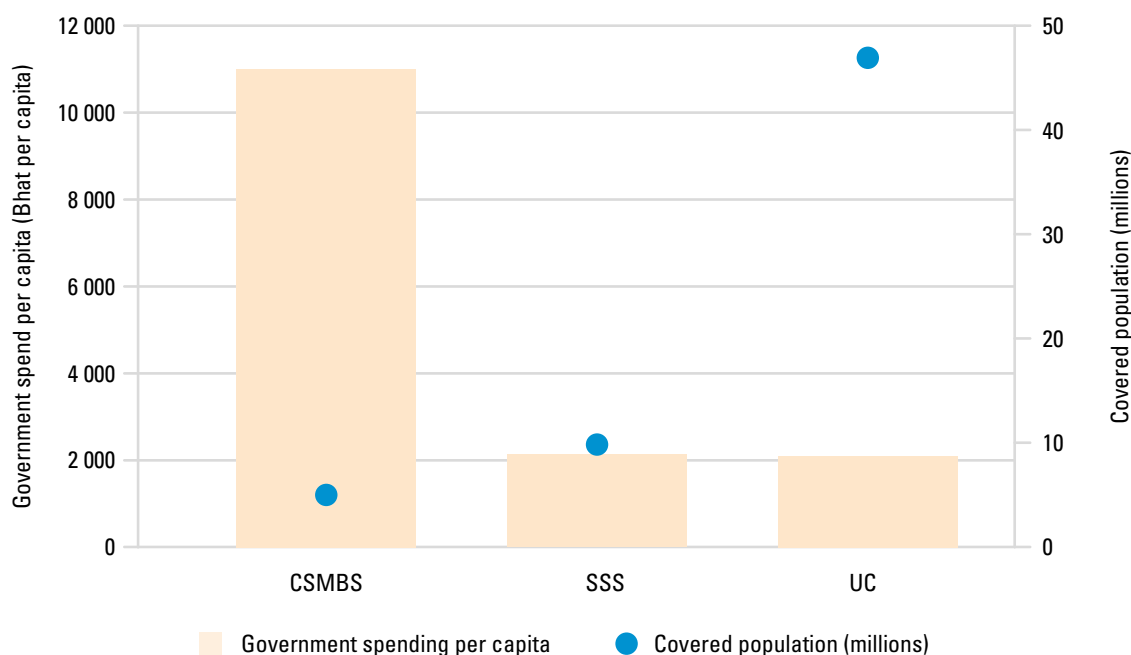
Indicative measure from HFPM	Definition and descriptive information
Does your country's strategy for pooling revenues reflect international experience and evidence?	This question focuses on the country's policy, strategy and/or vision regarding pooling arrangements. Information you need to look at: <ul style="list-style-type: none"> · Available policy statements on fragmentation and how they try to mitigate it · Policy statements on Voluntary Health Insurance.
Are multiple revenue sources and funding streams organized in a complementary manner, in support of a common set of benefits?	Look at different revenue sources and fund flows within a health system and how they may or may not complement each other. Promised benefits/entitlements and the way that funds flow to, or from, this is of great importance in analysis of the issues raised by this question.

Source: WHO (2020).

If there are multiple schemes, it could be useful to consider, more explicitly, the variations in resources allocated across pools to see how well they are harmonized. This provides some insight into the likelihood of variations in access to care for people covered by

different schemes. For example, one could simply compare per capita spending by scheme. Fig. 6.7 presents data from Thailand showing that the majority of the population, who are covered by the universal care scheme, has access to fewer resources per person than other schemes. This suggests equity gains are possible through improved allocation mechanisms.

Fig. 6.7 *Per person spending by scheme, Thailand*



Source: Adapted from Winai S (2010).

Note: CSMBS, Civil Service Medical Benefit Scheme; SSS, Social Security Scheme; UC, Universal Health Coverage Scheme.

In terms of efficiency, besides the simplistic consideration that having fewer schemes is likely to achieve greater economies of scale, one could look at spending on administrative costs to assess the degree of administrative waste due to fragmentation. However, it is important to note that a system should not be judged as better or worse solely on the basis of administrative expenditure; high administrative spending could be a sign of waste, whereas excessively low administrative spending could imply an inability to effectively manage the system because of underfunding.

6.4.3 Assessing the performance of purchasing

Purchasing, much like pooling, is concerned with getting resources to those who need them most and doing this efficiently by minimizing costs. As a result, purchasing can have a major impact on intermediate objectives such as quality and, ultimately, health outcomes.

Assessing this function can be challenging, however, as few metrics focus specifically on purchasing (Table 6.6). The reviewed HSAs contain information on provider payment mechanisms – which, depending on the wider context, could be useful for assessing purchasing. For example, if there is any suggestion of overutilization of specialist services, it might be useful to know whether fee-for-service payments are in place, as this could result in some supplier-induced demand (Delattre & Dormont, 2003).

Table 6.6 *Indicative measures for purchasing*

Indicative measure	Definition
Payment mechanisms	Descriptive information about how different types of care are paid for
Information on strategic purchasing	The extent to which health systems are able to choose who to purchase from, what to purchase, and at what price
Price data	Data on prices paid for certain services, ideally used for comparison

Source: Authors' compilation.

To assess purchasing using quantitative data, most logically one could compare prices for certain types of care – which could be done using patient vignettes, see EuroDRG, which was a project that made use of data from hospital payment systems to group patient episodes with similar characteristics – but these sorts of data are not routinely available (European Commission, 2011). The key challenge with comparing prices is ensuring that the services and populations are sufficiently similar to warrant comparison. However, as a strong purchasing sub-function should be able to achieve low costs while still maintaining good outcomes, assuming price data are available, it should be a good indicator of purchasing performance.

Some efforts have been taken to measure the extent to which countries engage in strategic purchasing (Klasa, Greer & van Ginneken, 2018). These have included looking at how providers are contracted, public participation in purchasing and the role of performance metrics. But once again, these types of information are not systematically available across countries. One relevant piece of information could be the extent to which countries engage in health technology assessment to make coverage decisions, because the health technology assessment exercise can be useful for negotiations with manufacturers to ensure value for money. However, simply having a health technology assessment agency or process does not guarantee a strong purchasing sub-function.

The HFPM collects useful qualitative information (see Box 6.1 and Table 6.7) on provider payment methods and whether resource allocation methods reflect population health needs.

Box 6.1 *Health Financing Progress Matrix*

Q1. To what extent do fund allocations to lower-level purchasers, for example, local governments, and/or payment rates to providers, reflect population health needs?

Performance dimensions: Equity in resource distribution, Utilization relative to need

Q2. To what extent are provider payments designed for public and private sectors aligned with a country's health policy goals (effective incentives for providers)?

Performance dimensions: Equity in resource distribution, Efficiency, Quality

Q3. To what extent do provider payment methods and purchasing in general, promote quality of care and care coordination?

Performance dimensions: Quality

Q5. To what extent do provider payment methods promote efficiency?

Performance dimensions: Efficiency

Q6. To what extent are providers given financial autonomy and held accountable?

6.4.4 *Assessing the performance of governance of financing*

In this section we consider how to assess two key dimensions of the governance of financing: coverage policies and public financial management.

6.4.4.1 **Coverage policies**

A comprehensive quantitative assessment of coverage policy design is, inherently, complicated because coverage policies will be reflected in all aspects of the health system. More useful, perhaps, is a description of the normative information about coverage – such as who is covered, what is covered, how much is covered – and some consideration of how normative policy decisions are made.

That said, data are generally available on the percentage of the population covered by the public or statutory health system. In fact, as many countries claim to cover the entire population, there is a tendency for countries to declare that they have achieved UHC on the basis that they provide coverage to 100% of their population. Unfortunately, population coverage data alone are not a particularly useful metric because they say

Table 6.7 *Measures for purchasing and provider payment in the Health Financing Progress Matrix*

Indicative measure from HFPM	Definition and descriptive information
To what extent is the payment of providers driven by information on the health needs of the population they serve?	<p>This question is concerned with the way in which funds flow from purchasers to service providers.</p> <p>Information you might look at:</p> <ul style="list-style-type: none"> · the type of allocation mechanisms used.
Are provider payments harmonized within and across purchasers to ensure coherent incentives for providers?	<p>When multiple payment methods exist across different purchasing agencies (for instance, coverage schemes or health programmes), or within one purchasing agency, these need to be coordinated and harmonized to ensure a coherent set of incentives for providers.</p> <p>Information you might look at:</p> <ul style="list-style-type: none"> · the payment methods used in different schemes, and then at payment levels/rates; and · cost-sharing mechanisms (user fees and co-payments) and whether these are harmonized across different schemes and programmes.
Do purchasing arrangements promote quality of care?	<p>This question considers whether, or not, purchasers are taking active measures to influence provider behaviour and performance specifically to improve quality of care.</p> <p>The information needed centres on purchasing instruments that specifically promote quality of care, for example:</p> <ul style="list-style-type: none"> · performance agreements · policies or instruments for selective contracting · better coordination of care through blending or bundling of payment methods, for example, capitated provider networks · specific financial incentives · the existence and use of standardized quality indicators across payers and providers.

Source: WHO (2020).

Note: HFPM, Health Financing Progress Matrix.

nothing about the breadth or depth of coverage. It could be that the entire population is covered for a very narrow benefits package, or that co-payments to use public services are astronomically high. In practice, access might also be limited by supply constraints. The key message here must be that while population coverage is a pre-requisite for a well-functioning health system, it says very little about the performance of coverage policies. For this reason we do not recommend it as an assessment indicator.

At the same time, information on design of benefits and entitlement – what is covered – is often difficult to obtain. Not all countries maintain a so-called “positive list” and if they do, it may only refer to medicines. There are also inevitable variations across countries due to differences in the depth of coverage for the same basket of services. For example, two countries could include the same medicine in their benefits package

but one might cover the full cost while the other covers only a small percentage. This highlights the importance of considering all three dimensions – the percentage of the population covered, the services that are covered, and the percentage of the costs of care which is covered – coverage simultaneously.

While the first two dimensions are fraught with measurement issues, the question of how much of the cost of care is covered is often measured, in one way or another, in HSAs. Crudely, data on OOP expenditures as a share of total spending could be indicative of the depth of coverage (Table 6.8). However, very few countries report on OOP expenditures that are exclusively for public or statutory services – for example, cost-sharing or co-payments – as opposed to direct payments for care outside the benefits basket. This makes it difficult to assess the extent to which high OOP expenses reflect a narrow design of benefits and entitlement; increased demand for private services, perhaps due to perceptions of poor public sector quality; or high user charges for public services. When we talk about coverage policy, it is the latter that is of most of interest.

Another important set of indicators are those that measure financial protection. Financial protection captures the degree to which the health system protects people, or households, from the financial burden of paying for health care at the point of use. It is one of the primary metrics used to measure progress towards UHC in the Sustainable Development Goals (SDG indicator 3.8.2). Financial protection is heavily influenced by all sub-functions of the financing function. Where revenue raising is inadequate, resourcing is also likely to be inadequate and, as a result, many goods and services cannot be fully covered without high cost sharing, if they are covered at all. Poor pooling can lead to resource imbalances that leave some people with comprehensive coverage while others are forced to pay a lot out of pocket. If purchasing is not well designed (for example, low payments to providers or wrong signals) it could create incentives for informal payments or extra billing, which would also put a financial burden on households. Importantly, financial protection could suffer if coverage policies are not designed to ensure that people or services are not left out of the system, or because OOP payments at the point of use are set at high levels. It should also be said that financial protection is not a metric purely related to health financing, as it captures the impact of OOP spending on households who are able to access care. That is, it reflects realized access, which occurs through service delivery. Likewise, if high levels of OOP spending are required for care, this may alter people's ability to access services, and result in unmet need.

Financial protection is often measured using common indicators such as the incidence of catastrophic health spending – which is defined as the percentage of the population, or households, spending more than a specific share of their available resources (either their entire budget or some measure of their capacity to pay) for health care; or the incidence of impoverishment as a result of health spending – defined as the percentage of the population, or households, left below the poverty line as a result of OOP spending on health care costs. But these indicators can vary, in a number of ways, in terms of how they are constructed (Cylus, Thomson & Evetovits, 2018). This can result in major measurement differences and suggest very different policy implications. For this reason, it is important to know precisely what a particular metric is measuring.

Measurement of financial protection is distinct from indicators measuring OOP spending at a national level because it captures the distribution of that spending across the entire population. Measuring OOP spending alone could be misleading. For instance, if a country has a very high reliance on OOP spending, but spending is made exclusively by wealthy people who experience no hardship as a result, it cannot be compared to a country with the same reliance on OOP spending where that burden is carried only by very poor people who lack adequate coverage. Hence, financial protection metrics add an important level of granularity and distributional impact of OOP expenses.

Other, more qualitative information on how coverage policy decisions are made can also be useful for understanding coverage policy performance. For example, HiTs include information on the legal basis and criteria for entitlement, as well as detailed information on the processes used to decide which goods and services are included in benefits packages. This degree of information is not available extensively in other HSA tools.

A number of indicative measures to assess coverage policies are collected in the HFPM (Table 6.8). The questions included cover elements such as criteria for entitlements and processes for designing benefit packages, and also capture elements of accountability, transparency, equity and utilization relative to need.

Other approaches, or indicators used to assess coverage policies, will naturally overlap with the other sub-functions. For example, one approach could be to consider whether the benefits covered vary across pools, and the basis used to determine what is included in a benefits package – for instance, is there a body that decides whether services or

goods are reimbursed and if so, are its decisions binding? It could also be useful to look more descriptively at the use of co-payments for services covered in the benefits package, and how those co-payments are designed. For example, are there exemptions for vulnerable groups? Or are there flat payments or a defined percentage for co-payments?

Table 6.8 *Indicative measures for coverage*

Indicative measure	Definition
Out of pocket spending as a share of current health spending OR as a share of household consumption	
Catastrophic health spending incidence	The percentage of the population, or households, who spend in excess of some share of their ability or capacity to pay on health care OOP expenses
Impoverishing health spending incidence	The percentage of the population, or households, whose remaining resources after OOP spending leave them below a poverty line
Co-payment design	Descriptive information on how co-payments and related exemptions are designed in public/statutory health system(s)
Indicative measure from HFPM	Definition and descriptive information
Is there a set of explicitly defined benefits for the entire population?	<p>Being explicit and clear about entitlements, and any related conditions of access, reduces uncertainty for the population. As uncertainty generally constitutes a barrier to accessing services, this is a positive move.</p> <p>Information you might look for includes explicit statements of benefits and entitlements, for example:</p> <ul style="list-style-type: none"> · A defined list of guaranteed services (either positive or negative lists), or levels of care for example, PHC · a specific set of universal entitlements, that is, for all citizens · services with co-payments and exemptions for certain priority groups
To what extent are population entitlements and conditions of access defined explicitly and in easy-to-understand terms?	<p>This question focuses on the population's awareness and understanding of its entitlements. For example, what it can access free, or with a limited co-payment, at the point of service.</p> <p>Information you might look at:</p> <ul style="list-style-type: none"> · explicit statements that are concise and simple, and are widely communicated to the population · any available survey that might capture aspects of this question

Source: WHO (2020).

Note: HFPM, Health Financing Progress Matrix; OOP, out-of-pocket; PHC, primary health care.

6.4.4.2 Assessing the performance of PFM

Assessing public financial management in its entirety goes well beyond the scope of health financing performance. Nevertheless, for a PFM system to perform well, it

should be transparent, efficient and, in general, facilitate the smooth operation of the health system by ensuring that resources get to the right places in a timely, accountable fashion.

In the reviewed tools PFM has not been assessed in detail; however, some elements of budget flows in pooling are addressed generically in the HiTs, USAID and Situation Analysis. The quintessential resource is the Public Expenditure and Financial Accountability tool (PEFA, 2001). This looks at the performance of a PFM system by grading 94 characteristics, across 31 key components of public financial management, which fall under seven broad areas. Information on how well a PFM system performs can, in part, explain performance across the other three sub-functions. For example, the ability to conduct multi-year planning and forecasting is an important component of PFM and, over time, will influence the predictability of revenues.

6.5 Conclusions

Financing is pivotal to the performance of a health system and to achieving UHC. Well-executed revenue generation, pooling and purchasing are crucial to ensure that resources are available to those who need health care, and to ensure that the health system obtains value for money. Governance of financing – normative decisions related to coverage policy, as well as structural factors related to public financial management, have a significant impact on the extent to which financing is able to deliver health system objectives.

So, how can health system actors determine whether or not their health financing function is operating effectively, and how can they identify specific pitfalls? The most frequently available quantitative indicators to assess financing sub-functions often come from National Health Accounts. These are helpful because health spending data are well harmonized globally, which makes the data broadly comparable. However, expenditure information alone provides very limited information about the performance of sub-functions of the health system, or its performance overall. In part, this is because health spending is not monotonic: that is, more or less spending is not necessarily better or worse. This reinforces the notion that no indicators can be interpreted in isolation. To know, for example, whether spending levels are too low it would be necessary to look for systematic evidence on access barriers, poor quality, or poor financial protection. Similarly, to understand whether they might be too high, one would look for evidence of inefficiencies and waste.

That said, there are some clear absolutes, or norms, within health financing that can be assessed, so long as data are available. Many are mentioned throughout this chapter. For example, stable and predictable revenues are a prerequisite to a well-functioning health system as they enable planning and continuity of service delivery. This can be evaluated by looking at spending levels over time, or by understanding budget setting processes. Equity of financing can be understood by reviewing the mix of revenue sources, with the aim of limiting reliance on financing sources that place excessive financial burdens on disadvantaged populations. Evidence of efficient purchasing can be gleaned from low prices for goods and/or services, so long as access and good outcomes are still achieved. Coverage policies can, to some extent, be evaluated through financial protection metrics, so long as we are also mindful of the role of other functions in determining access and exposure to OOP expenses.

Although financing is thought of as a more quantitative function, descriptive information is also increasingly seen as being of great value. There are two reasons for this: the timeliness of descriptive information compared with the time-lags often associated with other quantitative data, and also for the context it adds to enable us to tell a coherent story. To this end, tools such as the WHO financing matrix and the HiTs are of major importance for assessing performance and enabling remedial policy interventions when needed.

References

- Bokhari F, Gai Y, Gottret P (2007). Government health expenditures and health outcomes. *Health Economics*, 16(3):257–273.
- Cashin C et al. (2014). *Paying for Performance in Health Care. Implications for health system performance and accountability*. 1st edn. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Cylus J, et al. (2019). *Sustainable Health Financing with an ageing population*, Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Cylus J, Thomson S, Evetovits T. (2018). Catastrophic health spending in Europe: equity and policy implications of different calculation methods. *Bulletin of the World Health Organization*, 96(9):599–609.
- Delattre E, Dormont B. (2003). Fixed fees and physician-induced demand: A panel data study on French physicians. *Health Economics*, 12(9):741–754.
- Elshaug AG, McWilliams M, Landon B. (2013). The value of low-value lists. *JAMA*, 2013;309(8):775–776.

- European Commission (2011). EuroDRG – Diagnosis-Related Groups in Europe towards efficiency and quality. (<https://cordis.europa.eu/project/id/223300/reporting>, accessed 11 August 2021).
- European Observatory (2002). Health Systems and Policies. [Online] (<https://www.euro.who.int/en/about-us/partners/observatory/publications/health-system-reviews-hits>, accessed 10 May 2020).
- European Observatory (2019). Health Systems in Transition: template for authors 2019. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Farahani M, Subramanian S, Canning D. (2010). Effects of state-level public spending on health on the mortality probability in India. *Health Economics*, 19(20):1361–1376.
- Jowett M et al. (2020). *Assessing country health financing systems: the health financing progress matrix*, Geneva, World Health Organisation.
- Klasa K, Greer SL, Ginneken E (2018). Strategic purchasing in practice: comparing ten European countries. *Health Policy*, 122(5):457–472.
- Kutzin J (2001). A descriptive framework for country-level analysis of health care financing arrangements. *Health Policy*, 56(3):171–204.
- Mathauer I, Dale E, Messen B. (2017). *Strategic purchasing for Universal Health Coverage: key policy issues and questions. A summary from expert and practitioners' discussions*. Geneva, World Health Organization.
- Mathauer I, Saksena P, Kutzin J (2019). Pooling arrangements in health financing systems: a proposed classification. *International Journal for Equity in Health*, 18:198.
- PEFA (Public Expenditure and Financial Accountability program) (2001). *PEFA*. [Online]. (Available at: <https://www.pefa.org/>, accessed 15 January 2021).
- Rajan D (2016). Situation analysis of the health sector. In: Schmets G, Rajan D, eds. *Strategizing national health in the 21st century: a handbook*. Geneva, WHO:p. 51.
- Serra-Moreno R, Smith P (2012). Does progress towards universal health coverage improve population health? *Lancet*, 380(9845):917–923.
- Thomson S, Cylus J, Evetovits T (2019). *Can people afford to pay for health care? New evidence on financial protection in Europe*. 1st edn. C Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Thomson S, Foubister T, Mossialos E (2010). Can user charges make health care more efficient? *BMJ*, 341(341:c3759):18.
- Thomson S, Vörk A, Habischt T. (2010). *Responding to the challenge of financial sustainability in Estonia's health system*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.

