



World Health
Organization

European Region

Tracking primary health-care spending in selected countries

System of Health Accounts
2011 methodology

Tracking health spending

WHO Barcelona Office for Health Systems Financing

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Abstract

A health system rooted in primary health care (PHC) is at the core of the Universal Health Care (UHC) agenda. While countries have committed to strengthening PHC, a key barrier to further investment is a lack of reliable information on how much countries already spend. One reason for this dearth of evidence is that countries, as well as international organizations, use a range of definitions of PHC. Without clarity on the definitional boundaries of PHC, it is difficult to accurately estimate PHC spending levels, and any estimates generated may not be comparable across countries. Additionally, ambiguity over the goods and services that are included in PHC can make it difficult to attribute health system outputs or outcomes to expenditures, impeding efforts to monitor PHC performance.

In this study we estimate PHC spending for four countries -- Georgia, Kyrgyzstan, North Macedonia and Spain – using a range of internationally-recognized and country-specific definitions of PHC. We make use of the System of Health Accounts (SHA) 2011 framework, used internationally to track health expenditures, to develop expenditure estimates that are consistent with each PHC definition. We find substantial variability in how much countries purport to spend on PHC depending on the definition of PHC used. We conclude that in addition to developing estimates of PHC spending based on a common global definition, countries with sufficient expenditure tracking capacity can make use of the SHA 2011 framework to develop their own country-specific, policy relevant estimates of spending based on their own accepted definitions of PHC.

Corrigendum

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While countries aim for the common goal of universal health coverage (UHC), many shared challenges (including resource limitations and competing priorities). Addressing these challenges require evidence informed decisions on rational use of scarce resources and optimal resource allocations and reallocations. Investing in primary health care (PHC) improves equity in access to needed services and increases system efficiency with a limited resource to meet increasing and changing health needs. The System of Health Accounts (SHA) 2011 framework facilitates tracking of spending, including PHC related spending, but this cannot be accomplished without clearly defining PHC boundaries. To address this gap, WHO proposed a global measure of PHC to benchmark and track PHC spending globally, using the SHA 2011 framework. This is important descriptive measure which should be used for international comparison and may serve as PHC spending benchmarks for individual countries and policy-makers. However, they are less useful as normative measures for assessing PHC consumption effectiveness or efficiency, or for adequately tracking key PHC policy and financing reform impacts at a national level. Country-specific PHC definition and measures are needed for such deeper analysis and strategic planning. Four countries were selected for case studies aiming at collecting the evidence to support better tracking of PHC spending/consumption, and linking this with policy objectives and health outcomes at the national and potentially the regional/subregional level. The measures of PHC spending corresponding to the de jure and de facto PHC definitions differed significantly from both the global measures and an optimal (or desirable) country-specific PHC spending measure. Methodological coherence, data quality and granularity need further exploration.

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A health system rooted in primary health care (PHC) is at the core of the Universal Health Care (UHC) agenda. While countries have committed to strengthening PHC, a key barrier to further investment is a lack of reliable information on how much countries already spend. One reason for this dearth of evidence is that countries, as well as international organizations, use a range of definitions of PHC. Without clarity on the definitional boundaries of PHC, it is difficult to accurately estimate PHC spending levels, and any estimates generated may not be comparable across countries. Additionally, ambiguity over the goods and services that are included in PHC can make it difficult to attribute health system outputs or outcomes to expenditures, impeding efforts to monitor PHC performance.

In this study we estimate PHC spending for four countries – Georgia, Kyrgyzstan, North Macedonia and Spain – using a range of internationally-recognized and country-specific definitions of PHC. We make use of the System of Health Accounts (SHA) 2011 framework, used internationally to track health expenditures, to develop expenditure estimates that are consistent with each PHC definition. We find substantial variability in how much countries purport to spend on PHC depending on the definition of PHC used. We conclude that in addition to developing estimates of PHC spending based on a common global definition, countries with sufficient expenditure tracking capacity can make use of the SHA 2011 framework to develop their own country-specific, policy relevant estimates of spending based on their own accepted definitions of PHC.