- USAID (2017). *HSA Manual*. [Online] (<https://hsaamannual.org/>, accessed 10 May 2020).
- WHO (2000). *The world health report 2000 – Health systems: improving performance*. Geneva, World Health Organization.
- WHO (2010). *World Health Report 2010. Health systems financing: the path to universal health coverage*, Geneva: WHO.
- WHO (2015). *Health system expenditure review*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- WHO (2017). *Aligning public financial management and health financing: a process guide for identifying issues and fostering dialogue*. Geneva, World Health Organization.
- WHO (2019). *Financing for Universal Health Coverage: Dos and Don'ts. HEALTH FINANCING GUIDANCE NOTE NO 9. Conference Copy*. Geneva, World Health Organization.
- WHO (2020). *The health financing progress matrix: country assessment guide*. Geneva, World Health Organization.
- Winai S (2010). *Universal Coverage experience of Thailand*. Online presentation given at PMAC, 26 January 2010.

Service delivery

Ellen Nolte, Marina Karanikolos, Bernd Rechel

7.1 Introduction

Delivering services is a core function of health systems and this is influenced by and influences governance, financing and resource generation. Service delivery directly impacts intermediate health system objectives and, ultimately, the achievement of overarching health system goals. This chapter builds on the service delivery definition proposed by Murray & Frenk (2000), that is, “the combination of inputs into a production process that takes place in a particular organizational setting and that leads to the delivery of a series of interventions”. Within this, we define three sub-functions of service delivery: public health, primary care and specialist care.

Assessment of service delivery is not straightforward. This is in part because the performance of service delivery depends on, and is influenced by, the performance of other health system functions.

Assessments can also take different perspectives, which might include:

- service areas, such as primary or secondary care, or a programme, such as HIV or tuberculosis
- objectives, such as quality, safety, effectiveness, efficiency, accessibility or equity
- the nature of the organization providing services, for example, the level or mode of care.

This chapter begins by defining the service delivery function within the HSPA Framework for UHC and describing the service delivery sub-functions. It then sets out an approach to assess the performance of these functions and sub-functions that includes proposed indicative measures for each. The chapter concludes with a summary of the key proposals and discussion of the wider opportunities for and challenges of assessing the performance of service delivery as a key function of health systems.

7.2 Understanding the service delivery function

7.2.1 Where service delivery fits in the framework

Fig. 7.1 illustrates the HSPA Framework for UHC and position of the service delivery function within this framework. As this shows, service delivery is a product of the governance, financing and resource generation functions. Within service delivery we distinguish the three sub-functions of public health, primary care and specialist care, as well as the function-related governance mechanisms guiding the planning and operation of services. The framework illustrates how service delivery impacts directly on the intermediate objectives of effectiveness, safety and user experience, along with efficiency and equity of service delivery, and access. Together, these drive the achievement of final health system goals and make service delivery a means of assessing the core areas of health system performance.

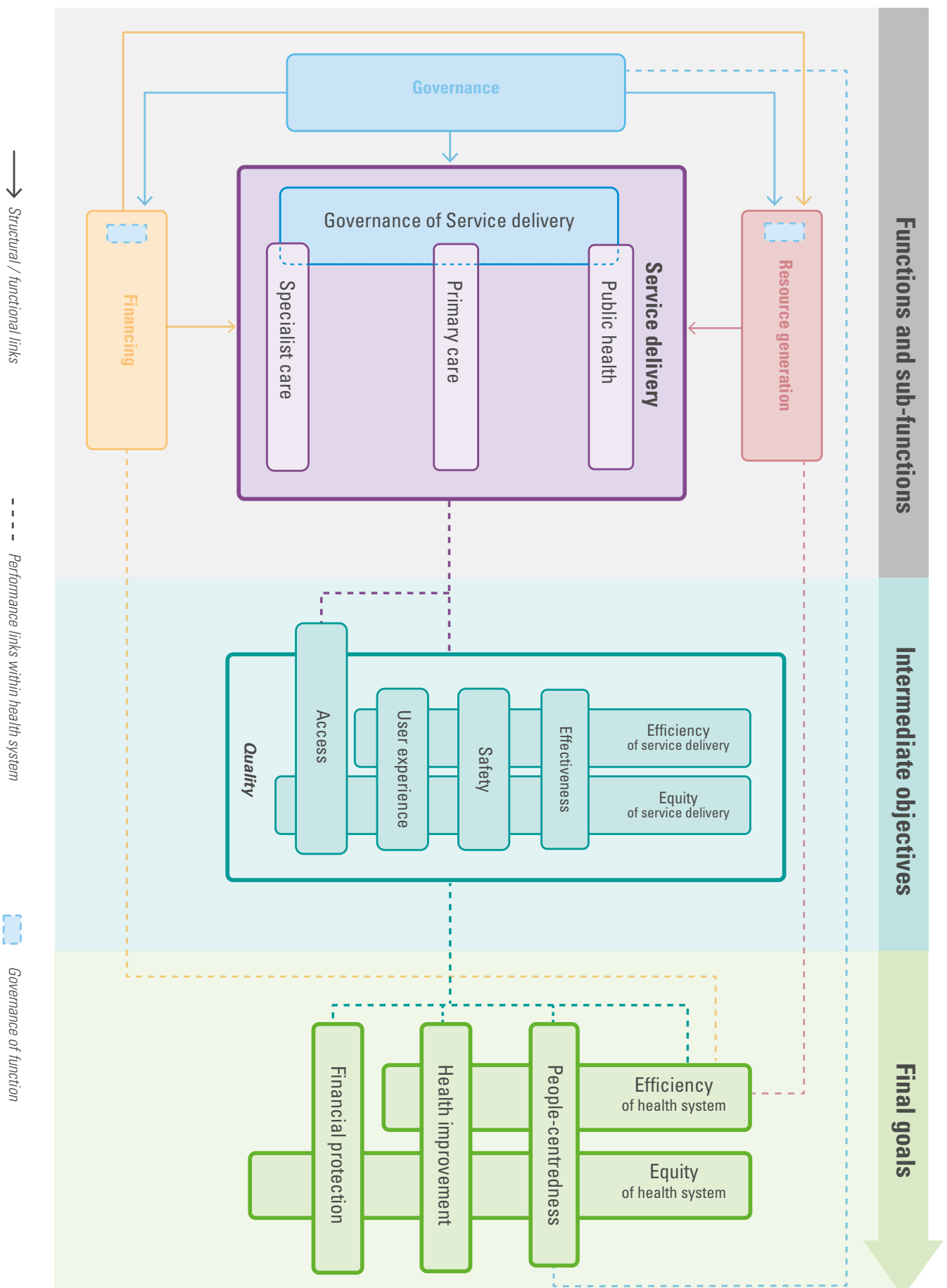
7.2.2 Defining service delivery

As noted in the introduction, Murray & Frenk (2000) identified the provision of health services as one of the four core functions of health systems, defining it as “the combination of inputs into a production process that takes place in a particular organizational setting and that leads to the delivery of a series of interventions”. This definition builds on earlier work by Londoño & Frenk (1997) who spoke more specifically about “outputs (health services) which generate an outcome (changes in the health status of the consumer)”, rather than interventions.

So, while service delivery forms a core health system function, it is also an outcome of the governance, financing and resource generation functions, with inputs including human resources, physical capital and consumables (Fig. 7.2) (Adams et al., 2003; WHO, 2010). This means that the performance of the service delivery function will reflect the performance of the governance, financing and resource generation functions.

In its 2007 framework for action on health system strengthening, WHO expanded the conceptualization of service delivery to include consideration of the service production process and the ways in which the organization and management of inputs and services “ensure access, quality, safety and continuity of care across health conditions, across different locations and over time”. It later argued that increasing inputs would result in better service delivery and access to services, and that “ensuring availability of

Fig. 7.1 Service delivery sub-functions

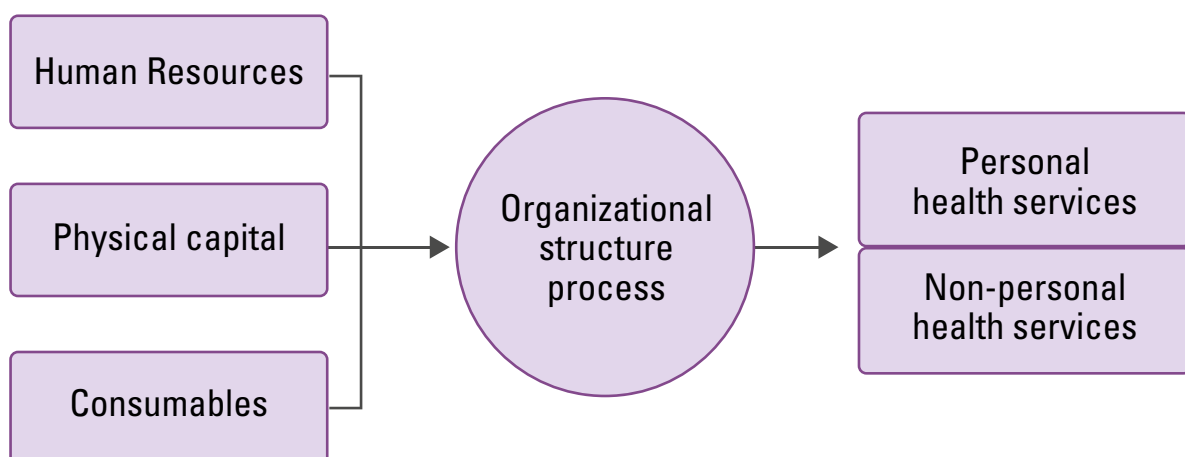


health services that meet a minimum quality standard and securing access to them are key functions of a health system” (WHO, 2010).

Service delivery is a broad concept and difficult to separate into sub-functions without considering a specific country context or service organization. Differentiation is further complicated in that the term “health service” can refer to both the organization that delivers care and the specific product being delivered (Van Olmen et al., 2010). Murray & Frenk (2000) differentiated provision as personal and non-personal health services. Personal health services were seen as those “consumed directly by an individual, whether they are preventive, diagnostic, therapeutic or rehabilitative, and whether they generate externalities or not”, whereas non-personal health services were defined as referring to “actions that are applied either to collectivities (for example, mass health education) or to the non-human components of the environment (for example, basic sanitation)”.

The World Health Report 2000 (WHO, 2000) built on the conceptualization of service delivery as proposed by Murray and Frenk, but it did not differentiate the service delivery function beyond personal and non-personal health service delivery. Instead, the report distinguished different organizational forms, such as hierarchical bureaucracy, long-term contractual arrangements and short-term market-based interactions; public or private ownership; and service delivery configurations that could be dispersed. These were defined as “competitive production by small producing units” (for example, primary care); concentrated (for example, hospital care, central public health laboratories), or hybrid (for example, programmes to control infectious diseases) (WHO, 2000).

Fig. 7.2 *Health service provision (Adams et al)*



Source: Adams et al. (2003).

Clearly, there are different conceptualizations, and the differentiations above also combine different perspectives. For the purpose of a generalized framework for health systems performance assessment, we distinguish public health, primary care and specialist care as three sub-functions of service delivery, which we will describe. However, it may first be helpful to separate out the notions embedded in various conceptualizations, either implicitly or explicitly, which distinguish service delivery according to:

- the target population (for example, individual and collective health services)
- the primary purpose of consumption (for example, preventive, curative, rehabilitative, long-term care)
- the type of provider or delivery platforms (for example, primary health care unit, hospital)
- the level of provision (for example, primary, secondary, tertiary)
- the mode of provision (for example, inpatient, outpatient, day care, home care).

These conceptualizations provide a useful way to think about approaches to assessing service delivery performance, but they also show that there are multiple ways to differentiate the components of services. Appendix 7.1 provides a summary of these approaches to categorizing service delivery and discusses the challenges of each for HSPA.

7.3 Sub-functions

Having highlighted the various ways health service delivery may be classified and differentiated, and recognizing the need to enable performance assessment of areas within service delivery, we propose assessing service delivery in a way that allows for a degree of overlap between the various perspectives described above (target populations, purpose, platforms levels and modes), according to three broad sub-functions:

- public health
- primary care
- specialist care.

There are some challenges associated with this differentiation, but it is commonly used and allows for flexibility to adjust for the organization and structure of health services in any given country.

7.3.1 *Public health*

Public health has been conceptualized using different disciplinary and professional perspectives, with a common thread – seeing it as a collective or societal approach aimed at “improving health, prolonging life and improving the quality of life among whole populations” (WHO, 1998). Public health covers the spectrum of health and well-being, from the eradication of particular diseases (World Health Organization Regional Office for Europe, 2020), to an increasing recognition of the political, commercial, economic, social and environmental determinants of health and social inequalities (Lomazzi, Jemkins & Borisch, 2016).

The practical application of this overarching understanding has remained complex, and globally there is considerable variation in terms of the essential functions assigned to public health (Martin-Moreno et al., 2016). Common elements of existing frameworks include surveillance, governance and financing, health promotion, health protection and legislation, human resources and research (WHO, 2018). However, there is greater variation around activities such as disease prevention, health care, emergency preparedness, social participation and communication within public health. This reflects, to a great extent, differences in perspectives on what constitutes public health – particularly in relation to UHC – and to what degree health care should be considered a public health operation. Similarly, the aims of defining essential public health functions vary and range from capacity-building exercises to strategies to improve the overall performance of health systems.

7.3.2 *Primary care*

Definitions of what constitutes primary care also vary widely, although a common understanding is that primary care represents the first point of contact for unspecified and common health problems. Van Olmen et al. (2010) refer more broadly to “first line health services” – such as health centres, general practitioner practices or clinics – as the primary level of care because they are close to the people they serve, accessible to all, and able to address a wide range of health problems.

However, as indicated above, boundaries between what is referred to as primary care and public health at one end of the spectrum, and primary care and specialist care at the other end, are becoming increasingly blurred. As a result, many services that fulfil a wider public health function are provided in primary care settings (for example,

vaccination, family planning), whereas in some countries primary care includes office-based specialists and fulfils a specialist care sub-function.

7.3.3 Specialist care

Specialist care is frequently distinguished into secondary and tertiary care. Secondary care is usually provided in local hospitals, whereas tertiary care comprises highly specialized care delivered in regional or national hospitals in order to concentrate expertise and complex, high-cost resources (Black & Gruen, 2005).

Again, boundaries between primary care and specialist care are becoming increasingly blurred. This is partly because, in some countries, specialists also work as office-based practitioners outside a hospital setting (Cacace & Nolte, 2011).

Perhaps more importantly, the delivery of health care services is changing. For example, new developments in medical technology, particularly telehealth and mobile technologies, make it possible to provide many services closer to the patient. This allows diagnostic or therapeutic interventions that previously required a hospital environment to be carried out in people's homes or in ambulatory settings. In many countries there is also increasing recognition that the rising burden of chronic disease requires a different model of care, away from a dependence on hospital-based episodic delivery, towards one that offers some specialist care in the community. This is seen as a way to increase accessibility of services, enhance continuity of care and service responsiveness, and, potentially, reduce costs (WHO, 2016a).

7.3.4 Governance of service delivery

Governance is a core area within each health system function, providing the basis and structure for their operation. Given the dependence of service delivery on other health system functions, its governance is, in part, a task of those functions. For example, the overall regulation and organization of health services is a task of the overall governance function of the system; whereas the purchasing of services and aspects of health service coverage is governed by the financing function; and the planning and distribution of services is governed by the resource generation function. However, as Adams et al. (2003) pointed out, there are distinct areas of governance specific to service delivery – decision-making authority and service integration – to which we add quality assurance mechanisms. We will return to these below.

7.4 Assessing the performance of the service delivery function

As noted, a key feature of service delivery is that it is both a health system function and an outcome of the governance, financing and resource generation functions. As a result, service delivery links directly into intermediate objectives. In addition to this, we identify decision-making authority, service integration and quality assurance mechanisms as distinct elements of service delivery governance (Fig. 7.3).

Access and other identified assessment areas – effectiveness, safety, user experience, efficiency and equity of service delivery – are intermediate objectives of health system. Therefore, for consistency with the overarching framework, we refer to these assessment areas as intermediate objectives. They are also common to the assessment of the three service delivery sub-functions.

Regardless of the conceptualization of service delivery function in the HSA tools described in Chapter 2 (and, consequently, the country-specific HSA reports), this is the area that inevitably plays a key role in the HSA initiatives (Box 7.1).

Box 7.1 *Service delivery in the HSA tools*

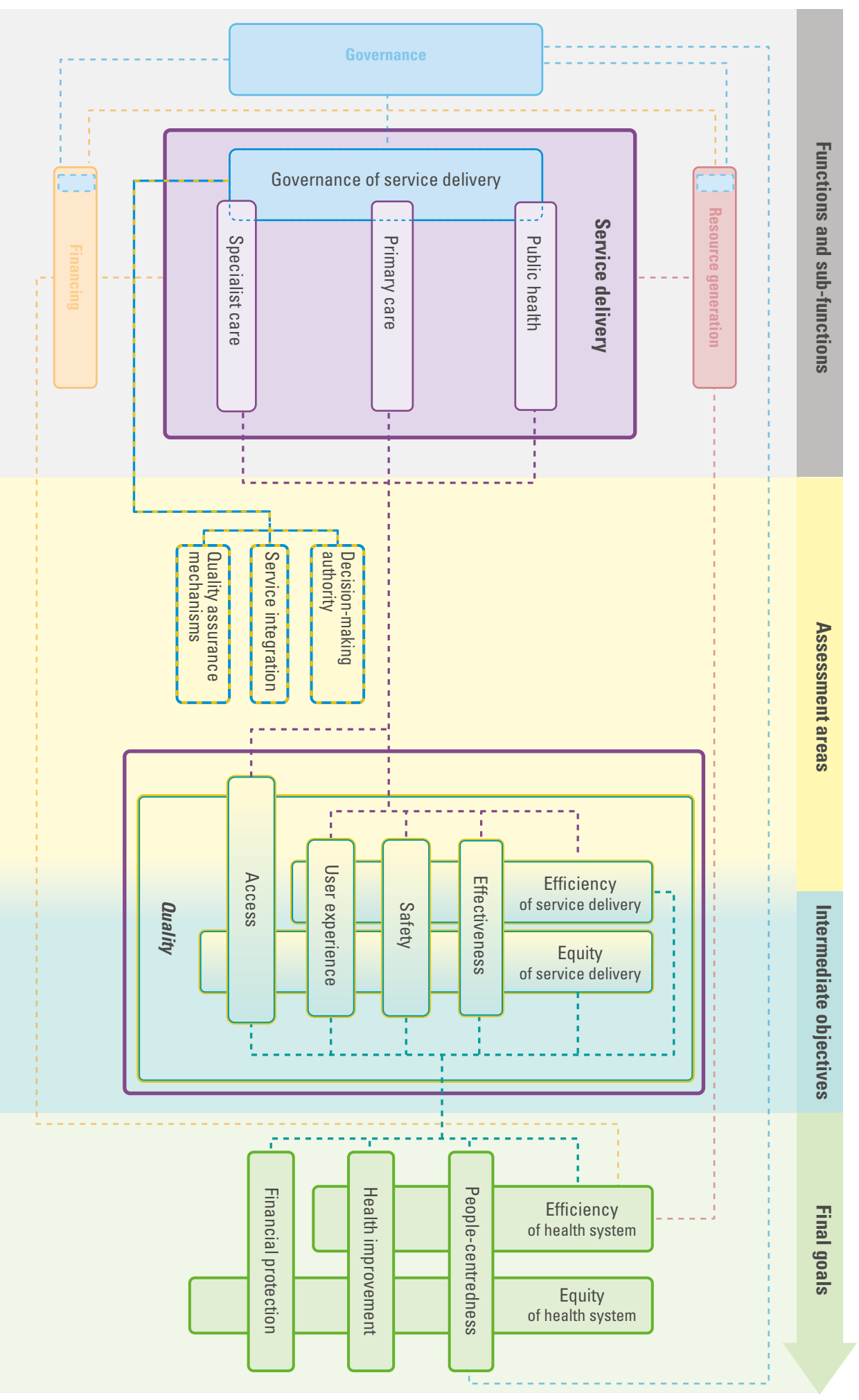
There are variations across the HSA tools and country reports in terms of specificities of delineation between public health, primary care and specialist care, however broadly they are classified in line with the approach suggested in this chapter. For example, public health tends to be seen as a separate area for assessment. The main emphasis there is placed on surveillance, disease prevention and health promotion. The reports from low- and middle-income countries also include environmental health, usually focused around water and sanitation services. In terms of primary care, country HSA reports tend also to identify it with the first point of contact with the health system, and the HSA reports from low- and middle-income countries tend to mostly focus on this area, which could be due to availability of data. For specialist care, the reports usually document it from the programmatic angle, mentioning, for example, specialized centres to combat outbreaks of foodborne disease, specialized rehabilitation centres, neglected tropical disease facilities, etc. In terms of mode of delivery, the reports sometimes explicitly distinguish between secondary inpatient and secondary outpatient care. HSA country reports from lower-income countries tend not to assess specialist care systematically.