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The report was written by David Gzirishvili (Consulting Group Curatio Sarl.), Akaki Zoidze (Consulting Group Curatio Sarl.), David Beran (University of Geneva), Tino Marti (Consulting Group Curatio Sarl.), Vladimir Dimkovski (Consulting Group Curatio Sarl.) and Baktygul Akkazieva (WHO Barcelona Office for Health Systems Financing). Overall technical guidance of the research was provided by Tamás Evetovits (WHO Barcelona Office for Health Systems Financing). The report also benefited from comments and inputs received from Triin Habicht (WHO Barcelona Office for Health Systems Financing) and Jens Wilkens (WHO Barcelona Office for Health Systems Financing).

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Abbreviations

CHE	current health expenditure
DIS	disease expenditure [classification]
EECA	eastern Europe and central Asia
FS	revenue of health-care financing schemes [classification]
GHED	Global Health Expenditure Database
HAPT	Health Accounts Production Tool
HAQ	Health Accounts Questionnaire
HC	health-care function [classification]
HF	health-care financing scheme [classification]
HP	health-care provider [classification]
ICHA	International Classification of Health Accounts
nec	not elsewhere classified
OECD	Organisation for Economic Co-operation and Development
PHC	primary health care
PPP\$	international dollars reflecting purchasing power parity
SDG	Sustainable Development Goal
SHA	System of Health Accounts
UHC	universal health coverage

Glossary

For the purposes of this report, the terms “definition”, “measure”, “consumption” and “expenditure” as they relate to primary health care (PHC) are used with the following meanings.

Definition

PHC can be described conceptually (as an aspiration of politicians, global health specialists and development agencies) or technically (for instance, when some of its features should be observed closely or compared).

In different contexts, PHC has been operationalised in different ways: as an approach to the delivery of health care that reorients the system away from hospitals and specialist care to practitioners working at community-level outpatient facilities; as a coordination mechanism which links primary care, community care, specialized care, wider public health interventions, and long-term care services; as a package of health services, often defined using cost-effectiveness as a primary criterion; as a service delivery level or platform, together with the human and other resources needed for it to function effectively; or as a system which combines a platform, a service package, and an approach that emphasizes an orientation to meeting the needs of the population.¹

This report calls these descriptions “PHC definitions”. In other words, a PHC definition is a verbal construct used to communicate an understanding of PHC between two or more actors. A PHC definition exists without relation to the concepts of “measure” or “expenditure”. For the purposes of this research, the authors applied this PHC definition to combinations of components of the SHA 2011 framework and its classification subcategories.²

Measure

PHC, like any complex system, has many features that can be quantified – for instance, its capacity, resources used, outputs produced and outcomes. This report uses specific metrics and units to quantify these features. For instance, capacity can be quantified by staffing (number of visits that can be handled per day or per annum), geographical distribution (average walking distance to the PHC facility) and medical population density (number of doctors per 100 000 population). Outputs can be quantified by performance (percentage coverage of the target group receiving specified services in a given period) or final consumption (number of visits per person per annum, or expenditure on services and goods for final

1. Hanson K, Briki N, Erlangga D, Alebachew A, De Allegri M, Balabanova D et al. The Lancet Global Health Commission on financing primary health care: putting people at the centre. *Lancet Glob Health*. 2022;10(5):e715–72. doi:10.1016/S2214-109X(22)00005-5.

2. OECD, Eurostat, WHO. *A System of Health Accounts 2011: revised edition*. Paris: OECD Publishing; 2017 (https://www.oecd-ilibrary.org/social-issues-migration-health/a-system-of-health-accounts-2011_9789264270985-en, accessed 21 June 2022).

consumption). Therefore, a “PHC measure” refers to a quantified feature of the PHC system. This report examines final consumption as a measure of PHC output.

Consumption

PHC consumption relates to “final consumption”, defined in the SHA 2011 framework as “those health care goods or services produced and imported in the economic territory and used by a resident to satisfy an individual or collective need”.

Expenditure

This report uses expenditure as a measurement unit of consumption (a PHC measure). It uses “current expenditure on health care”, defined in the SHA 2011 framework as “final consumption expenditure of resident units on health care goods and services, including the health care goods and services provided directly to individual persons as well as collective health care services”. “PHC expenditure” means final consumption expenditure, not expenditure on PHC that can be found in financial reports (budget execution or other public financial management products). This report therefore uses the SHA 2011 framework to track final consumption expenditure (referred to as “expenditure” for simplicity). Please also note that the terms “expenditure” and “spending” are used interchangeably throughout.