Source: Based on a review of HSA tools and selected country HSA reports (see Chapter 2).

7.4.1 *Intermediate health system objectives as areas of assessment of service delivery*

Quality is central to the performance of health service delivery. But, as highlighted in Chapter 2, there are many different ways to assess the quality of health services and systems.

Fig. 7.3 Assessing service delivery



Source: Authors' compilation.

Most frameworks build on the seminal work by Donabedian, who argued that health services should be evaluated according to structure, process and outcome, as “good structure increases the likelihood of good process, and good process increases the likelihood of good outcome” (Donabedian, 1980, 1988). This approach was used widely in the study of health service quality, although a further dimension of outputs was added to capture the immediate results of health services carried out by health workers or institutions (Box 7.2).

Box 7.2 *Dimensions of health services and health systems*

Structure (input)	Attributes of the settings in which care is provided: resources needed for health care (material resources, intellectual resources, human resources)
Process	Use of resources: what is done in giving and receiving care (patient-related, for example, intervention rates, referral rates; organizational, for example, supply with drugs, management of waiting lists, payment of staff)
Output	Productivity or throughput (for example, length of hospital stay, discharge rate, but also: access, effectiveness, equity)
Outcome	Effects of health care on the health status of patients and populations (definite: mortality, morbidity, disability, quality of life; intermediate: blood pressure, functional ability, improved knowledge, etc., but also: patient experience)

Source: Adapted from Nolte, McKee & Wait (2005)

The US Institute of Medicine described quality as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current medical knowledge” (Institute of Medicine, 2001); and it identified six dimensions to evaluate this:

- safety
- effectiveness
- patient-centredness
- timeliness
- efficiency
- equity.

Other dimensions, including access, acceptability and continuity, have been added and there is a degree of overlap between dimensions (for an overview see Nolte et al., 2011).

A review of performance indicators which looked at eight high-income Organisation for Economic Cooperation and Development (OECD) countries found the most

commonly used health system performance domains were effectiveness, access, safety and efficiency, and there was significant overlap of these domains (Braithwaite et al., 2017). We focus on the six most commonly used and widely considered core dimensions to measure the service delivery function of health systems. For the purposes of performance assessment, we use the definitions by Nolte et al. (2011) and the National Academies of Sciences and Medicine (2018):

- **Effectiveness:** Extent to which a service achieves the desired results or outcomes, at the patient, population or organizational level.
- **Safety:** Extent to which health care processes avoid, prevent and ameliorate adverse outcomes or injuries that stem from the processes of health care itself.
- **User experience:** Extent to which the service user perspective and experience of health care is measured and valued as an outcome of service delivery.
- **Access:** Extent to which services are available and accessible in a timely manner that does not undermine financial protection.
- **Equity:** Extent to which the distribution of health care and its benefits among a population is fair; it implies that, in some circumstances, individuals will receive more care than others to reflect differences in their ability to benefit or in their particular needs.
- **Efficiency:** Relationship between a specific product (output) of the health system and the resources (inputs) used to create the product (Palmer & Torgerson, 1999), distinguishing technical and allocative efficiency (see below).

Some dimensions describe the service delivery function specifically, in particular the quality domains of effectiveness, safety and user experience; whereas access, equity and efficiency reflect a broader interaction of all health system functions that ultimately work through service delivery. This approach is closest to the OECD framework for assessing the technical quality of health care, noting that quality in health care means that the care provided is effective, in that it achieves desirable outcomes based on need; safe, because it reduces harm caused in the delivery of health care processes; and person-centred (Kelley & Hurst, 2006).

Before exploring the assessment of sub-functions of service delivery – public health, primary care and specialist care – we briefly discuss the dimensions of access, equity and efficiency as cross-sectional areas related to service delivery that reflect broader aspects of health system performance.

7.4.1.1 Access

Access has been conceptualized in numerous ways and is most frequently defined in relation to the use of services. However, Levesque, Harris & Russell (2013) developed a broader framework that brings together the different dimensions and determinants of access to health services. This distinguishes approachability, acceptability, availability, accommodation, affordability and appropriateness, alongside what they termed population “abilities”. These are defined as the ability to identify, seek, reach, pay for and engage with health services. Clearly, the factors that determine the different dimensions of access to services go beyond the service delivery function. Thus, access is determined, largely, by governance decisions about the organization of services and the population covered. This is driven by financing decisions about what is covered and the degree of financial protection provided; and also by resource generation decisions around investment in human and physical capital.

Indicators of access include a number of direct markers such as:

- unmet need, instances where people need care but are unable to receive it
- financial reasons such as the cost of care
- geographical factors including distance and lack of transport
- service availability, which might be reflected in waiting lists.

Indirect markers include the health consequences of not being able to access timely care – such as amputation rates among people with diabetes or reduced survival due to late diagnosis. Another marker is the level of service utilization, although indicators of overuse and underuse of services should be interpreted with caution (Elshaug et al., 2017). Indicators such as utilization and outcomes, which can be used to measure access on both the demand and supply sides, need to be examined alongside each other to avoid misinterpretation and to ensure that decision-making is adequately informed.

Boundaries are not clear-cut, as can be seen in hospital admissions for chronic conditions such as diabetes or heart failure. As these are potentially avoidable when managed appropriately in primary care, high rates of admissions can be viewed as an indicator of poor access to primary care, or a lack of coordination between primary and specialist care. This could be the result of failings in quality or efficiency, or, indeed, both (Gibson, Segal & McDermott, 2013) (see also Box 7.3).

Box 7.3 *Expanding access to primary care services in Brazil*

In 1994, Brazil launched the Family Health Programme, which introduced multi-professional teams comprising at least one doctor, one nurse, a nursing assistant and at least four community health workers. Teams were assigned a geographic area and given responsibility for registering and monitoring the health status of the population within that area – providing primary care services and referring up to other levels of care as needed. Empirical studies of the changes associated with the roll-out of the programme found that between 1999 and 2007, hospital admissions for chronic diseases that are commonly considered to be avoidable in the context of high-quality primary care – such as cardiovascular disease, stroke and asthma – declined at a statistically significant rate, which was almost twice the rate of the reduction in hospital admissions for all other causes (Macinko et al., 2010). That study also found that high levels of enrolment with the Family Health Programme led to a 13% reduction in “avoidable admissions” compared with those with low enrolment. These findings were confirmed in a more recent assessment of impacts of the programme for the period 1998–2013 (Cavalcante et al., 2018). Both studies suggest that avoidable hospital admissions for chronic disease are a useful way to measure access in the context of expanding primary care services.

7.4.1.2 Equity

Equity is a cross-sectional dimension of both the health system and its service delivery function because it encompasses fairness and equitable availability and distribution of health services, as well as resulting outcomes (see Chapter 3). In terms of service delivery, equity centres on the distributive effects of the quality and effectiveness of services delivered, and on the ability of different population groups to access those services. Equity has multiple strands, which are more, or less, relevant in each specific context. These could be geographical and include variation across countries or regional differences within countries; socioeconomic and span income and employment status; or demographic and vary by age, sex and ethnicity. Box 7.4 illustrates this issue using the example of antenatal care.

Box 7.4 *Equity in antenatal care quality*

Arsenault et al., (2018) examined equity in antenatal care quality based on 91 national household surveys conducted from 2007 to 2016. This found that while many low- and middle-income countries had reached high levels of antenatal care coverage – with an average of just under 90% of women having attended at least one antenatal care visit with a skilled provider – access to quality antenatal care services was much lower. This was particularly true in low-income countries, where just over half of women (54%) reported receiving quality antenatal services, measured as having their blood pressure checked and their urine and blood taken at any point during their pregnancy. The study also found considerable inequalities within countries, with women at the upper end of the wealth distribution being, on average, four times more likely to report good quality care than those at the lower end. Importantly, national levels of antenatal care quality were more strongly correlated with GDP per capita than coverage. This suggests that achieving parity in maternal, newborn and child health goals globally will require “greater focus on the quality of health services and their equitable distribution”.

7.4.1.3 Efficiency

Efficiency is also a cross-sectional dimension of both service delivery and health system performance (Chapter 3), but there are different ways of thinking about efficiency in the context of service delivery.

Technical efficiency covers operational performance (Cylus, Papanicolas & Smith, 2017). Measures to enhance technical efficiency in service delivery include those aimed at reducing the duplication of services; limits on the use of expensive or unnecessary inputs through measures such as reduced prescribing of branded drugs and using nurses rather than physicians to provide services when appropriate; or reducing errors and adverse events at system, organizational and patient levels (Bentley et al., 2008).

Allocative efficiency relates to choices of inputs or outputs, and measures to enhance allocative efficiency include re-balancing services across the health system. This could include moving care into the community, co-ordinating care more effectively, or strengthening preventive care with measures such as incentives at the provider and system levels. Efficiency of service delivery is influenced by governance decisions including:

- uptake of cost-effective technologies and treatments
- wider quality assurance frameworks including national standards and guidelines
- financing decisions around the incentivization and reimbursement of service providers
- resource generation decisions about investment and the appropriate mix of skills, competencies and infrastructure needed to deliver the right care to the right people in the right place.

Additionally, there is an explicit service delivery assessment component relating to how well services use conditions set by the wider governance and financing framework (see Box 7.5).

7.4.2 *Assessing the performance of sub-functions of service delivery*

It is important to remember that the boundaries between delivery sub-functions are often poorly defined because their scope and breadth is determined, to a large extent, by the specific regional and country contexts within which these functions are organized and financed. For this reason, we propose a set of indicative measures aimed at a global

assessment of effectiveness, safety, user experience, access, equity and efficiency, which draw on existing sources when these are available. By global we mean these indicators should be applicable to, and available for, countries at all stages of economic development. The proposed indicators are presented in Tables 7.1 to 7.3, and are organized into structure, process and outcome indicators.

Box 7.5 *Measuring efficiency in service delivery: antibiotic use*

The overuse, or misuse, of antibiotics is a recognized global problem with significant implications for antimicrobial resistance (Brownlee et al., 2017). As such, the use of antibiotics is an indicator of performance across a number of areas. It provides a measure of efficiency in service delivery because unnecessary prescription of antibiotics wastes resources directly, and also indirectly through increasing rates of antimicrobial resistance. However, the boundaries between different assessment areas are not clear-cut and can overlap with other areas of performance. For example, direct measures of overuse include inappropriate prescribing, typically in outpatient care and this can be seen as an indicator of clinical effectiveness, as patients should not receive treatments that are not clinically indicated. Antibiotic prescribing can also relate to safety, as unnecessary prescribing exposes patients to harm in the form of adverse effects and antimicrobial resistance.

7.4.2.1 Assessing public health

What constitutes good performance of public health as a sub-function may vary. This is reflected in the assessment tools for different frameworks, which vary in scope and depth (WHO, 2018). Available tools use country self-assessments, questionnaires and case studies to evaluate the performance of a given public health function. However, there is no overarching framework for the assessment of public health services that includes real-world indicators (Williams & Nolte, 2018). A review of strategies to ensure the quality of public health services in a range of European countries (Rechel et al., 2018) found that existing approaches focused on selected indicators of health protection such as vaccination rates; the notification and incidence rates of a range of infections; and indicators of disease prevention and health improvement, such as the use of tobacco and alcohol (Williams & Nolte, 2018). Existing approaches often include indicators of early diagnosis such as cancer screening, but there can be considerable overlap with the primary care function, particularly if screening is not population-based. Globally, several of the targets and indicators of the health-related Sustainable Development Goals capture the core public health domains of health protection, health promotion and disease prevention. In Table 7.1, we propose a selection of these, or related indicators, along with the overarching indicator of preventable

mortality – which we define as premature death from causes that can be avoided, or reduced, through public health policies, or policies in other sectors that impact public health (Nolte & McKee, 2004).

Table 7.1 *Indicative measures for public health*

Assessment area	Indicative measures	S	P	O	Note	Strengths and weaknesses
Effectiveness	Preventable mortality (includes road traffic death rate; mortality from selected infectious diseases such as tuberculosis, cholera, malaria, HIV/AIDS, influenza)		✓			<ul style="list-style-type: none"> Global measure of effectiveness of public health policies Focus on mortality Aggregate indicator currently routinely available for OECD countries only (OECD.Stat, 2020b); cause-specific death rates routinely available from WHO (2016b)
	Where preventable mortality is not available as an aggregate measure, mortality from traffic injuries, selected infectious diseases etc. could be used instead)		✓		SDG indicator 3.6.1 (Death rate due to road traffic injuries)	Kruk et al. (2018b) provide number of excess deaths preventable by population-level interventions (2016) for 137 low- and middle-income countries
	Child survival (under 5 years)		✓		SDG indicator 3.2.1 (under-5 mortality rate)	<ul style="list-style-type: none"> Routinely available from OECD.Stat (2020b) Focus on mortality
	Prevalence of child malnutrition		✓		SDG indicator 2.2.2	<ul style="list-style-type: none"> Indicator of combined effectiveness of nutrition, sanitation, immunization, and monitoring public health policies Routinely available from WHO (2016b)
	Vaccination coverage for different diseases (measles, polio, DTP3, etc.)		✓		SDG indicator 3.b.1 (percentage of target population covered by all vaccines included in national programme)	<ul style="list-style-type: none"> Routinely available from WHO (2016b)
	Incidence rates of vaccine-preventable disease			✓		<ul style="list-style-type: none"> Demonstrates effectiveness of vaccination programmes Global availability limited to prevalence data on polio, measles and rubella; likely to under-report “true” prevalence (WHO, 2016b)
	Prevalence of tobacco use		✓		SDG indicator 3.a.1	<ul style="list-style-type: none"> Routinely available from WHO (2016b)

Assessment area	Indicative measures	S	P	O	Note	Strengths and weaknesses
Safety	Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services)		✓		SDG indicator 3.9.2	· Routinely available from WHO (2016b)
User experience	None identified					
Access	Prevalence of populations using unsafe or unimproved water sources		✓		SDG indicator 6.1.1	· Available from Institute for Health Metrics and Evaluation (2019) · World Development Indicators (reverse: proportion of people with access to safely managed drinking water services; proportion of people with access to safely managed sanitation services) (The World Bank, 2020)
Equity	Above indicators of effectiveness at sub-national level/by population subgroup (for example, urban–rural, socioeconomic status)		✓		n/a	· Not routinely available
Efficiency	None identified					

Source: Authors' compilation.

Note: DTP3, diphtheria, tetanus, pertussis; O, outcome; OECD, Organisation of Economic Co-operation and Development; P, process; S, structure; SDG, Sustainable Development Goals.

7.4.2.2 Assessing primary care

Primary care is central to the achievement of sustainable development (Pettigrew et al., 2015) and, in particular, UHC. The 2018 Astana Declaration reaffirmed the values and principles of the Declaration of Alma Ata seeing primary health care as the foundation of a sustainable health system (Global Conference on Primary Health Care, 2018). Against this background, the development of measures to assess the performance of primary health care systems globally has become increasingly important. Key initiatives include the Primary Health Care Performance Initiative (PHCPI), launched in 2015, which focuses on primary care improvements in low- and middle-income countries (PHCPI, 2018); and the European Commission prioritizing the assessment of the performance of primary care systems (European Commission, 2018). In line with the Astana Declaration, the WHO and UNICEF continue to assess and measure primary health care (WHO and UNICEF, 2018).

Notwithstanding the value and importance of these initiatives, they look at primary care systems in isolation, not as part of the wider health system. For example, the PHCPI framework describes governance, financing and resource generation functions, which focus on primary care, but are difficult to disentangle from aspects of the wider system level, such as financial coverage (PHCPI, 2018). Similarly, the proposed framework for assessing primary care within the European context considers 10 domains (Kringos et al., 2019) and includes functions or sub-functions, such as financing and purchasing and resource generation, in the form of infrastructure and human resources. This approach strengthens primary care generally and is valuable for assessments that focus on the performance of the primary care function in order to guide primary care reforms and investments in low- and middle-income countries (Veillard et al., 2017). However, performance assessments that focus on health systems as a whole need an overall assessment framework that incorporates a range of relevant measures. Drawing on existing primary care performance assessment frameworks, Table 7.2 proposes a selection of indicators that focus specifically on the primary care sub-function.

7.4.2.3 Assessing specialist care

Compared with public health and primary care, the performance of specialist – or more specifically, secondary and tertiary care – services has been measured more closely (Cacace et al., 2011; Rechel et al., 2016). Much of this has taken place in high-income countries, in the form of performance data of selected hospital services that are publicly reported in an effort to promote high quality, efficiently delivered specialist care. The OECD Health Care Quality and Outcomes programme – previously known as the Health Care Quality Indicators (HCQI) Project – has been developing internationally comparable indicators to assess what it refers to as acute care. In 2019, these indicators, along with selected indicators for primary care, mental health care and cancer care, involved almost 40 countries, and included non-OECD members including Singapore, Costa Rica and Malta (OECD, 2020). Many of these indicators rely on fairly advanced hospital-based data collection systems, which may not always be available in the majority of low- and middle-income countries.

Here, existing data on the quality of care are often generated within vertical programmes and focus only on specific areas of the health system. These are frequently maternal and child health, or HIV and tuberculosis, with an emphasis on inputs to health services (Kruk et al., 2018a). Table 7.3 proposes a selection of performance indicators for specialist care.

Table 7.2 *Indicative measures for primary care*

Assessment area	Indicative measures	S	P	O	Note	Strengths and weaknesses
Effectiveness	Amenable mortality (deaths that should have been prevented by timely and good quality care)			✓		<ul style="list-style-type: none"> Global measure of effectiveness of health care quality Available for 1990–2016 from Institute for Health Metrics and Evaluation (2020) Focus on mortality. Covers health care quality as a whole (does not distinguish primary and specialist care)
	Adherence to clinical guidelines for five clinical cases: <ul style="list-style-type: none"> acute diarrhoea pneumonia diabetes mellitus pulmonary tuberculosis malaria with anaemia 		✓		PHCPI core indicator	Available from World Bank Service Delivery Indicators for select number of countries only (Service Delivery Indicators, 2017).
Antenatal care	Quality antenatal care (percentage of women who reported having their blood pressure checked and giving a urine and blood sample at any point during pregnancy among those who sought care from skilled providers)			✓		<ul style="list-style-type: none"> Provides a comprehensive measure of quality antenatal care that goes beyond coverage. Available from Demographic and Health Surveys (DHS) and UNICEF Multiple Indicator Cluster Surveys (MICS) 2007–2016
Infectious disease	People living with HIV receiving ART			✓		Routinely available from WHO (2016b)
Chronic disease (for example, diabetes)	Proportion of people with diabetes who are undiagnosed (20–79 years)			✓		Global estimates available from International Diabetes Federation (2020)
	Proportion of adult population on diabetes medication whose blood glucose is controlled			✓	PHCPI core indicator	Available from WHO STEPS country reports for LMIC (WHO, 2020b).
	Hospital admission rate for people aged 15+ with: <ul style="list-style-type: none"> hypertension asthma COPD diabetes complications Also efficiency			✓		Routinely available for OECD countries only (OECD.Stat, 2020a)
	Diabetes-related lower extremity amputation rate			✓		Routinely available for OECD countries only (OECD.Stat, 2020a).

Assessment area	Indicative measures	S	P	O	Note	Strengths and weaknesses
Mental health	Suicide mortality rate				SDG indicator 3.4.2	Routinely available from WHO, 2016b
Safety	Minimum equipment availability (percentage of the number of pieces of essential equipment needed to provide effective and safe essential health services that are available and functioning)	✓			PHCPI core indicator	Available from Service Delivery Indicators (2017) and WHO Service Availability and Readiness Assessment (SARA) for selected countries (WHO, 2020a)
	Patient reported medical, medication, and lab test error (percentage reporting)		✓			Available for selected OECD countries only
User experience	The user's regular physician explains care in a way that that is easy to understand (HIC) Rated as good or better a measure of how the provider listened at last outpatient visit		✓			Available for selected countries only (Commonwealth Fund, 2020) for HIC; HQSS for 12 LMIC (Kruk et al., 2018a)
Access	Health centre/health post/ GP practice density per 100 000 population	✓			PHCPI core indicator	Estimates available from WHO (2016b)
	Percentage of persons aged 16+ reporting unmet needs for medical examination or treatment (EU+EEA) Percentage of women reporting barriers in access to care due to distance or percentage of women who report barriers in care access due to cost of treatment		✓		PHCPI core indicator	Estimates available from Eurostat (2019) (EU+EEA) and from Demographic and Health Survey (LMIC)
Equity	Above indicators of effectiveness at sub-national level/by population subgroup (for example, urban–rural, socioeconomic status)					Not routinely available
Efficiency	Hospital admission rate for people aged 15+ for: · hypertension · asthma · COPD · diabetes complications		✓			Routinely available for OECD countries only (OECD.Stat, 2020a).

Source: Authors' compilation.

Note: ART, antiretroviral treatment; COPD, chronic obstructive pulmonary disease; EU, European Union; EEA, European Economic Area; HIC, high-income countries; HQSS, Lancet Global Health Commission on High Quality Health Systems in the SDG Era; LMIC, low- and middle-income countries; O, outcome; OECD, Organisation of Economic Co-operation and Development; P, process; PHCPI, Primary Health Care Performance Initiative.

Table 7.3 *Indicative measures for specialist care*

Assessment area	Indicative measures	S	P	O	Note	Strengths and weaknesses
Effectiveness	In-hospital mortality rate within 30 days of admission for acute myocardial infarction or stroke			✓		Routinely available for OECD countries only (OECD.Stat, 2020a)
	Perioperative mortality rate			✓		Available for 18 high- and middle-income countries from (The Lancet Commission on Global Surgery, 2015)
Safety	Proportion of the population without access to safe, affordable surgery and anaesthesia	✓				Available from Alkire et al. (2015)
User experience	Estimated percentage of seriously injured patients transported by ambulance		✓			Estimates available from WHO (2016b)
Access	Proportion of the population without access to surgery	✓				Available from Alkire et al. (2015)
	Access to radiotherapy services	✓				Available from Yap et al. (2016)
Equity	Above indicators of effectiveness at sub-national level/by population subgroup (for example, urban–rural, socioeconomic status)					Not routinely available
Efficiency	Hospital admission rate for people aged 15+ for: · hypertension · asthma · COPD · diabetes complications		✓			Routinely available for OECD countries only OECD.Stat (2020a)

Source: Authors' compilation.

Note: COPD, chronic obstructive pulmonary disease; O, outcome; OECD, Organisation of Economic Co-operation and Development; P, process; S, structure.

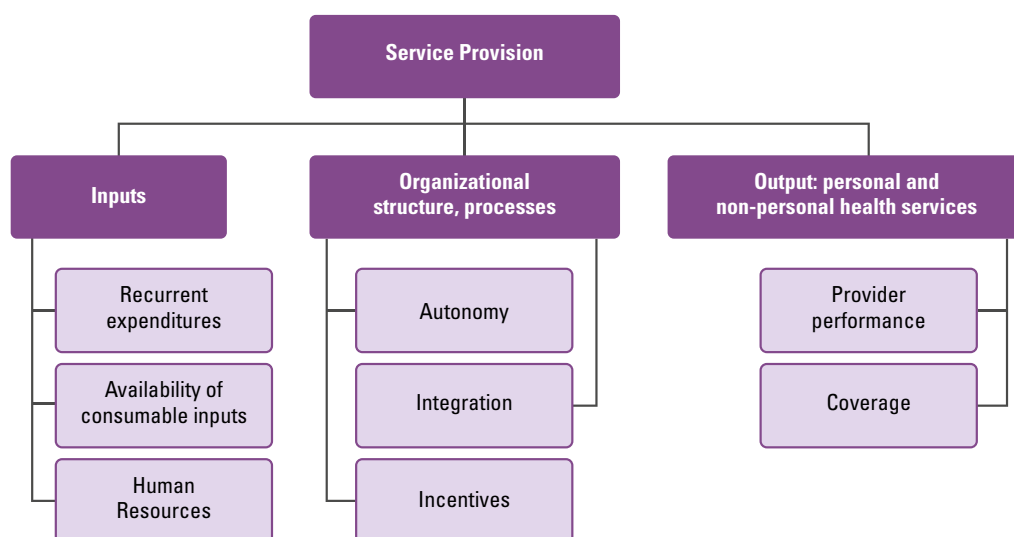
7.4.3 Assessing the governance of service delivery: decision-making authority, service integration and quality assurance mechanisms

Building on the conceptualization by Murray & Frenk (2000), Adams et al. (2003) suggested assessing the performance of the service delivery function by examining three key themes (Fig. 7.4):

- health system inputs, that is, financial, physical and human resources
- organizational structure and processes, which they defined as autonomy, integration and incentives
- outputs, that is the quantity and quality of health services as they relate to the health needs of the population.

The areas of health system inputs as conceptualized by Adams et al., are covered in the governance, financing and resource generation function chapters of this volume. Here, we focus on what Adams et al., described as organizational structure and processes, in particular autonomy and integration. We extend the concept of autonomy to consider decision-making authority more widely, and include quality assurance as a separate dimension of health service governance.

Fig. 7.4 *Service provision assessment framework (Adams et al)*



Source: Adams et al. (2003).

7.4.3.1 Decision-making authority

In conceptualizing the organizational structure of health services, Adams et al. (2003) highlight “the degree to which decision-making is delegated to semi-autonomous agencies such as hospitals or provider networks”, thus focusing on facilities providing specialist health services. Existing research has centred on the hospital sector and provider autonomy and, from the 1990s, this has occurred within the context of efforts to enhance hospital performance and a belief that the financial and administrative autonomy of public hospitals is key to improving health outcomes (Saltman et al., 2011; Chabrol, Albert &

Ridde, 2019). Policies designed to achieve this autonomy have ranged from establishing quasi-independent organizations, which have some autonomy about decision-making but retain public ownership and government accountability, to fully independent organizations where direct lines of accountability to government have been replaced by other forms of public sector oversight (Ravaghi et al., 2018; Rechel, Duran & Saltman, 2018).

However, there is no clear evidence that increasing hospital autonomy has improved their performance, and, by implication, health system performance. In fact, the opposite may be true, as Ravaghi et al. (2018) have shown in a recent review of hospital autonomy reforms in low-resource settings. They found that these policies have not led to the desired outcomes in terms of improving quality, efficiency and accountability; and in some cases such reforms have led to increased hospital costs and out-of-pocket payments. There are a number of reasons for this including incomplete implementation of related policies with, for example, the central level not fully committing to moving responsibilities to the local institutional level (De Geyndt, 2017); or lack of scrutiny by the public sector and hospitals using public interest to increase their income by concentrating on more profitable services (Mills, 2014). Hence, any assessment of institutional autonomy needs to take account of wider governance arrangements for hospitals, such as hospital mandates on service quality; the integration of hospital and outpatient health care; and appropriate mechanisms to strengthen clinical governance (Bloom & Nolte, 2019). In addition, broader systems governance needs to be considered more generally, especially overall accountability mechanisms in place.

Discussions around autonomy have focused on hospitals as individual organizations and their performance, rather than the relationship of individual organizational performance to wider system performance. There is little systematic work considering autonomy with regard to public health and primary care institutions, or formal or informal provider networks. Here, the most relevant level of assessment is that of regional-tier administrations, such as local government or local health authorities, that oversee the organization and delivery of these services, and the degree of autonomy or decision-making authority they are granted.

7.4.3.2 Service integration

Integration as conceptualized by Adams et al. (2003), refers to “the extent to which different inputs, organization, management and service functions are brought together”.

More broadly, interest in service integration reflects increasing concern about the continued focus of health systems on acute, episodic illness and dependence on hospital-based service delivery (Nolte, 2017). Apart from the high cost of these services, the changing disease burden and rising number of people with multiple chronic health problems, raises questions about the suitability and efficiency of this approach (Nguyen et al., 2019). Health services have developed in ways that have tended to fragment delivery. Typically, people receive care from many different providers, often in different settings or institutions and with little coordination between them. Failure to improve the coordination of services along the care continuum may result in adverse events, such as preventable hospitalizations and medication errors (Vogeli et al., 2007; Hajat & Stein, 2018).

It is against this background that health systems globally are exploring new approaches to service delivery that better link the different professions, providers and institutions along the care pathway in order to provide better support for people with long-standing health and care needs (Nolte & McKee, 2008a; Nolte, Knai & Saltman, 2014; WHO, 2015a). Integration efforts often occur alongside wider moves to strengthen primary care as a hub to coordinate care (WHO, 2008; Global Conference on Primary Health Care, 2018). This may include introducing and strengthening referral pathways between different providers and levels of care, or taking specialist services into the community to increase the effectiveness, efficiency and sustainability of service delivery – and so improve health system responsiveness generally (Winpenny et al., 2016).

Any effort to integrate services will have to be embedded in the wider governance of health systems. This should include the development of an appropriate regulatory framework and performance and monitoring systems, and place equal importance on the financing and resource generation functions to guarantee the financial, physical and human resources required to create more integrated service delivery systems (Nolte & McKee, 2008b). Furthermore, as health systems globally are at different stages of integrating services, approaches to their assessment will differ. So, too, will the range of potential indicators to monitor and understand the performance of integrated care available to decision-makers and practitioners (European Commission, 2017). Published reviews point to a wide range of potential indicators – particularly process and outcome – to assess service integration across different domains (WHO, 2015b; European Commission, 2017; Suter et al., 2017; Kelly et al., 2020). However, many of these indicators, particularly outcome measures, assess the performance of service delivery and systems more widely, so are not specific to integrated care. Examples include

outcome measures such as mortality or self-reported health, or process measures such as length of hospital stay (European Commission, 2017; Suter et al., 2017). There is a need for indicators that specifically assess the performance of integrated service delivery, in particular indicators of structure. More widely, a common set of measures is needed to enable the comparative assessment of integration across systems and over time.

7.4.3.3 Quality assurance mechanisms

The quality of service delivery is largely determined by the overarching governance and regulatory framework at system level, which should define fundamental standards of care that service users and the wider population will receive. Quality assurance mechanisms include regulations and processes embedded in health system governance that define quality standards for health service provision and we therefore include quality assurance mechanisms as a distinct dimension of the governance of health service delivery.

Quality assurance mechanisms at system level include mandatory mechanisms, such as professional licences (including licence revocation or suspension), medical malpractice legislation, mandatory continuous improvement including quality reporting, mandated incident reporting, external audit and inspection. In addition, there are a range of market-based mechanisms, including incentive payments, governance by contracting, and provider benchmarking and performance league tables (Schweppenstedde et al., 2014) (see also Chapter 5 on resource generation). However, there is considerable overlap with existing mechanisms at an organizational level, particularly voluntary mechanisms such as voluntary facility accreditation and quality improvement initiatives, as well as clinical protocols and organization-level quality and safety monitoring where there is no nationally or regionally mandated system in place.

Some organization-level indicators are included in the indicative measures for performance assessment of the health service delivery functions (shown in Tables 7.1 to 7.3). These tend to focus on inputs, such as the availability of appropriate staff and equipment in low-income settings, which can be found in existing resources, including the WHO Service Availability and Readiness Assessment tool (WHO, 2020a). Indicators that more comprehensively capture quality assurance mechanisms at operational level are needed. Such indicators should show the degree to which facilities and providers engage in the formulation and implementation of care standards locally and identify mechanisms for continued monitoring and reporting. This would enhance effectiveness, protect patient safety and ensure accountability.

7.4.3.4 Indicative measure for assessing governance of service delivery

As noted above, there is often a lack of clarity on specific indicators that reflect performance of governance of service delivery. Table 7.4 lists some indicative measures proposed by WHO (2021).

Table 7.4 *Indicative measures for governance of service delivery*

Assessment area	Indicative measures	Notes
Decision-making authority	What degree of autonomy does the service delivery entity (facility, district, provider network, region) have to take operational, tactical and strategic decisions?	Operational decisions concern day-to-day decisions such as scheduling of health workers, distribution of supplies, scheduling surgeries, etc. These are generally simple, routine decisions. Tactical decisions concern the ability to negotiate contracts, set targets, etc. They are more complex than operational decisions and require a medium-term vision of how to achieve the goals as set out in a policy or strategy. Strategic decisions concern long-term planning, making trade-offs between different long-term priorities, forming alliances, adapting to external changes that affect planning and implementation (for example, competition with other provider networks/hospitals, changes in legislation, demographic trends, environmental concerns)
Service integration	Existence of national-level strategy/ plan/ policy to promote integrated service delivery	Supporting questions: Does strategy set out clearly defined goals, identified measures and responsible bodies to ensure implementation? Are there other mechanisms to facilitate integrated service delivery in place such as identified referral pathways; incentives to promote provider coordination/joint working through for example, the creation of multi-disciplinary teams or provider networks; mechanisms supporting the implementation of shared health records?
Quality assurance mechanisms	Existence of national approaches for quality assurance of health services	Supporting questions: Does country/region have a strategy to ensure high-quality care at all levels in the system with clearly defined goals, identified measures and responsible bodies to ensure implementation? Are other instruments for improving quality of care in place, for example, clinical guidelines, standard operational procedures, clinical audits and deaths reviews, systems to report adverse events and patient feedback systems?

Source: WHO (2021).

7.5 Conclusions

This chapter sets out a proposed conceptualization of the service delivery function and sub-functions within a health system, along with suggestions for assessing the performance of service delivery, both as a product of the governance, financing and resource generation functions and as a means through which most health system goals are being achieved. We show that there are many possible ways to conceptualize and assess the health services function, and there remains a need for a generalizable framework for

assessing this function in the context of overall health systems performance assessment. We propose a set of assessment areas – effectiveness, safety, user experience, access, equity and efficiency – for each sub-function of service delivery, along with decision-making authority, service integration and quality assurance to capture broader governance aspects of the service delivery functions.

Overall, there remains a degree of ambiguity and overlap between the core health system functions, which is particularly evident for service delivery. We have tried to minimize this overlap and duplication by attributing specified assessment areas to each function (see also Chapter 3). Given that governance, financing and resource generation impact largely on the service delivery function, it is difficult to assess service delivery independently from the other functions. Furthermore, as discussed in this chapter and Appendix 7.1, service delivery can be conceptualized in many ways. We have chosen the sub-functions of public health, primary care and specialist care as this reflects the way service delivery is organized in most countries. This approach accommodates individual country settings in performance assessment and allows for countries to explore specific service areas – such as primary care, or the level of integration between primary and specialist care – in more detail.

In proposing indicative measures for the assessment of sub-functions we drew on indicators where data are available globally or for different regions, although this is subject to data quality, comparability and completeness. The measures we have proposed are not an exhaustive inventory of those available, but rather a selection of those we consider most useful. Where available, they can form the basis for, or complement more in-depth contextual and qualitative appraisal, which forms the core of most HSAs. Countries may elect to expand on these measures to better reflect their own service delivery organization and structure. Importantly, some areas are less well represented, in particular the governance of service delivery. There is a need for the development of suitable indicators that better capture these functions.

References

- Adams O et al. (2003). Provision of personal and non-personal health services: Proposal for monitoring. In: Murray C, Evans D, eds. *Health systems performance assessment. Debates, methods and empiricism*. Geneva, World Health Organization.
- Alkire B et al. (2015). Global access to surgical care: a modelling study. *Lancet Global Health*, 3:e316–e323.

- Arsenault C et al. (2018). Equity in antenatal care quality: an analysis of 91 national household surveys. *Lancet Global Health*, 6:e1186–e1195.
- Bentley T et al. (2008). Waste in the U.S. Health Care System: A Conceptual Framework. *Milbank Q*, 86:629–659.
- Black N, Gruen R (2005). *Understanding health services*. Maidenhead, Open University Press.
- Bloom G, Nolte E (2019). Adapting a health system to changing population needs: Insights from international experience. Background paper for the Tripartite Evaluation of China's Health System Reform (2009–2019).
- Braithwaite J et al. (2017). Health system frameworks and performance indicators in eight countries: A comparative international analysis. *SAGE Open Med*, 5:2050312116686516.
- Brownlee S et al. (2017). Evidence for overuse of medical services around the world. *Lancet*, 390:156–168.
- Cacace M et al. (2011). How health systems make available information on service providers. Experience in seven countries. *RAND Health Quarterly*, 1(1):11.
- Cacace M, Nolte E (2011). Healthcare services: strategy, direction and delivery. In: Walshe K, Smith J, eds. *Healthcare management*. Maidenhead, Open University Press.
- Cavalcante D et al. (2018). Did the Family Health Strategy have an impact on indicators of hospitalizations for stroke and heart failure? Longitudinal study in Brazil: 1998–2013. *PLoS One*, 13:e0198428.
- Chabrol F, Albert L, Ridde V (2019). 40 years after Alma-Ata, is building new hospitals in low-income and lower-middle-income countries beneficial? *BMJ Glob Health*, 3.
- Commonwealth Fund (2020). International Health Policy Surveys. URL: (<https://www.commonwealthfund.org/series/international-health-policy-surveys>, 20 August 2020).
- Cylus J, Papanicolas I, Smith P (2017). How to make sense of health system efficiency comparisons? Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- De Geyndt W (2017). Does autonomy for public hospitals in developing countries increase performance? Evidence-based case studies. *Social Science & Medicine*, 179:74–80.
- Donabedian A (1980). *The definition of quality and approaches to its management*, Ann Arbor, Health Administration Press.
- Donabedian A (1988). The quality of care: how can it be assessed? *JAMA*, 260:1743–1748.
- Elshaug A et al. (2017). Levers for addressing medical underuse and overuse: achieving high-value health care. *Lancet Global Health*, 390:191–202.

- European Commission (2017). Tools and methodologies to assess integrated care in Europe. (https://ec.europa.eu/health/sites/health/files/systems_performance_assessment/docs/2017_blocks_en_0.pdf, 20 August 2020).
- European Commission (2018). A new drive for primary care in Europe: rethinking the assessment tools and methodologies. Report of the Expert Group on Health Systems Performance Assessment. (https://ec.europa.eu/health/sites/health/files/systems_performance_assessment/docs/2018_primarycare_eg_en.pdf, 20 August 2020).
- EUROSTAT (2019). Unmet health care needs statistics. (https://ec.europa.eu/eurostat/statistics-explained/index.php/Unmet_health_care_needs_statistics, 20 August 2020).
- Gibson O, Segal L, McDermott R (2013). A systematic review of evidence on the association between hospitalisation for chronic disease related ambulatory care sensitive conditions and primary health care resourcing. *BMC Health Service Research*, 13:336.
- Global Conference on Primary Health Care (2018). Declaration of Astana. (<https://www.who.int/docs/default-source/primary-health/declaration/gcphc-declaration.pdf>, 20 August 2020).
- Hajat C, Stein E (2018). The global burden of multiple chronic conditions: A narrative review. *Preventive Medicine Reports*, 12:284–293.
- Institute for Health Metrics and Evaluation (2019). Health-related SDGs. (<http://www.healthdata.org/data-visualization/health-related-sdgs>, 20 August 2020, 20 August 2020).
- Institute for Health Metrics and Evaluation (2020). Global Burden of Disease Study 2016 (GBD 2016) Healthcare Access and Quality Index Based on Amenable Mortality 1990–2016. (<http://ghdx.healthdata.org/record/ihme-data/gbd-2016-healthcare-access-and-quality-index-1990-2016>, 20 August 2020).
- Institute of Medicine (2001). *Crossing the quality chasm: A new health system for the 21st century*, Washington, D.C., National Academy Press.
- International Conference on Primary Health Care (1978). Declaration of Alma-Ata. International Conference on Primary Health Care, Alma-Ata, USSR, 6–12 September 1978. (https://www.who.int/publications/almaata_declaration_en.pdf, 20 August 2020).
- International Diabetes Federation (2020). *IDF Diabetes Atlas*, 9th edn. 2019. (<https://diabetesatlas.org/en/>, 20 August 2020).
- Kelley E, Hurst J (2006). *Health Care Quality Indicators project. Conceptual framework paper*. Paris, OECD.
- Kelly L et al. (2020). Measures for the integration of health and social care services for long-term health conditions: a systematic review of reviews. *BMC Health Service Research*, 20.

- Kringos D et al. (2019). Re-thinking performance assessment for primary care: Opinion of the expert panel on effective ways of investing in health. *European Journal of General Practice*, 25:55–61.
- Kruk M et al. (2018a). High-quality health systems in the Sustainable Development Goals era: time for a revolution. *Lancet Global Health*, 6:e1196–e1252.
- Kruk M et al. (2018b). Mortality due to low-quality health systems in the universal health coverage era: a systematic analysis of amenable deaths in 137 countries. *Lancet*, 392:2203–2212.
- Levesque J, Harris M, Russell G (2013). Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *International Journal of Equity in Health*, 12:18.
- Lomazzi M, Jenkins C, Borisch B (2016). Global public health today: connecting the dots. *Global Health Action*, 9:28772.
- Londoño J, Frenk J (1997). Structured pluralism: towards an innovative model for health system reform in Latin America. *Health Policy*, 41:1–36.
- Macinko J et al. (2010). Major expansion of primary care in Brazil linked to decline in unnecessary hospitalisation. *Health Affairs*, 29:2149–2160.
- Martin-Moreno J et al. (2016). Defining and assessing public health functions: A global analysis. *Annual Review of Public Health*, 37:335–355.
- Murray C Frenk J (2000). A framework for assessing the performance of health systems. *Bulletin of the World Health Organization*, 78:717–731.
- National Academies of Sciences, Engineering and Medicine (2018). *Crossing the global quality chasm: Improving health care worldwide*. Washington, D.C., The National Academies Press.
- Nguyen H et al. (2019). Prevalence of multimorbidity in community settings: A systematic review and meta-analysis of observational studies. *Journal of Comorbidities*, 9:2235042X19870934.
- Nolte E (2017). Evidence supporting integrated care. In: Amelung V et al.eds. *Handbook of Integrated Care*. Cham, Springer.
- Nolte E, Knai C, Saltman R (eds.) (2014). *Assessing chronic disease management in European health systems. Concepts and approaches*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Nolte E, McKee M (2004). *Does healthcare save lives? Avoidable mortality revisited*. London, The Nuffield Trust.
- Nolte E, McKee M (2008a). *Caring for people with chronic conditions. A health system perspective*, Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.