The report uses functional and organization classifications of the SHA 2011 methodology twice:

- to compose a country-tailored definition from the International Classification of Health Accounts (ICHA) – by health-care function (HC) and by health-care provider (HP) classification categories; and
- to track the final consumption expenditure stored based on health accounts studies and international databases.

Introduction

Primary health care (PHC) is a cornerstone of universal health coverage (UHC). Investing in PHC improves equity in access to needed services and increases system efficiency with an ever-limited resource to meet increasing and changing health needs. The COVID-19 pandemic reconfirmed the importance of PHC in strengthening preparedness and response and in sustaining essential health services during the pandemic.

The first definition of PHC – then called “primary care” – was introduced in the 1920s in the Dawson Report as the “most basic level of care in a structured health system that can provide the essential health-care services in outpatient settings” (1). Since then, the PHC definition has evolved considerably and has been repeatedly reinterpreted and redefined, including through the influential 1978 Declaration of Alma-Ata (2). This broadened the primary care concept to become PHC and highlighted the role of integrated PHC in achieving “health for all”. Later definitions introduced the “four Cs” – “first-contact, comprehensive, continuous and coordinated care” (3); and outlined “integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community” (4).

In parallel, however – particularly in the 1980s – narrower definitions of selective primary care continued to be applied, designed to address major causes of death in lower-resource settings at that time (5). This effort led to confusion about PHC terms, boundaries and practices. With converging forces, including broader population demand for higher-quality services, rising health costs and the emergence of noncommunicable diseases, health system leaders across the globe are increasingly recognizing the central importance of strengthening PHC to meet these evolving needs. This was reiterated in the latest WHO definition, set out within the context of the aim to achieve UHC and the Sustainable Development Goals (SDGs):

PHC is a whole-of-society approach to health that aims to ensure the highest possible level of health and well-being and their equitable distribution by focusing on people’s needs and preferences ... as early as possible along the continuum from health promotion and disease prevention to treatment, rehabilitation and palliative care, and as close as feasible to people’s everyday environment (6).

The realization of this vision requires major investments in PHC that need to be tracked and linked with policy and health outcomes. Measuring PHC expenditure is challenging, since the concept continues to evolve, and ready-made routine data collection mechanisms are lacking. Yet knowing how much a country spends on PHC is essential to improve equity and efficiency for policy-makers and to monitor and evaluate possible policies and actions.

While countries aim for the common goal of UHC, many shared challenges (including resource limitations and competing priorities) require evidence-informed decisions on optimal resource allocations and reallocations (for example, from tertiary care to efficient and high-quality PHC). The WHO Working Group on Sustainable Financing estimates that the targets set for UHC in the SDGs in low- and middle-income countries can be achieved through improved PHC services, with additional

investment of around US\$ 370 billion a year – including US\$ 200 billion for PHC and US\$ 170 billion for other services to achieve UHC (7).

However, this requires countries not only to invest more resources but also to use them more efficiently (producing the highest return on health outcomes) and equitably. Thus, knowing what services and goods the allocated money buys (to calculate efficiency), where the money comes from and how it is channelled (to ensure improvement of equity) is equally or even more important than the volume of resources directed to PHC.

The System of Health Accounts (SHA) 2011 framework facilitates tracking of expenditure, including spending related to PHC (Box 1), but this cannot be accomplished without clearly defining the boundaries of PHC.

Box 1. The SHA 2011 framework

Source: Eurostat (8).

The SHA is currently used as a basis for a joint data collection by OECD, Eurostat and WHO on health care expenditure. The SHA classifications build on common concepts, boundaries, definitions and accounting rules for measuring consumption of health care goods and services. The use of SHA clearly enhances the coherence and comparability of health care expenditure statistics over time and between countries

To address this gap, WHO proposed a global measure of PHC to benchmark and track PHC expenditure globally, using the SHA 2011 framework (Box 2) (9).

Box 2. WHO global measure of PHC expenditure

Source: WHO (10).

WHO has developed a health-care function (HC) classification that “approximates the comprehensive concept of PHC expenditure using the functional classification framework of SHA 2011”. It incorporates first-contact personal and population-based services to estimate and compare PHC expenditure internationally, including:

- general outpatient curative care (such as visits to a general practitioner or nurse) (HC.1.3.1);
- dental outpatient curative care (such as visits for regular control and other oral treatment) (HC.1.3.2);
- curative outpatient care not elsewhere classified (excluding specialized outpatient care) (HC.1.3.n.e.c.);
- home-based curative care (such as home visits by a general practitioner or nurse) (HC.1.4);
- outpatient (HC.3.3) and home-based (HC.3.4) long-term health care;
- preventive care (such as immunization, health check-ups, health education, disease detection, monitoring and emergency response programmes) (HC.6);
- part of medical goods provided outside health-care services (80% of HC.5);
- part of health system administration and governance expenditure (80% of HC.7).