- Nolte E, McKee M (2008b). Making it happen. In: Nolte E, McKee M, eds. *Caring for people with chronic conditions: A health system perspective*. Maidenhead, Open University Press.
- Nolte E, McKee M, Wait S (2005). Describing and evaluating health systems. In: Bowling A, Ebrahim S, eds. *Handbook of health research methods. Investigation, measurement and analysis*. Maidenhead, Open University Press.
- Nolte E et al. (2011). Informing the development of a resource allocation framework in the German healthcare system. Santa Monica/Cambridge (UK), RAND Corporation.
- OECD (2020). Health Care Quality Framework. (<http://www.oecd.org/els/health-systems/health-care-quality-framework.htm>, 20 August 2020).
- OECD, EUROSTAT & WHO (2011). *A System of Health Accounts*. Paris: OECD Publishing.
- OECD.STAT (2020a). Health Care Quality Indicators. (<https://stats.oecd.org/Index.aspx?QueryId=51879>, 20 August 2020).
- OECD.STAT (2020b). Health status: Avoidable mortality. (<https://stats.oecd.org/Index.aspx?QueryId=96018>, 20 August 2020).
- Palmer S, Torgerson D (1999). Definitions of efficiency. *BMJ*, 318:1136.
- Pettigrew L et al. (2015). Primary health care and the Sustainable Development Goals. *Lancet*, 386:2119–2121.
- PHCPI (2018). Strong Primary Health Care Saves Lives. (<https://improvingphc.org/>, 20 August 2020).
- Porter R (1997). *The greatest benefit to mankind: A medical history of humanity from antiquity to the present*. London, Harper Collins Publishers.
- Ravaghi H et al. (2018). A holistic view on implementing hospital autonomy reforms in developing countries: a systematic review. *Health Policy Plan*, 33:1118–1127.
- Rechel B, Duran A, Saltman R (2018). What is the experience of decentralized hospital governance in Europe? 10 case studies from Western Europe on institutional and accountability arrangements. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Rechel B et al. (2018). *Organization and financing of public health services in Europe: Country reports*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Rechel B et al. (2016). Public reporting on quality, waiting times and patient experience in 11 high-income countries. *Health Policy*, 120:377–383.
- Saltman R, Duran A, Dubois H eds. (2011). *Governing Public Hospitals: Reform strategies and the movement towards institutional autonomy*. Copenhagen, WHO Regional

- Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Schweppenstedde D et al. (2014). Regulating quality and safety of health and social care: international experiences. Santa Monica, RAND Corporation.
- Service Delivery Indicators (2017). Indicators. (<https://www.sdindicators.org/indicators>, accessed 20 August 2020).
- Suter E et al. (2017). Indicators and Measurement Tools for Health Systems Integration: A Knowledge Synthesis. *International Journal of Integrated Care*, 17:4.
- The Lancet Commission on Global Surgery (2015). Global Indicator Initiative. (<https://www.lancetglobalsurgery.org/indicators>, accessed 20 August 2020).
- The World Bank (2020). World Development Indicators. (<https://databank.worldbank.org/reports.aspx?source=world-development-indicators>, accessed 20 August 2020).
- Van Olmen J et al. (2010). Analysing health systems to make them stronger. Antwerp, Institute of Tropical Medicine.
- Veillard J et al. (2017). Better measurement for performance improvement in low- and middle-income countries: The Primary Health Care Performance Initiative (PHCPI) experience of conceptual framework development and indicator selection. *Milbank Q*, 95:836–883.
- Vogeli C et al. (2007). Multiple chronic conditions: prevalence, health consequences, and implications for quality, care management, and costs. *Journal of General Internal Medicine*, 22:391–395.
- Watkins D et al. (2017). Chapter 3. Universal Health Coverage and Essential Packages of Care. In: Jamison D et al., eds. *Disease Control Priorities: Improving Health and Reducing Poverty. 3rd Edition*. Washington, D.C., The International Bank for Reconstruction and Development / The World Bank.
- Williams G, Nolte E (2018). Assuring quality of public health services. In: Rechel B, et al., eds. *Organization and Financing of Public Health Services in Europe*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Winpenny E et al. (2016). *Outpatient services and primary care: scoping review, substudies and international comparisons*. Southampton (UK), NIHR Journals Library; PMID: 27195361.
- WHO (1998). Health promotion glossary. (<https://www.who.int/healthpromotion/about/HPR%20Glossary%201998.pdf>, accessed 20 August 2020).
- WHO (2000). *The World Health Report 2000. Health systems: improving performance*. Geneva, World Health Organization.
- WHO (2007). *Everybody's Business: Strengthening health systems to improve health outcomes*. Geneva, World Health Organization.

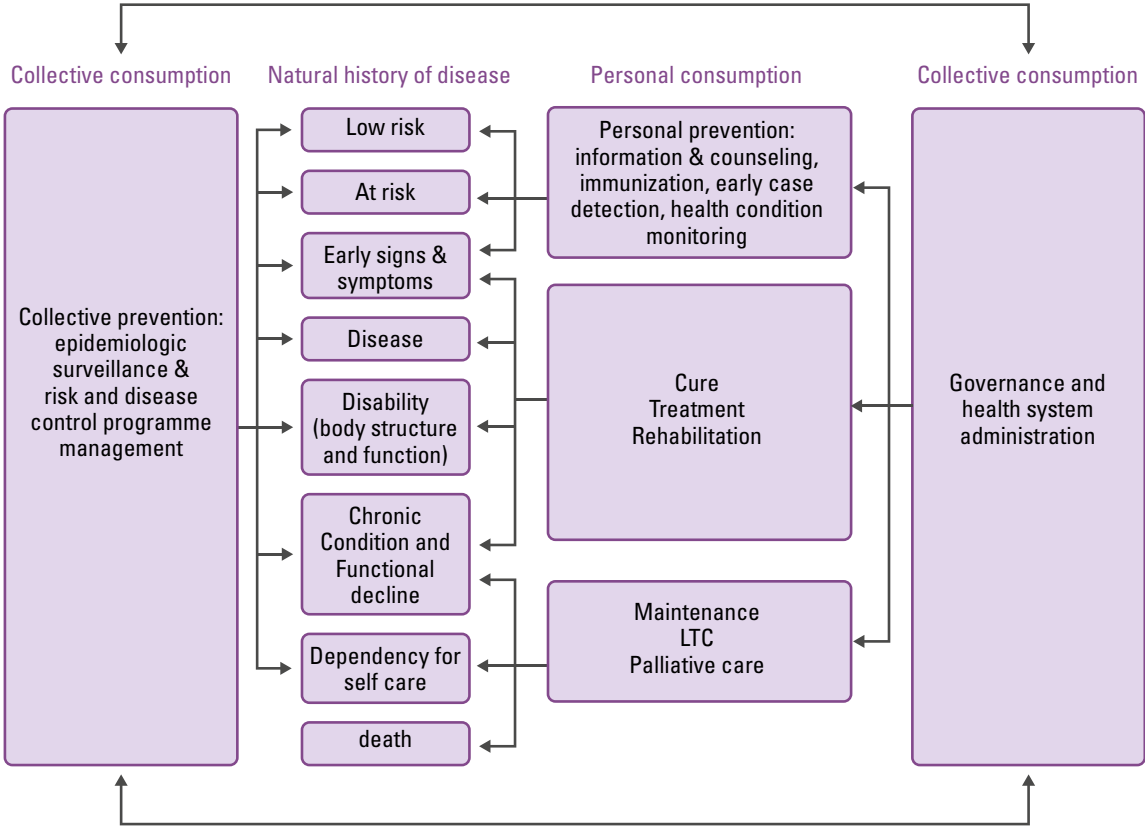
- WHO (2008). The World Health Report 2008 – primary Health Care (Now More Than Ever). Geneva, World Health Organization.
- WHO (2010). Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies. Geneva, World Health Organization.
- WHO (2015a). People-centred and integrated health services: an overview of the evidence. Interim Report. Geneva, World Health Organization.
- WHO (2015b). WHO global strategy on people-centred and integrated health services. Interim report. Geneva, World Health Organization.
- WHO (2016a). Framework on integrated, people-centred health services. Sixty-ninth World Health Assembly, A69/39 15 April 2016. (http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_39-en.pdf?ua=1&ua=1, accessed 20 August 2020).
- WHO (2016b). Global Health Observatory data repository. (<https://apps.who.int/gho/data/node.main#ndx-M>, accessed 20 August 2020).
- WHO (2018). Essential public health functions, health systems and health security: developing conceptual clarity and a WHO roadmap for action. (<https://extranet.who.int/sph/docs/file/2091>, accessed 20 August 2020).
- WHO (2020a). Service Availability and Readiness Assessment (SARA). (https://www.who.int/healthinfo/systems/sara_reports/en/, accessed 20 August 2020).
- WHO (2020b). STEPS Country Reports. (<https://www.who.int/ncds/surveillance/steps/reports/en/>, accessed 20 August 2020).
- WHO (2021) Correspondence with WHO Headquarters, Geneva.
- WHO & UNICEF (2018). Primary health care: transforming vision into action. Operational framework. Draft for consultation. (https://www.who.int/docs/default-source/primary-health-care-conference/operational-framework.pdf?sfvrsn=6e73ae2a_2, accessed 20 August 2020).
- WHO REGIONAL OFFICE FOR EUROPE (2020). Public health services. (<http://www.euro.who.int/en/health-topics/Health-systems/public-health-services>).
- Yap M et al. (2016). Global Access to Radiotherapy Services: Have We Made Progress During the Past Decade? *Journal of Global Oncology*, 2,207–215.

Appendix 7.1 A brief overview of approaches to categorizing service delivery

Target population

One broad categorization of the service delivery function is that of individual, person-based health services and collective, population-based health services, as proposed by Murray & Frenk (2000). A similar conceptualization was brought forward in the development of the System of Health Accounts, a framework for the systematic description of the financial flows related to health care (OECD, EUROSTAT & WHO, 2011). It distinguishes personal and collective health care services, with the latter comprising prevention and public health services, as well as health administration and health insurance (Fig. 7.A1).

Fig. 7.A1 Categorization of service delivery according to the purpose of health care goods and services



Source: OECD, EUROSTAT & WHO (2011).

While providing a useful broad classification of health services, this conceptualization has the disadvantage of cutting across the range of services that can be directed at both individuals – screening or vaccination services, for example; and populations – for example, sanitation or health campaigns. Furthermore, services directed at groups of individuals, such as families or communities, will be difficult to categorize within this conceptualization of individual versus collective services.

Primary purpose of consumption

The System of Health Accounts framework mentioned above further differentiates the health service function according to the primary purpose of consumption, such as preventive, curative, rehabilitative or long-term care. This considers prevention and public health services as preventive, and rehabilitative or long-term care as curative, but include individual and collective goods and services (OECD, EUROSTAT & WHO, 2011). Here, prevention encompasses both primary and secondary prevention, whereas tertiary prevention is considered in the context of curative and rehabilitative care, with its primary aim being to reduce disease-related complications. Curative care is further broken down into general and specialized services.

Types of provider or delivery platforms

Van Olmen et al. (2010) emphasized that the provision of health services involves a range of services, delivery modes and providers. In relation to health care processes and structures, they use the term delivery platforms or channels (Table 7.A1).

Table 7.A1 shows that not all health services are provided by all providers or delivery platforms but, rather, a number of services are provided by several platforms. Notably, households are also recognized as a platform through which health services can be delivered. This is in line with the WHO framework for action for health system strengthening (2007), which identified the locations of service delivery and included people's own homes, the community, the workplace and health facilities (WHO, 2007).

Similarly, Watkins et al. (2017) suggested a classification of five delivery platforms in low- and middle-income countries:

- population-based health interventions, including all non-personal or population-based health services

- community services, including health outreach and campaigns, schools and community health workers
- health centres, including higher and lower capacity health facilities
- first-level hospitals
- referral and specialized (second- and third-level) hospitals.

This approach was further refined by Kruk et al. (2018a), who distinguished community outreach, primary and hospital care, and the links between them through referral systems and emergency medical services.

The notion of different types of provider or delivery platforms is attractive to policy-makers because health care organizations can be steered, and held to account on health outcomes, through the appropriate governance and financing instruments. However, health care providers frequently deliver a wide range of overlapping services, and health outcomes, including complications or death, often occur at the end of a complex chain of events involving different types of provider. This makes it difficult to attribute accountability for outcomes to single organizations (Nolte & McKee, 2004). Similarly, with the rise of chronic and multiple conditions, population health needs are becoming increasingly complex. This requires different providers and organizations to work together, in an integrated manner, to enhance outcomes (Nolte, 2017). Inevitably, this will increasingly be at odds with the notion of attributing accountability to individual providers, and will require greater focus on the agency or agencies overseeing the integration of services.

Table 7.A1 *Example of delivery platforms for certain health services*

Health services	Delivery platforms				
	Household	Community health worker	Mobile clinic	Health centre	Hospital
Bednet distribution	X	X	X		
Immunization			X	X	
Antiretroviral therapy		X		X	X
Integrated management of childhood illnesses			X	X	
Mental health care	X	X		X	
Surgery					X
Diabetes care	X	X	X	X	(X)
Obstetric care			X	X	X

Source: Adapted from Van Olmen et al. (2010).

Levels and modes of provision

A commonly used approach to classifying health services is by level or mode of provision, typically delineating the levels of primary, secondary and tertiary care or the modes of inpatient care, outpatient care, day care and home-based care. Primary care has been defined as “the first port of call for the sick” (Porter, 1997) for individuals, the family and the community. It “constitutes the first element of a continuing health care process” (International Conference on Primary Health Care, 1978); and it is general rather than specialized, as it focuses on the initial response to unspecified and common health problems. Secondary care refers to specialist care that is usually provided in local hospitals or in outpatient care settings, while tertiary care comprises highly specialized services that are usually provided in regional or national hospitals (Black & Gruen, 2005), in order to concentrate expertise and complex and high-cost resources.

The aforementioned System of Health Accounts framework does not specifically distinguish levels of care, but categorizes provision into different modes of care. These are characterized by whether a patient is formally admitted to a health care facility (inpatient and day care) or not (outpatient and home-based care), whether this involves an overnight stay (inpatient care) or not (day care), as well as the location of service provision. For example, outpatient care is delivered from the health care providers’ premises, whereas home-based care is provided at the patient’s home (OECD, EUROSTAT & WHO, 2011).

Although this classification is useful, as it differentiates levels of complexity and specialization along with the mode of service delivery, boundaries are not always clear-cut. For example, hospitals may provide primary, preventive, rehabilitative or long-term care, while primary care centres in some countries are increasingly providing specialized services through, for example, specialist clinics for diabetes or other chronic conditions (Winpenny et al., 2016). Importantly, levels of care can vary across types of provider and differentiating between levels and modes of provision will be increasingly challenging as countries move to more integrated systems of service delivery and continue to blur these boundaries.

A framework for Health System Performance Assessment

*Irene Papanicolas, Marina Karanikolos, Dheepa Rajan,
Katja Rohrer, Jonathan Cylus, Josep Figueras*

8.1 Introduction

The collection of information for the purpose of HSA and HSPA is growing, and these efforts are increasingly being recognized as a means to monitor and strengthen health systems globally (Witter et al., 2019). Yet, as the number of measurement tools and frameworks grows, there is still considerable variation, and often confusion, as to what is being measured and how these different efforts come together (Bennet & Peters, 2015). A common conceptual framework can help to clarify the way in which stakeholders understand health systems, and in turn how the information used to assess one area of the system can be linked to information that measure the performance of another.

The key objective of this volume is to present the HSPA Framework for UHC. The fundamental premise behind the framework is that the attainment of the health system's goals, or the performance of the health system, is linked to the performance of each of the four health system functions. Therefore, by assessing the performance of each function and identifying potential areas of improvement, policy-makers can identify ways to strengthen the health system and improve the attainment of the final goals (WHO, 2000). This premise is not novel and informs many existing health systems frameworks and HSA efforts, but relatively few tools link health system performance to specific features of the health system functions, in practice (see Chapter 2). The conceptual framework proposed in this volume aims to bridge the gap between existing HSA and HSPA activities. This will be done by: (1) bringing together existing indicators from a range of HSA tools in a coherent way for policy-makers to examine the performance of each of the four health system functions; and (2) outlining the linkages that exist between the performance of the health system functions and health system performance.

This chapter will bring together the different elements of the framework to introduce the HSPA Framework for UHC. Building on the previous chapters of this volume – where the health system functions, intermediate objectives and final goals of the health system were introduced, and frameworks were developed to evaluate the performance of each of the health system functions – this chapter will first focus on bringing these together to outline the proposed linkages between the health system functions and outcomes. Next, to demonstrate how the framework can be used by policy-makers to identify areas for improvement in the health system, the chapter will present a series of case studies.

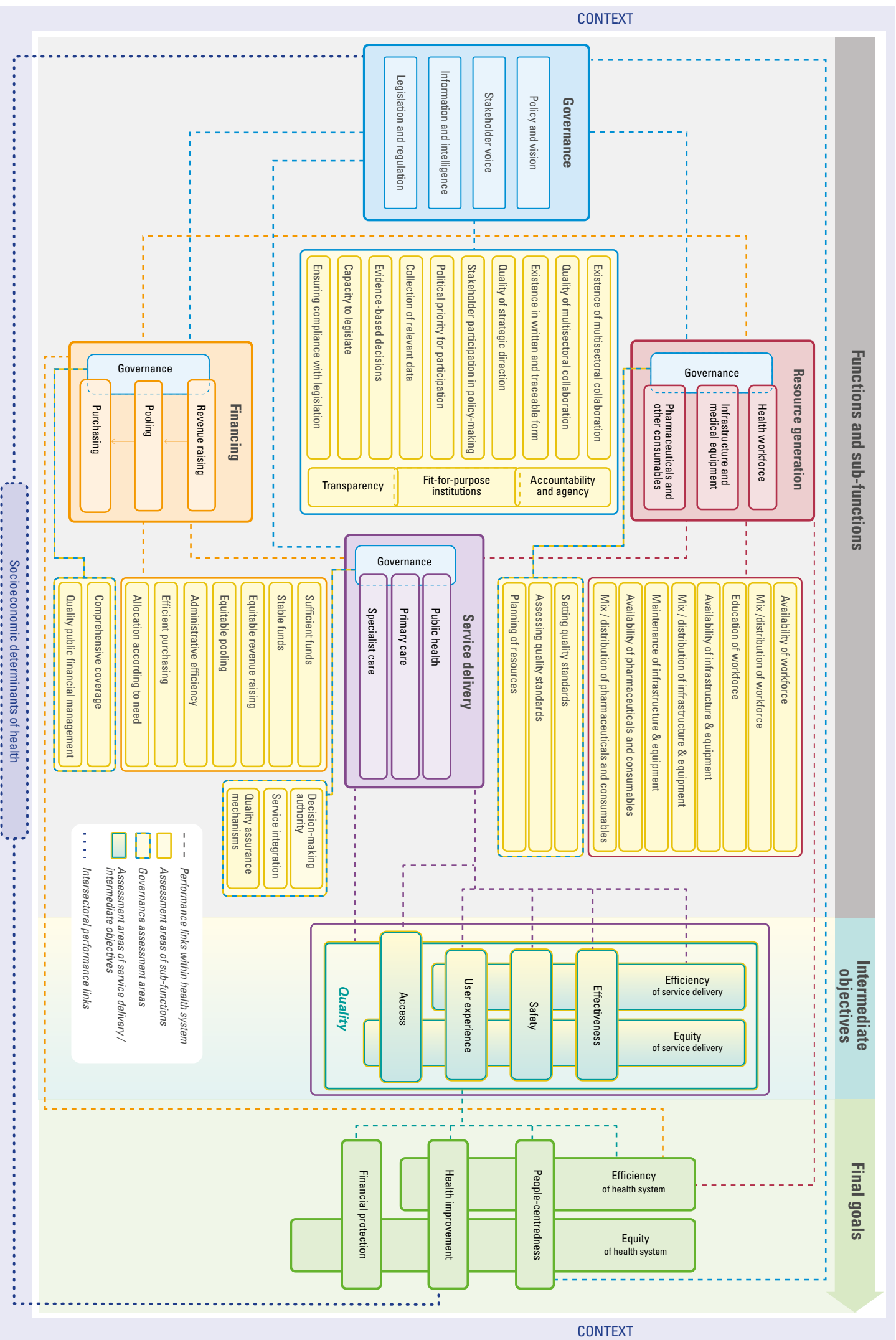
8.2 The HSPA Framework for UHC

The HSPA Framework for UHC is illustrated in Fig. 8.1. This depiction shows the different health system components: the health system functions, their corresponding sub-functions, the assessment areas used to evaluate the performance of the functions and sub-functions, and the intermediate objectives and final goals of the health system. All assessment areas are shown in yellow boxes (with service delivery assessment areas in both yellow and turquoise as they overlap with intermediate health system goals – see Chapter 7). Finally, the framework outlines key performance linkages between the functions and sub-functions and intermediate and final goals.

8.2.1 Design of the framework

The functions are placed at the very left-hand side of the framework and represent the key factors that contribute to health system performance, namely: governance, resource generation, financing and service delivery. The assessment areas recommended to examine the performance of each function are shown to the right of each function box. The governance function is also the only function that is presented within each of the other functions, as a blue box. This indicates that while some parts of governance stand alone, governance is also present in the other functions. Among functions, service delivery is the one placed most to the right, indicating that all the other functions feed into it. The functions feed into the intermediate objectives, in the middle of the framework. The intermediate objectives are also the assessment areas of the service delivery function, and therefore are coloured both yellow and turquoise. Finally, the intermediate objectives feed into the attainment of the final goals, which are presented to the far right of the framework, in green.

Fig. 8.1 The HSPA Framework for UHC



Source: Authors' compilation.

Box 8.1 *Glossary of key terms*

Access

The opportunity to reach and obtain appropriate health care services in situations of perceived need for care. (Levesque, Harris & Russell, 2013)

Autonomy

The degree to which decision-making is delegated to semi-autonomous agencies such as hospitals or provider networks, thus focusing specifically on facilities predominantly providing specialized health services (Adams et al, 2003)

Assessment areas

The assessment areas proposed are meant to evaluate the extent to which the functions and sub-functions are achieving their objectives, and are informed from the literature, the review of HSA tools (Chapter 2) and TWG discussions and consultations.

Effectiveness

Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and misuse, respectively).

Financial protection

Safeguarding people against the financial hardship associated with paying for health services

Final goals

The main objectives of the health system according to the HSPA Framework for UHC—health improvement, person centeredness, financial protection, health system efficiency, health system equity.

Governance

- Policy and vision
- Stakeholder voice
- Information and intelligence
- Legislation and regulation

Health improvement

Health Improvement refers to the improvement of the health of the population. Where health refers to health at different parts of the life cycle, morbidity and premature mortality.

Health service efficiency

Health service efficiency refers to maximizing health service objectives (quality and access) given the resources available.

Health service equity

Health Service equity refers to the distribution of care quality provided and ensuring that it does not vary because of personal characteristics such as gender, ethnicity, geographic location and socio-economic status.

Health system

A health system is comprised of the resources, actors and institutions related to the financing, regulation and provision of any set of activities whose primary intent is to improve or maintain health (Murray & Frenk, 2000).

Health system functions

The factors that explain health system performance: financing; service delivery, governance and resource generation.

Health system efficiency

Health system efficiency refers to maximizing the final health system objectives (health improvement, people centeredness and financial protection) given the resources available.

Health system equity

Health system equity refers to the distribution of health improvement and people centeredness across the population as a whole, as well as the level of financial protection.

Indicative measures

Indicators or measures that could be used to capture how well the assessment areas are functioning.

Integration

Integration refers to “the extent to which different inputs, organization, management and service functions are brought together” (Adams et al., 2003). More broadly, integration of services reflects increasing concern about the continued focus of health systems on acute, episodic illness and dependence on hospital-based care delivery (Nolte, 2017).

Intermediate objectives

The short- to medium-term health system objectives necessary to ensure the final goals of the health system are attained. In the HSPA Framework for UHC these are defined as: quality, access, health service efficiency and health service equity.

People centeredness

Approach to care that consciously adopts the perspectives of individuals, carers, families and communities as participants in, and beneficiaries of, trusted health systems that are organized around the comprehensive needs of people rather than individual diseases, and respects social preferences.

Pooling resources

Pooling resources refers to the accumulation of prepaid funds, which can be used to purchase goods and services on behalf of a population.

Primary care

Precise conceptualization can vary depending on country context and organizational structure of health system, but a common thread is that primary care represents the first point of contact for unspecified and common health problems.

Public health

Precise conceptualization can vary depending on country context and organizational structure of health system, but a common thread is seeing it as a collective or societal approach that is aimed at “improving health, prolonging life and improving the quality of life among whole populations” (WHO, 1998).

Public financial management (PFM)

PFM is the set of rules and mechanisms that govern the allocation, use and accountability of public funds

Purchasing (or commissioning) goods or services

Purchasing (or commissioning) refers to the use of funds to providers on behalf of a population to pay for health care

Quality

The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current medical knowledge (Institute of Medicine, 2001).

Resource generation

- Health workforce
- Infrastructure and medical equipment
- Pharmaceuticals and other consumables

Revenue raising

Revenue raising refers to the ways in which money is brought into the health system.

Safety

Care that protects patients from medical errors and does not cause harm

Service delivery

The combination of inputs into a production process that takes place in a particular organizational setting and that leads to the delivery of a series of interventions (Murray & Frenk, 2000).

Specialist care

Specialist care conceptualization may vary depending on health services set up, but overall these are services that encompass secondary and tertiary care. Secondary care is usually provided in (local) hospitals, while tertiary care comprises highly specialized care services delivered in regional or national hospitals to concentrate expertise and complex and high-cost resources (Black & Gruen, 2005).

Sub-functions

Elements of strategic design, structural arrangements and implementation management that might contribute to a health system’s ability to carry out these functions.

User experience

Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.

8.2.2 Performance links

The performance links depicted in the framework by dotted lines, show how each of the functions is connected to the others, and to the intermediate objectives and final health system goals. There are two ways in which a function may influence health system performance (the final goals), directly or indirectly. There are only a small number of direct performance links between specific functions and the health system goals. In most cases the way in which the functions influence the final goals will be indirect and work through a series of interactions from one function to the other, influencing the intermediate and final goals through the service delivery function. This is illustrated by a series of dotted lines that connect one function to the other, and link service delivery to the intermediate goals. As outlined in Chapter 4 on governance, one of the indirect links between the governance function and the health system's performance will travel outside the health system, through the socioeconomic determinants of health. This demonstrates that through advocacy for health in all policies, governance can influence these determinants; which can lead to improvements in health outcomes as a result.

The framework illustrates only four direct performance links from specific functions to the final goals. First, there is a link between governance and people centredness. This performance link shows that a system that involves people in the decision-making process will see a system that is more people-centred, that is responsive to people's needs (WHO, 2016). Second, there is a direct performance link between financing and health system efficiency. As outlined in Chapter 3, the efficiency of the health system refers to maximizing health system objectives given the resources available. Financing directly influences health system efficiency through the valuation of the resources available. For example, the operation of the financing function determines the cost and prices of inputs and administration, directly influencing the efficiency of the system. Third, there is a direct link between resource generation and health system efficiency. More specifically, the availability, mix, distribution and quality of inputs, all part of the resource generation function, will directly influence technical and allocative efficiency. Finally, there is a direct influence of service delivery on the intermediate objectives of the health system, namely quality and access, and in turn these influence all final outcomes.

8.3 Applications of the HSPA Framework for UHC: case studies

The HSPA Framework for UHC is meant to facilitate HSPA by providing users with a tool to assist in identifying potential sources of performance variation. The framework

can be used from left to right: allowing the user to identify sources of underperformance in the functions and sub-functions through the indicators tied to the assessment areas, and subsequently through the performance links to identify where these areas of weakness may influence the performance of the health system in terms of the intermediate objectives and final goals. The framework can also be used from right to left – to examine variability in the health system goals, and intermediate outcomes, relative to other countries or a set of normative benchmarks, and then trace this back to potential sources of variation in the functions or sub-functions. The framework is meant to be used as a conceptual aid to prompt further investigation into the actual causes of variation. It can also help users to identify particularly high- or low-performing functions and sub-functions from which to begin more detailed scrutiny. To illustrate how the framework can be used for this purpose, we present five short case studies. Each one takes as a different starting point – functions, intermediate objectives or final goals – to illustrate the versatility of the framework:

Case Study 1: Quality of intersectoral collaboration (governance) – Housing in health

Case Study 2: Availability of medicines (resource generation)

Case Study 3: Effectiveness (intermediate objective) – Amenable mortality

Case Study 4: Financial protection (final goal)

Case Study 5: Resilience (shock to the system)

The first two case studies illustrate how the frameworks can be used from left to right – by examining the functions as a starting point. They start from a particular assessment area of a sub-function, and show how through linkages in the framework one can trace the performance of the one component being studied to the performance of other aspects of the health system that may be influenced as a result. The first case study explores how the implementation of a particular policy strategy (housing) may go on to influence the performance of the final health system goals, while the second aims to use the framework to illustrate the many ways in which medicine shortages may impact the intermediate objectives and final health system goals.

The third case study also begins from an assessment area of service delivery, effectiveness, but as this is also an intermediate goal of the system, it is placed in the middle of the framework. This case study explores a particular indicator of effectiveness – amenable mortality – and illustrates how this indicator can be broken down and traced back to the other functions to better identify potential causes of amenable mortality, as well as consider how it may impact the attainment of the final goals.

The fourth case study illustrates how the framework can be used to work backwards from a final health system outcome, financial protection, to identify potential sources of variation. Finally, the last case study on resilience illustrates how the framework can be used to investigate the potential effects of shock on the entire health system.

Each case study follows the same approach for simplicity, and answers the following three questions:

1. What is the health system performance issue?
2. Where does this issue fit within the framework?
3. How does the framework assist us in understanding the potential causes of and/or potential impact on health system performance?

The first question aims to clarify the performance challenge. The second question considers how the challenge can be pinned down within the framework to serve as a starting point for further health system analysis. The last question considers the linkages to the other functions and then to the outcomes.

8.3.1 Case Study 1: Intersectoral collaboration

8.3.1.1 What is the health system performance issue?

Housing is a determinant of health. Health risks increase with poor housing conditions. For example, overcrowding has been one of the key reasons for increased Coronavirus transmission amongst migrant and low-income communities (von Seidlein, 2021; Zar et al., 2020; Benfer et al., 2021). Faulty or low-quality construction or maintenance can lead to higher risks of home injuries (WHO, 2018). Good respiratory and cardiovascular health is dependent upon housing that is adequately insulated against both extreme heat and cold (Howden-Chapman et al., 2007; Preva et al., 2017). A lack of tenure security, namely the threat of eviction or affordability worries, can be a source of chronic stress, triggering or exacerbating mental health problems (Bentley, Baker & Aitken, 2019; Martin et al., 2019).

8.3.1.2 Where does this issue fit in the framework?

According to the definition of the health system used by this approach, housing policy lies outside the health system, because its primary aim is not to improve health.

However, as indicated by the framework, it is one of the social determinants that will impact the health system goals. A strong health system governance function hinges on, among other things, the capacity of health stewards to reach out, collaborate and make the case that investments in the social determinants have large co-benefits beyond health. This is captured in the HSPA Framework for UHC, in the policy and vision sub-function of governance, through two assessment areas: (1) the existence of multisectoral collaboration and (2) the quality of multisectoral collaboration.

8.3.1.3 How does the framework assist us in understanding the potential causes of and/or potential impact on health system performance?

As an illustration of housing's significance for health system performance we explore the Healthy Housing Programme in South Auckland, New Zealand. This programme was set up 20 years ago following a meningococcus outbreak that began in a low-income population living in crowded housing conditions (Baker et al. 2000). Following evidence that emphasized the risk of further outbreaks unless housing conditions were addressed, New Zealander decision-makers from health and several other sectors joined forces to put in place The Healthy Housing Programme to improve home insulation and ventilation and reduce overcrowding. A 10-year follow-up study found a significant reduction in acute hospitalization for people aged under 34 years compared with the period before the Healthy Housing Programme came into effect (Jackson et al., 2011).

In New Zealand, political will was fostered by the shock of a local epidemic, which health stewards leveraged to collaborate widely across sectors to ensure that health was indeed in all policies. The Ministry of Health cultivated strong working relationships with Housing New Zealand, the Ministry of Social Development, the Energy Efficiency Conversation Authority, the Ministry of Business, Innovation and Employment, and other key government institutions (Ministry of Health/Manatū Hauora, 2020).

Health system leaders joined forces with urban planners, social workers and energy experts to pro-actively and jointly advocate for the multifactorial benefits of an intervention (improved housing conditions), which is essentially outside the health sector. This multisectoral collaboration would be captured in the assessment areas of the policy and vision sub-function of governance: existence of multisectoral action and quality of multisectoral action.

8.3.1.4 Housing in the framework

Governance is placed at the very left of the HSPA Framework for UHC because it enables the other functions. One of the sub-functions identified is that of Policy and vision, whose performance can be measured through corresponding assessment areas linked to intersectoral collaboration.

One way in which the performance of this sub-function may influence health system performance is indirectly through its role in enabling the other functions. For example, the determinants of health disproportionately impact the lower socioeconomic strata of society, as was the case in New Zealand where low-income housing residents were the most affected by the meningococcus outbreak. Addressing social determinants through strong intersectoral collaboration may influence the service delivery function by reducing the number of people from lower socioeconomic groups who require health care. This could also positively influence health systems equity, the final goal of the health system, by reducing the disparities in health outcomes across the population.

Improvements in the health system final goal of overall health can also be influenced by housing conditions; this is represented in the dotted line from the governance function going outside the health system and coming back into the system at the final goal of health improvement. The South Auckland case study demonstrates this through the reduction in acute hospitalization for people under 34 following the setting up of the Healthy Housing Programme (Jackson et al., 2011).

It is also possibly that improvements in housing can influence health system efficiency, another of the final health system goals. A joint multi-factorial approach across sectors, which addresses several risk factors relevant to more than one sector, offers the possibility for reducing costs while improving health. This may involve shared funding streams where spending is evaluated against not only health system performance but also goals from other sectors (for example, energy efficiency, community development).

8.3.2 Case Study 2: Pharmaceutical availability

8.3.2.1 What is the health system performance issue?

Almost two billion people worldwide have no access to medicines (Ozawa et al., 2019), despite it being considered a universal human right*. Drug shortages impact on the health system's ability to effectively deliver quality health care because they imply that patients might receive no treatment at all, might need to choose an alternative – less effective – treatment, might need to delay their treatment, or even experience challenges when trying to receive treatment via other sources (EAHP, 2018; Modisakeng et al., 2020). While the highest burden of medicine shortages is carried by low- and middle-income countries, the problem is global. For example, in Europe, 38% of hospitals report experiencing medicine shortages on a weekly basis (Hosseini et al., 2018).

8.3.2.2 Where does this issue fit in the framework?

Given its critical role for quality of care and other health system goals, medicine availability in the HSPA Framework for UHC is an assessment area under the pharmaceuticals and consumables sub-function of the resource generation function. This assessment area exemplifies the close links between the resource generation function and the service delivery function and highlights the health system's duty to ensure that pharmaceutical products are available (resource generation) where they are needed (service delivery) as a key contribution to health system performance.

8.3.2.3 How does the framework assist us in understanding the potential causes of and/or potential impact on health system performance?

The different health system functions need to work closely together to achieve availability of needed medicines. The factors contributing to drug shortages may stem from underperformance of the resource generation function, but can also be influenced by the performance of the other functions.

We draw on the example of shortages in paediatric chemotherapy and supportive-care drugs, like sterile injectable drugs, in the USA to elucidate some of the factors related

* See: 1946 Constitution of the World Health Organization and the 1948 Universal Declaration of Human Rights.

to medicine shortages as well as its influence on systems performance. Between 2001 and 2017 almost one third of the paediatric oncology drugs were affected by the shortage of paediatric chemotherapy and supportive-care drugs (FDA, 2019). For example, between 2009 and 2019, 9 out of 11 acute lymphoblastic leukaemia drugs were not available to patients (FDA, 2019).

In this case, a high-income country with an autonomous private production and distribution sector, the US Food and Drug Administration identified three root causes for drug shortages: a lack of (financial) incentives to produce and distribute less profitable drugs, the high additional efforts and costs of adhering to good manufacturing practices, as well as the regulatory challenges related to the drug supply chain (Tanday, 2016). From the HSPA perspective, these root causes are placed in the overall political and economic context of the health system with direct links to the governance function, the governance of the financing function and the governance of resource generation.

The role of the governance function is additionally crucial as a determinant for handling the shortage. To date, the USA has no formal guidance available on how to deal with shortages (regulation and legislation sub-function), which greatly affects the service delivery function because ultimately health care providers have to take individual rationing decisions to deal with the shortages (Phuong et al., 2019). The collection of relevant data (the information and intelligence sub-function of governance as well as governance of resource generation) on paediatric oncology drug shortages and their implications for patient outcomes is also not carried out routinely (FDA, 2019), negatively affecting the performance of the governance of resource generation sub-function and the service delivery function. Challenges with regard to manufacturing quality (resource generation) have also been cited as a further reason for medicine availability problems (Decamp et al., 2014).

In many countries, additional challenges such as payment mechanisms for medicines (financing function), inadequate management practices in procurement and the supply chain (governance of resource generation), health facilities' capacities to administer medicines (service delivery function), and medicine accessibility in remote areas (service delivery function and resource generation function) are further examples of the necessary interplay between the four health system functions (WHO, 2015; Ozawa et al., 2019; Phuong et al., 2019) as they impact on pharmaceutical availability. Contextual factors like political instabilities and limited financial resources are also known to additionally challenge sustainable medicine supply (Modisakeng et al., 2020).

The shortage of oncology drugs may adversely influence the performance of the service delivery function, specifically in terms of its ability to deliver high-quality care, because it can lead to changes in cancer treatment regimens, and to delays and interruptions in therapies, leading to increased mortality (FDA, 2019; Tanday, 2016) and inferior health outcomes (Unguru et al., 2019) (health system final goal of health improvement). A lack of medicines also complicates the clinical research needed to improve cancer patient care, with possible negative effects on health outcomes (Unguru et al., 2019). Pharmaceutical unavailability may also impact on the intermediate objective of access, in that health services cannot be adequately provided without adequate medicine supplies (Ozawa et al., 2019; Phuong et al., 2019).

Availability of affordable medicines can also influence financial protection, especially given that pharmaceutical expenses are a major contributor of OOP payments in many countries (Prinja et al., 2015; Thomson, Cylus & Evetovits, 2019). Growing recognition of the catastrophic pharmaceutical expenditures borne especially by low-income groups has led to their exemption from medicine co-payments in some countries (WHO, 2020) – a recognition of the effects of medicine availability on the health system goal of equity (Decamp et al., 2014).

In summary, the pharmaceutical sub-function of resource generation, with its assessment area of pharmaceutical availability, works principally through the service delivery function to impact on the intermediate system objectives of quality, safety, access and effectiveness, and further on the final goals of health improvement, financial protection and equity. Its role in health systems performance is therefore central, making clear the need for action in this area if health systems are to be developed and strengthened.