WHO provides countries with the accounting framework SHA 2011, tools and technical support to institutionalize and set up a harmonized, integrated platform for annual and timely collection of health expenditure data (11). The SHA 2011 framework facilitates connecting the broad PHC expenditure concept with a uniform typology of HC classifications (services and goods) and standardizing expenditure tracking, despite the diverse service delivery systems in countries (including health-seeking behaviour variations).

PHC spending is mainly aligned with the first component of the WHO PHC definition: the service that entails the “first contact” between an individual and the health system and also certain public health functions. Using this definition as an international benchmarking standard, underpinning a global measure, in 2018 WHO headquarters published the first round of comparative data on PHC spending for 50 countries, demonstrating the structure of health spending on PHC (12). Since then, the number of countries for which WHO tracks and reports PHC expenditure using this definition has more than doubled: 101 countries were included in the

2021 WHO report on global expenditure on health (13). Moreover, by 2022, the estimates of PHC expenditure using this approach are being published for most of the world's countries in WHO's Global Health Expenditure Database (GHED) (14).

In parallel, the Organisation for Economic Co-operation and Development (OECD) Secretariat proposed alternative global measures for PHC consumption tracking for OECD countries, using the International Classification of Health Accounts (ICHA) – by HC classification of the SHA 2011 (15). It further added a third measure for reporting PHC expenditure: a classification by health-care provider (HP) (Box 3). Annex 1 sets out a full list of ICHA codes by function.

Box 3. OECD proposed global measures of PHC expenditure

Source: Mueller & Morgan (15).

In 2019, the OECD Secretariat proposed three “aggregates” as proxies to measure PHC expenditure. It noted that the third measure was preferred, but that the first two options may be more suitable for countries that have not yet implemented the three core dimensions of SHA: financing (who pays?), provision (who provides the good or service?) and function (what is the purpose of the good or service?) to create a full provider breakdown. It also noted that this would further facilitate mapping of OECD data to WHO. The three aggregates are:

1. “expenditure on basic services”: summing up expenditure of the functions general outpatient curative care (HC.1.3.1), outpatient dental care (HC.1.3.2), home-based curative care (HC.1.4) and the preventive services HC.6.1 to HC.6.4 for all health-care providers (all HP codes);
 2. “expenditure on basic services and pharmaceuticals”: using the functional definition of “aggregate 1” and adding expenditure for prescribed pharmaceuticals (HC.5.1.1) and over-the-counter medicines (HC.5.1.2) for all health-care providers (all HP codes); and
 3. “expenditure on basic services provided by providers of ambulatory care”: using the functional definition of “aggregate 1” but limiting spending to providers of ambulatory health care (HP.3).
-

Both the WHO and OECD measures are proxy estimates of PHC expenditure using the functional classification of the SHA 2011 framework (confined to ambulatory health-care providers – HP.3 classifications – for OECD). They are important descriptive measures of PHC consumption that are internationally comparable and may serve as PHC expenditure benchmarks for individual countries and policy-makers. However, they are less useful as normative measures for assessing PHC consumption effectiveness or efficiency, or for adequately tracking key PHC policy and financing reform impacts at a national level. Country-specific measures are needed for such deeper analysis and strategic planning. In fact, WHO strongly encourages

countries to combine HC and HP classifications to capture country-specific aspects of service delivery and health-seeking behaviour and to estimate related expenditure more accurately (10) (Box 4).

Box 4. The global PHC expenditure measure

Source: WHO (10).

The choice of the HC classification as the relevant framework for estimating PHC expenditure was mainly because it best reflects the PHC concept, and allows cross-country comparisons. Individual countries will have their own definitions of PHC – often classified in terms of health providers. The global PHC expenditure measure is not designed to replace these country-level measures, but rather complement them.

Countries are encouraged to prepare cross-table functions by providers to better understand their service delivery configurations, improve the precision of spending estimates for HC (and thus PHC) and monitor policy changes.