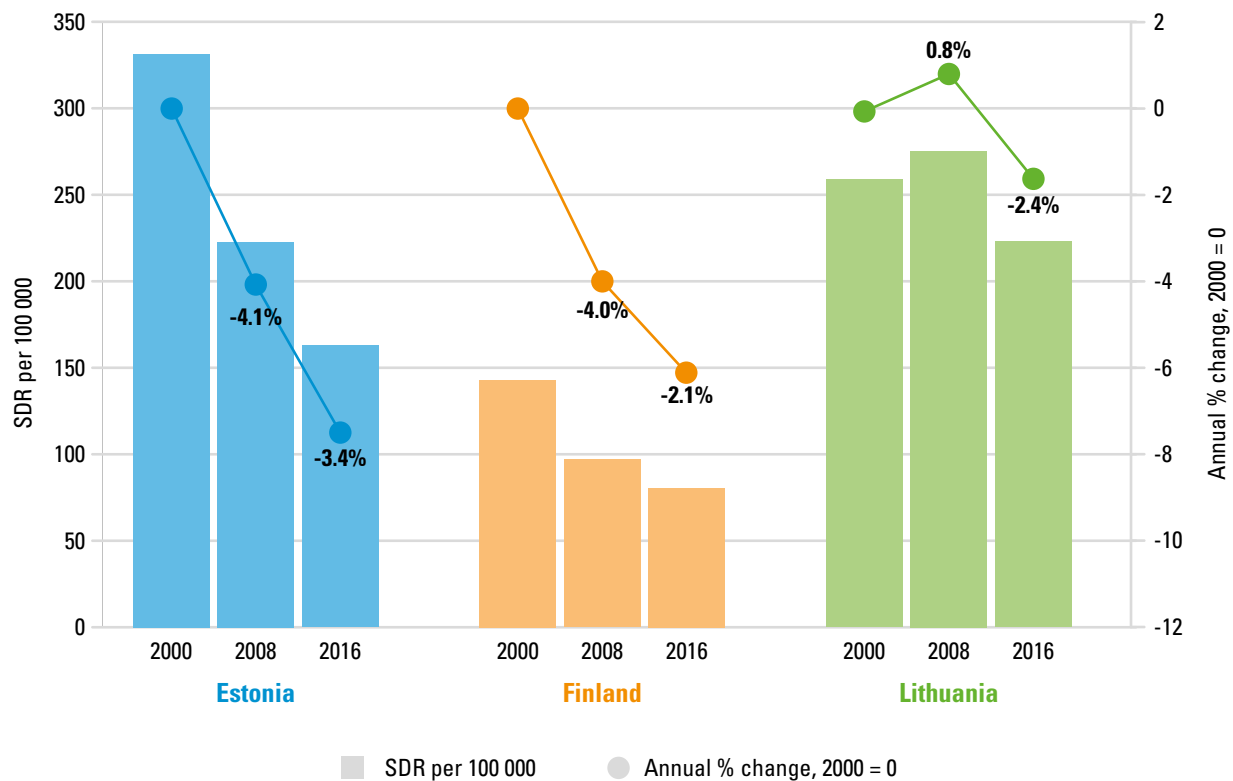
8.3.3 Case Study 3: Effectiveness

8.3.3.1 What is the health system performance issue?

Amenable mortality is a key indicator of health care effectiveness; it captures deaths that should not occur in the presence of timely and quality care. Amenable mortality varies greatly across countries, and so does its pace of improvement over time. High levels of amenable mortality and slow or no improvement point to barriers in access or weaknesses in quality of care.

This case study focuses on exploring the variation in amenable mortality in Estonia, Finland and Lithuania between 2000 and 2016 (Fig. 8.2). It illustrates how the framework can be used to determine to which health system functions and sub-functions amenable mortality can be linked, and which health system goals it affects.

Fig. 8.2 *Amenable mortality in Estonia, Finland and Lithuania 2000–2016*



Source: Authors' calculations from WHO Mortality Database (WHO, 2020b).

8.3.3.2 Where does this issue fit in the framework?

Amenable mortality is listed as an indicative measure of the service delivery function. It is a broad indicator, representing the functioning of both primary and specialist care. Amenable mortality is comprised of selected causes that sometimes vary depending on the list (the Nolte & McKee (2004) list has been used in this example) and is typically restricted to deaths in under 75s. Fig. 8.2 shows that in 2016 amenable mortality was much lower in Finland (80 per 100 000 population) than in Estonia (163 per 100 000) and Lithuania (223 per 100 000). These respective two- and three-fold differences raise questions about access to and effectiveness of health services in Estonia and Lithuania, but from the rate itself it is not immediately obvious where those weaknesses may be. As mentioned previously, amenable mortality will capture issues

with both access and quality. If we look at unmet need for health care, as an indicative measure for access, Lithuania performs better, as the levels of unmet need are lower, and service use is higher than in Estonia or Finland (European Commission, 2019a). This suggests that quality (rather than access) may be the area worth exploring in more detail in this case.

To get a clearer picture of how quality and effectiveness are contributing to overall amenable mortality, the indicator can be further disaggregated into specific causes. For example, high levels of mortality from the key non-communicable diseases that comprise a large share of amenable deaths (ischaemic heart disease, stroke, treatable cancers, chronic obstructive pulmonary disease, diabetes) can indicate poor disease detection and weak secondary prevention mechanisms, as well as the lack of effective specialist interventions. Therefore, although high total amenable mortality rates should be used as a trigger to look into service delivery, more specific causes, coupled with further indicators of effectiveness of primary and secondary care, can help to identify concrete problem areas. In the case of Lithuania, not only do the high rates in 2016 seem to suggest that more can be done to improve health care services, but the slow pace of change as well as the worsening of care between 2000 and 2008 suggest that quality of care for certain conditions needs more focussed attention. At the same time the example of Estonia, which started off in a worse position in 2000, suggests that quicker progress is possible.

8.3.3.3 How does the framework assist us in understanding the potential causes of and/or potential impact on health system performance?

As described in Chapter 7, service delivery is a product of the other three functions – resource generation, financing and governance.

Resource generation

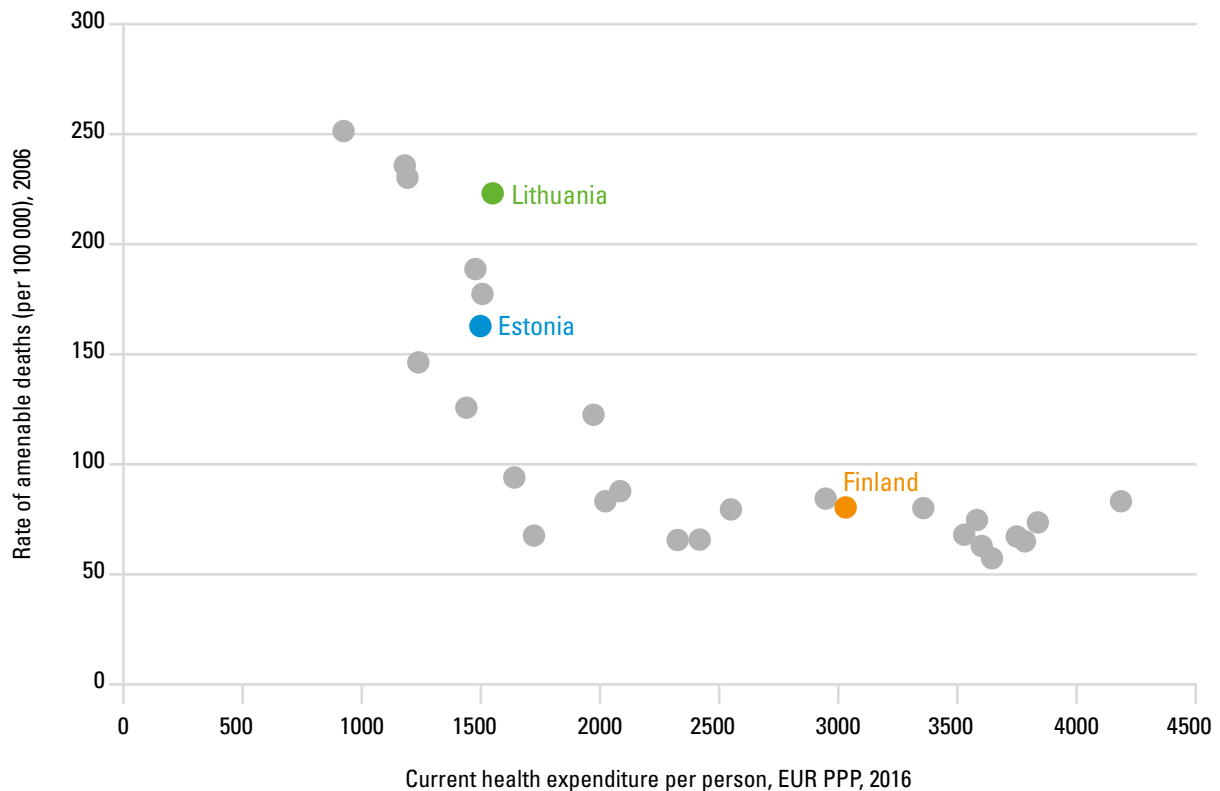
Having adequate levels of human and physical resources enables services to be provided. Effectiveness notwithstanding, this area may be of particular relevance for Estonia, where access to care due to waiting times is known to be an issue (European Commission, 2019b).

Financing

Financing, particularly the lower level of health expenditure, is associated with higher amenable mortality. Fig. 8.3 shows that countries with lower spending, such as Estonia

and Lithuania, have higher amenable mortality rates. At the same time, the levels of current expenditure on health per person in Estonia and Lithuania are similar, but Estonia achieves better outcomes. Although this is a very high-level indicator, it suggests that service provision in Lithuania could be more efficient, relating to one of the other service delivery goals, health service efficiency.

Fig. 8.3 Amenable mortality versus current health expenditure, EU-28



Source: Authors' calculations using WHO Mortality Database (WHO, 2020b) and Eurostat (2020).

Note: PPP, purchasing power parity.

Governance

Finally, governance plays a crucial steering role in how well the health system is set up to deliver quality health services. For example, in the case of Lithuania, crucial health service restructuring reform, which started in the early 2000s and aimed at strengthening primary care and achieving more efficient use of resources, has stalled for more than a decade (Karanikolos, Murauskiene & van Ginneken). In Estonia, impressive progress was achieved, but the National Health Plan 2009–2020 lacked effective strategic planning measures, which are necessary to ensure sufficient resources in the system. A more detailed, country-specific assessment tracing these links would help to better understand whether or not weaknesses in governance, spilling over to resource generation and financing, lead to high rates of amenable mortality in these countries.

In the framework, amenable mortality is an indicator of effectiveness of service delivery, which in itself is an intermediate health system goal. As discussed above, it is also an indicator of access to services. We have also mentioned that it can be used to assess efficiency, both in terms of health services and in a larger, health system sense. The distribution across different population groups or geographies would be an indicator of equity.

Among the key final goals, amenable mortality is closely linked to health improvement as reduction in amenable deaths directly contributes to increase in life expectancy. It is, however, only part of health improvement and it does not fully take into account morbidity, healthy ageing or presence of multiple risk factors and socioeconomic determinants of health. It can also reflect on people-centredness and financial protection, as poor performance in either may be a result of barriers to accessing care.

8.3.4 Case Study 4: Financial protection

8.3.4.1 What is the health system performance issue?

Financial protection captures the extent to which individuals are protected from the financial risks of ill health. Understanding the causes of poor financial protection and the policies that are best able to address it is crucial for countries seeking to progress towards UHC. This case study focuses on the experience of Latvia during the 2008–2009 financial crisis to illustrate how health policy can affect financial protection.

In order to think of how we measure financial protection, we can start by considering the types of payments that households make for health care. Out-of-pocket payments are either direct payments by households to providers to cover the full costs of care, or payments at the point-of-use that cover some portion of the cost of care (user charges or co-payments). All health systems use OOP payments to some extent to finance health. For those people who can afford it, paying some amount for health care OOP may not be a major problem and is unlikely to lead to financial hardship unless expenditure levels are extremely high. However, for other people, paying for health care OOP – even small amounts – can cause significant financial hardship or become a barrier to the use of health services altogether.

To monitor the extent to which OOP payments lead to financial hardship, analysts use indicators of financial protection. The two most common are catastrophic health expenditure incidence and impoverishing health expenditure incidence. Catastrophic

health expenditure incidence reflects the percentage of households who spend above some percentage of their available resources on health care, with the assumption that too much spending on health crowds out spending on other basic needs like food or housing. Impoverishing health expenditure incidence reflects the percentage of households who were pushed below a poverty line after spending OOP on health (Cylus, Thomson & Evetovits, 2018).

8.3.4.2 Where does this issue fit in the framework?

In terms of the HSPA Framework for UHC, financial protection is a final goal of the health system. Indeed, it is one of the main overall measures used to monitor progress towards UHC. It is particularly useful because it encompasses all aspects of the health system, including the health system functions (governance, financing, resources, service delivery) as well as the intermediate objectives and final goals. It also reflects non-health system characteristics, such as poverty rates, unemployment, income and consumption expenditure, since well-off households are typically better able to afford health care costs than poor households.

Financial protection is a product of many health system and non-health system characteristics, and as such it can be used as a starting point in the HSPA Framework for UHC; working backwards from the financial protection goal, to understand how health system function performance affects the share of households who experience financial hardship. Similarly, one can work forwards from a health system function where, for example, reforms or structural changes may be underway, to better comprehend the effects on financial protection.

We can consider the case of Latvia to see how changes in the health system ultimately affect the final outcome of financial protection. Financial protection in Latvia was not very good leading up to the 2008/2009 financial crisis (Taube, Vaskis & Nesterenko, 2018) compared with other European Union countries. Using the WHO European Regional Office methodology to measure financial protection, 10% of households experienced catastrophic health spending in 2008; 2% of Latvian households were already considered poor but still spending OOP, and therefore further impoverished by OOP spending. One of the reasons for such high catastrophic spending levels at the time were the insufficient mechanisms in place to protect poor households seeking care from incurring OOP payments that they could not afford. However, even though GDP in 2009 fell by 18% and unemployment reached 20% by 2010, financial protection in Latvia

did not worsen as one might have expected. Why? By using the HSPA Framework for UHC we can trace the performance links to financial protection to better understand the functions that may influence it.

8.3.4.3 How does the framework assist us in understanding the potential causes of and/or potential impact on health system performance?

As mentioned, financial protection is influenced by all of the functions, although health financing is perhaps the most obvious linkage. For example, the revenue raising sub-function interacts with the normative governance decisions related to financing about how much of the cost of health care is covered. In countries that are unable to generate sufficient revenues for the health system, choices about who to cover, what to cover and how much of the cost to cover may result in coverage gaps, contributing to poor financial protection as people who need care are forced to pay for it OOP.

In Latvia during the 2008–2009 financial crisis, despite the poor economic situation, financial protection did not deteriorate between 2008 and 2009. One major reason is the 2009 introduction of co-payment exemptions and reductions for very poor households through the Social Safety Net. This was possible despite the difficult economic and fiscal situation because of external funding provided to the Government through 2012 to expand coverage.

The data show that the poorest households were the ones whose situation did not worsen as the economy collapsed. Although total catastrophic expenditure incidence increased slightly in 2009 to 10.1% of households, the share of households that were further impoverished fell slightly, even as the share of households below the poverty line (those unable to meet their basic needs) increased from 6.2% of households to 7.2%. Taken together, this suggests that that coverage policy decisions (part of the governance of financing sub-function) have an important effect on financial protection.

Additionally, it is worth noting that most of the OOP spending by catastrophic spenders in Latvia is on medicines. To understand how spending on medicines leads to financial hardship (and what can be done about it) requires an examination of the financing, resource generation and service delivery functions. Financing is relevant because the approach to co-payments has an effect on the extent to which households are exposed to medicine costs, while service delivery also affects financial protection through prescribing patterns and resource generation on the availability of low-cost medicines. Either

way, exempting very poor households from medicine user charges provides significant protection, especially at a time when medicine prices were otherwise increasing.

Financial protection measures only reflect spending by people who use health services. However, there are some households who are unable to access health services because the prospect of OOP payments is a barrier to use. These households may not experience catastrophic health spending but rather, they have unmet care needs. Alternatively, some households may experience both catastrophic spending and access barriers, for example, if they are able to spend on some services but cannot afford all of the care that they need.

Looking again at the Latvia case study, between 2008 and 2009, self-reported unmet need for health care was unchanged according to European Union Statistics on Income and Living Conditions data, even though declines in economic activity often coincide with increases in unmet need. This suggests that the policy intervention to provide free access to care for very poor households mitigated some of the effects of the financial crisis on financial protection and unmet need that otherwise may have occurred.

8.3.5 Case Study 5: Resilience

8.3.5.1 What is the health system performance issue?

Health system resilience is defined as the ability to prepare for, manage (absorb, adapt and transform) and learn from shocks, whereby a shock is defined as a sudden and extreme change which impacts on a health system. (Thomas et al., 2020). Shocks can be varied and wide ranging, encompassing events including extreme weather, financial crisis and infectious disease outbreaks, such as the COVID-19 pandemic.

This case study focuses on the example of the COVID-19 pandemic and illustrates how the framework can be used to determine how resilient a health system has been in the face of this shock.

8.3.5.2 Where does this issue fit in the framework?

In terms of the HSPA Framework for UHC, a shock represents a sudden and extreme change to the health system context (Chapter 3). Health system resilience therefore has

to do with how well the key health system functions perform in the face of a shock, and the extent to which the system can continue to meet its intermediate and final objectives.

The COVID-19 pandemic has been among the biggest shocks experienced by health systems globally and has affected multiple parts of the system at once, including all functions – governance, financing, resource generation and service delivery – and the final outcomes. In terms of health system resilience to COVID-19, this framework can be used to understand the impact of the crisis using assessment areas that are at the core of a function’s performance; the functions, in turn, link to the outcomes. Given the health system’s complexity, there are multiple areas (all these linkages) where the COVID-19 pandemic may have impacted the performance of the functions, and/or outcomes, and hence impacted resilience.

8.3.5.3 How does the framework assist us in understanding the potential causes of and/or potential impact on health system performance?

For each function, the HSPA Framework for UHC defines sub-functions and assessment areas, the latter serve to evaluate the performance of the sub-functions. In order to examine the resilience of each of the functions to an external shock, we can consider each of the sub-functions in turn, specifically examining where the shock may introduce vulnerabilities. A resilient system will have a way to cope with these vulnerabilities so that it can absorb the shock.

The COVID-19 pandemic affected all four health system functions. Table 8.1 outlines each of the functions and sub-functions along with selected assessment areas for each. The final column outlines examples of policy responses to COVID-19 in areas where the pandemic has challenged performance for the specific assessment areas highlighted.

Using the framework can help to measure the health systems ability to withstand a shock by examining the attainment of the final goals before and after the shock. Table 8.2 outlines a series of examples that illustrate how they may be influenced by the COVID-19 pandemic, and some indicative measures that could be used to monitor these.

Table 8.1 *COVID-19 shock as applied to the health system functions*

Function	Sub-function	Selected assessment areas	Examples of COVID-19 response strategies
Governance	Policy and vision	Existence of multisectoral collaboration	Ability to collaborate between different government sectors to ensure consistent policy implementation (for example, in relation to social distancing, isolation and support, supply chains)
	Stakeholder voice	Stakeholder participation in policy-making	Existence of mechanisms for key stakeholders to contribute to response planning [including representatives from different administrative levels (for example, regions and municipalities; professions (GPs, nurses, long-term care, patients groups)]
	Information and intelligence	Collection of relevant data	Existence of surveillance mechanisms to alert health systems to the epidemiological changes; monitoring of impact on health and health care resources and services; linkages with other information systems
	Legislation and regulation	Capacity to legislate	Mechanisms exist for governments to be able to act fast through implementing time-bound emergency legislation (for example, on lockdowns, purchasing, regulating standards)
Resource generation	Health workforce	Distribution/mix of workforce	Mechanisms are in place to reassign health care professionals to new roles/places as needed
	Infrastructure and medical equipment	Availability of infrastructure and medical equipment	There is enough availability of ICU beds to accommodate those in need
	Pharmaceuticals and other consumables	Availability of pharmaceuticals and consumables	There is enough PPE to protect front-line workers
	Governance of resource generation	Planning of resources	There is planning in place to ensure vaccine availability and roll out
Financing	Revenue collection	Stable funds	Countries ensure monetary resources are made available quickly and where needed to ensure funds remain stable and adequate during the crisis
	Pooling	Equitable pooling	Resources for COVID care are made available to all with need, across different pools
	Purchasing	Efficient purchasing	PPE is purchased at competitive prices
		Allocation according to need	Testing is allocated according to those in need and not those most able to pay
	Governance of financing	Comprehensive coverage	People in the system have comprehensive coverage that protects them including coverage for sick leave or necessary shielding

Function	Sub-function	Selected assessment areas	Examples of COVID-19 response strategies
Service delivery	Public health	Effectiveness	Effective test-trace-isolate-support (linkage to collaboration, for example, economic and social support)
	Primary care	Access	Ability to maintain services, such as prevention, vaccination, care for non-communicable diseases)
	Specialized care	Safety	Ensuring safety of hospital patients by introducing additional infection control protocols / mechanisms (for example, separating COVID-19 from non-COVID-19 patients)
	Governance of service delivery	Decision-making authority	Ability for local / regional authorities to respond to local health care challenges according to their competencies (for example, have local coordinator, organize services, including COVID-19 vaccination programme)

Source: Authors' compilation and Sagan et al (2021).

Note: COVID-19, coronavirus disease 2019; ICU, intensive care unit; PPE, personal protective equipment.

8.4 Conclusions

This chapter introduces the HSPA Framework for UHC and illustrates its application through a series of case studies. The aim of the framework is to serve as a conceptual aid that policy-makers can use when attempting to identify areas for health system improvement. As demonstrated through the case studies, the framework is designed so that the starting point can be any health system indicator or assessment area, derived from an HSA (which typically look at the functions) or an HSPA (which typically look at the outcomes). The strength of the framework is that it links these two separate areas together.

While the framework aims to provide policy-makers with some insights as to potential sources of performance (of the function(s) and/or the system) variation, it can only be used as a starting point and will not provide definitive answers. Further work is required for policy-makers to establish which of these sources are indeed causing performance variation. Still the framework can help narrow down the areas to examine to identify areas of improvement.

Table 8.2 *Resilience of health system goals to COVID-19*

Part of health system	Specific goal/function	Examples in which affected by COVID-19	Indicative measures
Final goals	Health improvement	Worse health status of those contracting the virus	Cumulative COVID-19 cases and deaths Excess mortality
		Worse health of those whose care was disrupted due to the viruses effect on service delivery	
		Better health of those who did not contract illness due to preventive measures (for example, less seasonal flu, fewer traffic accidents)	
	People centredness	Limited choice of treatments given restrictions and lack of capacity	Patient experience questionnaires
		More constraints on having family support present at medical settings where care is delivered	Unmet health care need
	Financial protection	New health care costs that may be out of pocket (COVID-19 tests, private services to make up for suspended services)	Catastrophic expenditures
Unemployment, leading to potential loss of health coverage		Level of OOP payments	
Health system efficiency	The health system is investing in more resources to combat the pandemic while trying to maintain outcomes at the same level or improve them	Amount of investment necessary to maintain outcomes	
Equity of the health system	People of different socioeconomic and demographic characteristics are more likely to be affected by COVID-19	Cumulative COVID-19 cases and deaths by socioeconomic status, and demographic groups, or regions Excess mortality by socioeconomic status and demographic groups; or regions	

Source: Authors' compilation.

Note: COVID-19, coronavirus disease 2019; OOP, out-of-pocket.

References

- Adams O et al. (2003). Provision of personal and non-personal health services: Proposal for monitoring. In: Murray C, Evans D, eds. *Health systems performance assessment. Debates, methods and empiricism*. Geneva, World Health Organization.
- Baker M et al. (2000). Household crowding a major risk factor for epidemic meningococcal disease in Auckland children. *The Pediatric Infectious Disease Journal*, 19(10):983–990.

- Benfer EA et al. (2014). Eviction, health inequity, and the spread of covid-19: housing policy as a primary pandemic mitigation strategy. *Journal of Urban Health*, 2021:1–12.
- Bennet S, Peters DH (2015). Assessing national health systems: why and how. *Health Systems Reform*, 1:9–17 doi 10.1808/23288604.2014.997197).
- Bentley R, Baker E, Aitken Z (2019). The ‘double precarity’ of employment insecurity and unaffordable housing and its impact on mental health. *Social Science & Medicine*, 225:9–16.
- Black N, Gruen R (2005). *Understanding health services*. Maidenhead, Open University Press.
- Cylus J, Thomson S, Evetovits T (2018). Catastrophic health spending in Europe: equity and policy implications of different calculation methods. *Bulletin of the World Health Organization*, 96(9):599–609.
- Decamp M et al. & Working Group on Chemotherapy Drug Shortages in Pediatric Oncology (2014). Chemotherapy drug shortages in pediatric oncology: a consensus statement. *Pediatrics*, 133(3):e716–e724.
- EAHP (2018). EAHP’s 2018 Survey on Medicines Shortages to improve patient outcomes. November 2018. Brussels, European Association of Hospital Pharmacists.
- European Commission (2019a). State of Health in the EU – Lithuania. Country health profile 2019. (https://ec.europa.eu/health/sites/health/files/state/docs/2019_chp_lt_english.pdf, accessed 21 July 2021).
- European Commission (2019b). State of Health in the EU – Estonia. Country health profile 2019. (https://ec.europa.eu/health/sites/health/files/state/docs/2019_chp_et_english.pdf, accessed 21 July 2021).
- Eurostat (2020). Statistical database. (<https://ec.europa.eu/eurostat/data/database>, accessed 1 March 2021).
- Food and Drugs Administration. Drug Shortages: Root Causes and Potential Solution. (<https://www.fda.gov/media/132058/download>, accessed 19 April 2021).
- Hosseini R et al. (2018). Factors associated with the incidence of oncology drugs shortages in the United States (2001–2017). *Value Health*, 21:S372.
- Howden-Chapman P et al. (2007). Effect of insulating existing houses on health inequality: cluster randomised study in the community. *BMJ*, 334(7591):460.
- Institute of Medicine (2001). *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, D.C., National Academies Press.
- Jackson G et al. (2011). Reduced acute hospitalisation with the healthy housing programme. *Journal of Epidemiology & Community Health*, 65(7):588–593.

- Karanikolos M, Murauskiene L, van Ginneken E (2013). Pursuing health care efficiency in Lithuania. (<https://apps.who.int/iris/bitstream/handle/10665/333083/Eurohealth-19-3-44-47-eng.pdf>, accessed 21 July 2021).
- Levesque JF, Harris MF, Russell G (2013). Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *International Journal of Equity in Health*, 12:18.
- Martin P et al. (2019). Adults with housing insecurity have worse access to primary and preventive care. *The Journal of the American Board of Family Medicine*, 32(4):521–530.
- Ministry of Health/Manatū Hauora (2020). Healthy Homes Initiative. 2020 (<https://www.health.govt.nz/our-work/preventative-health-wellness/healthy-homes-initiative>, accessed 21 July 2021).
- Modisakeng C et al. (2020). Medicine shortages and challenges with the procurement process among public sector hospitals in South Africa; findings and implications. *BMC Health Service Research*, 20:234.
- Murray CJL, Frenk J (2000) A framework for assessing the performance of health systems. *Bulletin of the World Health Organization*, 78(6):717–730.
- Nolte E, McKee M (2004). (<https://www.nuffieldtrust.org.uk/research/does-healthcare-save-lives-avoidable-mortality-revisited>, accessed 21 July 2021).
- Nolte E (2017). Evidence supporting integrated care. In: Amelung V et al.eds. *Handbook of Integrated Care*. Cham, Springer.
- Ozawa S et al. (2019). Access to medicines through health systems in low- and middle-income countries. *Health Policy and Planning*, 34(Suppl. _3).
- Phuong JM et al. (2019). The impacts of medication shortages on patient outcomes: A scoping review. *PloS one*, 14(5):e0215837.
- Preval N et al. (2017). Impact of improved insulation and heating on mortality risk of older cohort members with prior cardiovascular or respiratory hospitalisations. *BMJ Open*, 7(11).
- Prinja S (2015). Availability of medicines in public sector health facilities of two North Indian States. *BMC Pharmacology and Toxicology*, 16:43
- Sagan A, Webb E, Azzopardi-Muscat N, de la Mata I, McKee M, Figueras J, editors. Health systems resilience during COVID-19: Lessons for building back better (2021). Copenhagen: WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies. (Health Policy Series, No. 56.)
- von Seidlein L et al. (2021). Crowding has consequences: prevention and management of COVID-19 in informal urban settlements. *Building and Environment*, 188:107472.
- Tanday S (2016) Framework for tackling paediatric chemotherapy drug shortages. *The*

- Lancet Oncology*, 17(3):e93,
- Taube M, Vaskis E, Nesterenko O (2018). Can people afford to pay for health care? Latvia. (https://www.euro.who.int/__data/assets/pdf_file/0008/373580/Can-people-afford-to-payLatvia-WHO-FP-006.pdf, accessed 15 April 2021).
- Thomas S et al. (2020). *Strengthening health systems resilience*. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Thomson S, Cylus J, Tamas E (2019). *Can people afford to pay for health care? New evidence on financial protection*. 1st edn. Copenhagen, WHO Regional Office for Europe on behalf of the European Observatory on Health Systems and Policies.
- Unguru Y et al. (2019). Chemotherapy and supportive care agents as essential medicines for children with cancer. *JAMA Pediatrics*, 173(5):477–484. Erratum in: *JAMA Pediatrics* 2019;173(5):502.
- Witter, S et al. (2019). *Evidence review of what works for health systems strengthening, where and when?* Technical Report. DFID. (<https://archive.lstmed.ac.uk/12455/>, accessed 15 April 2021).
- WHO (1998). Health promotion glossary. (<https://www.who.int/healthpromotion/about/HPR%20Glossary%201998.pdf>, accessed 20 August 2020).
- WHO (2000) *World Health Report 2000. Health systems: improving performance*. Geneva, World Health Organization.
- WHO (2006). 69th World Health Assembly Framework on integrated people-centred health services. (https://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_39-en.pdf, accessed 15 April 2021).
- WHO (2018). WHO Housing and Health Guidelines. (<http://apps.who.int/iris/bitstream/handle/10665/276001/9789241550376-eng.pdf>, accessed 9 September 2021)
- WHO (2020a). (<https://www.euro.who.int/en/health-topics/Health-systems/health-systems-financing/news/news/2020/2/poland-can-strengthen-financial-protection-by-exempting-poor-people-from-copayments-for-medicines>, accessed 15 April 2021).
- WHO (2020b). Mortality database (<https://www.who.int/data/data-collection-tools/who-mortality-database>, accessed 1 March 2021).
- WHO Executive Board (2015). 138th session. Addressing the global shortage of medicines, and the safety and accessibility of children's medication. Geneva, World Health Organization, 2015. (http://apps.who.int/iris/bitstream/10665/250709/1/B138_41-en.pdf, accessed 15 April 2021).
- Zar HJ et al. (2020). Challenges of COVID-19 in children in low-and middle-income countries. *Paediatric Respiratory Reviews*, 35:70–74.

Conclusion

Dheepa Rajan, Irene Papanicolas, Marina Karanikolos, Josep Figueras

9.1 Introduction

An exercise in bringing together the entire health system for assessment is a venture that inevitably brings to the fore fundamental questions regarding the system's boundaries, component elements and goals. The HSPA Framework for UHC represents a comprehensive attempt to address those questions with the underlying understanding that, in many cases, there is no right or wrong answer. We aim to find the optimal solution given the perspective taken, available evidence and expert appraisal.

With that in mind, this volume begins by acknowledging the confusion in terminology in the areas of HSA and HSPA, going beyond just words but also reflecting differing assessment objectives and types of information collected for analysis (Chapter 1). The HSPA Framework for UHC is grounded in the premise that any whole-of-sector exercise should collect information on, and examine the performance of, both the functions of the health system as well as of the system itself. To date, assessments tended to concentrate on one or the other, with HSA more often used to collect information on and evaluate the health systems functions, and HSPA used to examine the performance of the health system, through the measurement and assessment of its final goals. Our framework, introduced throughout this volume, aims to bridge the HSA and HSPA paradigms; based on existing knowledge, tools and evidence (Chapter 2) this volume aims to coherently link the performance of the health system functions to the attainment of intermediate system objectives and final goals (Chapter 3).

To achieve this aim, a differentiation is made between the performance of the individual health system functions of governance (Chapter 4), resource generation (Chapter 5), financing (Chapter 6) and service delivery (Chapter 7), and the performance of the health system. Although there are some direct links between the activities within the functions and the attainment of health system outcomes, which the framework

highlights, most are indirect. However, there is a broad consensus that high-performing functions will lead to high-performing health systems. This is the starting point of the HSPA Framework for UHC. Each of the health system function chapters outlines the purpose of the function, the sub-functions that enable it to carry out the key activities necessary to fulfil its purpose and the set of assessment areas and proposed indicative measures to evaluate how well it performs.

A health system bottleneck detected within the framework, be it within a sub-function, an assessment area, an intermediate objective, or a final goal, can be traced backwards to explore possible origins (areas to be targeted for improvement), or traced forwards to understand potential influences on health system performance (Chapter 8).

The HSPA Framework for UHC is meant to serve as a starting point for HSPA. Although it may not pinpoint the specific origins of poor performance or identify the exact impact that an underperforming function will have on a particular health system outcome, it can serve as a starting point for in-depth analysis. Importantly, the framework has been designed with existing HSA and HSPA tools in mind, so that performance indicators from other sources that are already collected can be easily mapped onto it. In this concluding chapter, we provide the reader with a concise overview of the principal elements of the HSPA Framework for UHC and outline further directions of work.

9.2 The four health system functions: a recap

9.2.1 Governance

The governance function is strategically placed at the very left of the framework as the enabler for all other health system functions, yet also exists within each of the functions. The HSPA Framework for UHC outlines four sub-functions: policy and vision, stakeholder voice, information and intelligence, and legislation and regulation for the assessment of the overall governance function.

9.2.1.1 Policy & vision

Policy and vision focuses on the capability and resourced capacity needed to provide a strategic vision for the health sector, which is clearly articulated in a single document, a set of policies, laws and/or guidelines to which governments can be held accountable. At the core of shaping health policy and providing a vision for the health sector is

intersectoral collaboration; hence, this sub-function's assessment areas are, besides the “existence of a policy in written in traceable form” and “quality of strategic direction”, also “existence of...” and “quality of multisectoral collaboration”.

9.2.1.2 Stakeholder voice

The stakeholder voice sub-function revolves around the real possibility for key stakeholders – such as academia, provider associations, civil society organizations, vulnerable and marginalized communities, the public – to contribute meaningfully to health policy decisions (assessment area “stakeholder participation in policy-making”). This sub-function therefore requires solid government capacity to initiate, steer and sustain long-term participatory processes for purposes of capturing stakeholder voice as a part of the regular health sector modus operandi (assessment area “stakeholder participation as a government priority”).

9.2.1.3 Information and intelligence

The information and intelligence sub-function is essentially about data governance. It involves the managerial culture and political will needed to support an environment where evidence generation and use are the norm, where changes within the health system and their effects on systems performance are constantly monitored, learned from and acted upon (assessment area “collection of relevant data”). A well-functioning information system that is accessible for a wide range of health system stakeholders is therefore crucial for data-driven decision-making (assessment area “evidence-driven decision-making”).

9.2.1.4 Legislation and regulation

Legislation and regulation are powerful levers for the achievement of health system goals. For example, rights-based health laws or regulatory frameworks for private sector service provision are quintessential illustrations of what this sub-function entails; both can have a profound enabling effect on the performance of further health system functions, and subsequently on health system outcomes. Assessment areas here are “capacity to legislate” and “ensuring compliance with legislation”.

The framework differentiates overall health system governance from governance actions that are specifically linked to the governance of the other health system functions. The

governance of financing includes specific governance decision relating to financing activities, such as public financial management and decisions of policy around benefit package coverage. The governance of resource generation would include activities such as health workforce planning and management of procurement systems. Governance of service delivery relates to the degree of decentralization in sub-national decision-making, service integration and quality assurance mechanisms. When assessing the governance function, both overall system-wide governance, as well as the governance issues relating to the other three functions: financing, resource generation and service delivery, need to be examined to comprehend whether the governance function is performing well and enabling the system to perform well.

9.2.2 *Resource generation*

Resource generation is the function that ensures a health system has all the inputs it needs to operate. These inputs include health workers, medical devices, medical equipment, infrastructure, pharmaceuticals, vaccines, consumables and medical supplies. This function describes how inputs are produced, procured, made available or maintained nationally. The distribution of those resources, however, would be reflected in the service delivery function.

Resource generation is placed in the HSPA Framework for UHC between governance and service delivery, indicating that the governance function enables the resource generation function, and resource generation feeds into, and enables, the service delivery function. Ultimately, the influence of resource generation on the intermediate and final health system goals works through service delivery, that is, its impacts on health system performance hinges on providing the right resources at the right time for use within the service delivery function.

That crucial role is reflected in the resource generation sub-functions, and their assessment areas. The three sub-functions of health workforce, infrastructure and medical equipment, and pharmaceuticals and other consumables have similar assessment areas: availability, distribution/mix, and for the first two sub-functions, we add a measure of upkeep – this is education for the health workforce and maintenance for infrastructure and medical equipment. As pharmaceuticals and consumables are disposable, an assessment area around upkeep is not needed. Availability and distribution/mix are essentially about resources that are made available at the right place and right time, thereby enabling the service delivery function. A key point of intersection between

governance and resource generation is the governance of resource generation as mentioned previously.

9.2.3 Financing

Health financing constitutes a simple but integral function of a health system: raising and spending money on health care. It is broken down to three sub-functions (revenue raising, pooling resources, and purchasing goods and services) which, together, describe the flow of monetary resources through the health system.

A revenue raising sub-function that performs well should ensure that the health system has sufficient resources to meet health care needs; that those resources are stable, predictable and able to cope with shocks; and that they are collected in an equitable manner in order to ensure the burden of financing does not fall on the poor or sick.

The pooling function is largely intended to ensure that resources are distributed in an equitable way and also to enable efficiency through economies of scale, hence equity of pooling and administrative efficiency are the key assessment areas.

Purchasing is concerned with getting resources to those who need them most. It can have a major impact on quality of care and, ultimately, health outcomes. Assessment areas for purchasing are efficient purchasing and allocation according to need.

Financing is pivotal to the performance of a health system and to achieving UHC. Well-executed revenue raising, pooling and purchasing are crucial to ensure that resources are available to those who need health care, and to ensure that the health system obtains value for money. Governance of financing – normative decisions related to coverage policy, as well as structural factors related to public financial management, have a significant impact on the extent to which financing is able to deliver health system objectives.

9.2.4 Service delivery

Delivering services is a core function of health systems and this is influenced by and influences governance, financing and resource generation. Service delivery is a product of the governance, financing and resource generation functions.

The boundaries between service delivery sub-functions are often poorly defined because their scope and breadth is determined, to a large extent, by the specific regional and country contexts within which these functions are organized and financed. We distinguish the three sub-functions of public health, primary care and specialized care, as well as the function-related governance mechanisms guiding the planning and operation of services.

Service delivery assessment areas in effect are intermediate objectives of the health system, and apply to each of the service delivery sub-functions. We distinguish access, effectiveness, safety, user experience, efficiency and equity of service delivery as assessment areas. It is those objectives that ultimately feed into the health system's final goals and determine how well the entire system functions.

9.3 Health system performance: intermediate objectives and final goals

The performance of the health system is often conceptualized as the attainment of key health system goals (Chapter 2). In this volume, and in the HSPA Framework for UHC, we follow this approach and identify five health system goals (Table 9.1). The goals highlighted represent commonly agreed health system objectives as signalled by previous health system frameworks.

Table 9.1 *Five health system goals*

Health system goal	Definition
Health improvement	Health improvement refers to the improvement of the health of the population. Where health refers to health at different parts of the life cycle, morbidity and premature mortality
People centredness	Approach to care that consciously adopts the perspectives of individuals, carers, families and communities as participants in, and beneficiaries of, trusted health systems that are organized around the comprehensive needs of people rather than individual diseases, and respects social preferences
Financial protection	Safeguarding people against the financial hardship associated with paying for health services
Efficiency of the health system	Maximizing the final health system objectives (health improvement, people centeredness and financial protection) given the resources available.
Equity of the health system	The distribution of health improvement and people centeredness across the population as a whole, as well as the level of financial protection.

Source: Authors' compilation.

Instrumental to the attainment of these goals is the attainment of intermediate objectives, which are also the assessment areas of the service delivery function: namely quality, access, user experience, health service efficiency and health service equity.

9.4 Conclusions and future directions

While the framework outlines the linkages between function performance and health system performance, there are few clear direct links. In most cases, and as mentioned throughout this volume, attainment of the final health system goals will be influenced by the performance of many different parts of the health system and functions. Noting this, the best way to use this framework is not to identify the one single fix that can be tweaked in a sub-function to improve one of the health system outcomes, but to use it as a way to more generally assess the performance of the different components of the system. Where issues are found, the framework can help users to map out how these might influence other parts of the system and identify potential knock-on effects.

As a next step in developing the tools to enable health systems performance assessment it will be important to test the framework across health systems. It is important to see how well it can be used to identify areas for further investigation using existing information. Yet, even with the framework to help illustrate the ways in which the functions, intermediate objectives and final goals of the health system come together, we are limited in assessment efforts by the amount and quality of health systems data available. To further inform performance comparisons moving forward, more work needs to be done to routinely collect necessary information to better assess the health system functions and health system performance. As part of these efforts, the HSPA Framework for UHC can help to identify where there are particular data gaps where further efforts should be prioritized.

Ensuring a robust and resilient health system involves policy actions which need to be implemented based on the best available evidence. This requires health systems to be monitored regularly to build on their strengths and to overcome any apparent shortcomings.

In order to assist in that process, this volume, a collaboration between the World Health Organization and the European Observatory on Health Systems and Policies, presents a new framework to support monitoring of health system performance, with a focus on detailed conceptual links between health system functions and overall system goals. This HSPA framework for Universal Health Coverage thus represents a comprehensive attempt to address fundamental questions regarding regular assessment of health systems, including health system boundaries, component elements and outcomes.

In this book, each of the health system function chapters outlines the purpose of the function, the sub-functions that enable it to carry out the key activities necessary to fulfil its purpose, as well as the assessment areas and proposed indicative measures to evaluate how well a system performs. The framework will thus assist policy-makers in understanding possible origins or impact of poor performance on a particular health system outcome, triggering more in-depth analysis.

Health Policy Series No. 57

www.eurohealthobservatory.who.int

www.who.int