The WHO Barcelona Office for Health Systems Financing supports Georgia, Kyrgyzstan and North Macedonia with institutionalization of health-care expenditure tracking, based on the SHA 2011 framework, focusing on two areas:

- production of expenditure tracking studies; and
- use of these findings for policy-making, including improving PHC as means of achieving UHC targets.

The OECD also collects health accounts data annually for its member countries, including Spain, and publishes them in its online databases. The WHO Barcelona Office therefore decided to capitalize on all these activities and to explore opportunities to create more accurate measurements of PHC spending for individual countries, using combinations of ICHA HC and HP classifications tailored to national service delivery configurations. It commissioned the development of a dynamic modelling tool to enable classification of specific PHC expenditure types across ICHA HC and HP categories. The tool is based on an operational definition or multiple definitions of PHC (or on a definition of which activities and services are considered to belong to the PHC domain), constructed according to the country context. With this tool, a user can estimate PHC spending corresponding to the PHC definition set out in the WHO global measure of PHC, the proposed OECD global measures or alternative national definitions.

- The MS Excel-based tool allows the user to compose a PHC definition from any combination of two SHA 2011 classifications: HC and HP.

- Next, the tool estimates PHC spending corresponding to this definition. It uses PHC spending according to the standard WHO and OECD definitions as benchmarks to compare expenditure according to the custom PHC definition created.
- Finally, the tool enables users to visualize the implications of the HC and HP choices used for the custom PHC definition on spending.

Two versions of the tool were developed: one for OECD countries (using the OECD health expenditure and financing database (16)) and another for the countries in the WHO European Region that have prepared expenditure tracking studies (known as health accounts studies) using WHO's Health Accounts Production Tool (HAPT), which generates two-dimensional matrix reports in MS Excel format.

The WHO Barcelona Office next commissioned a study to measure PHC spending in selected countries, based on SHA 2011 methodology, applying the dynamic PHC modelling tool. The team of researchers was able to compose country-specific PHC definitions combining data on health-care functions and providers, estimating and comparing PHC spending for each custom definition. The comparative analysis was also performed across the country case studies to identify major differences and emerging common issues. It was assumed that the commonalities might lead to regional or subregional definitions aligned to PHC consumption patterns across countries with similar legislative and institutional PHC system frameworks.

The members of the research team that developed the country case studies had diverse backgrounds. The team included a researcher and expert in health systems, including the system of one of the case study countries (Kyrgyzstan), but not previously acquainted with the methodological nuances of the SHA 2011 framework; an economist and former PHC network manager from the case study OECD country (Spain); an economist and practitioner with a background working in a health insurance fund, experienced in the production of health accounts, including for one of the case study countries (North Macedonia); and a former policy-maker with experience of health accounts analysis and use for policy development and advocacy. This diversity enriched the cross-country analysis and its practical implications, as well as the assessment of the utility of the new dynamic modelling tool.

Objective, research questions and methods

Objective

The aim of this research was to support better tracking of PHC expenditure/consumption, and to link this with policy objectives and health outcomes at the national and potentially the regional/subregional level.

Research questions and subquestions

The following research questions and subquestions were identified by the research team.

1. Can an operational PHC definition and related measures be tailored to all countries (ideally) or to subregions (at least) in the WHO European Region?
 - a. What are the key elements (of health-related consumption) that determine differences and commonalities in the PHC “architecture” and in related expenditure across subregions and the selected countries?
 - b. Can the SHA 2011 methodology capture these health system differences? In other words, can the differences in health-related consumption be tracked using the SHA 2011 framework?
 - c. Even if the SHA 2011 framework is promising for tracking PHC spending using tailored PHC definitions, is the structure of the available datasets (OECD, WHO’s GHED and health accounts studies) appropriate to facilitate this?
2. What is the added value of country- or subregion-specific PHC definitions and measures?
 - a. To what extent can PHC spending be compared across countries if they opt for localized PHC definitions (using national definitions of PHC and its expenditure)?
 - b. How far does the level and structure of PHC spending vary between the global (WHO and OECD) PHC definitions and country-tailored definitions across the countries? In other words, does using HC and HP combinations (which type of care + by which health-care provider) to define PHC yield a noticeable difference in the structure of PHC spending in the selected countries?
 - c. What are the policy implications of using the country-tailored operational PHC definitions and measures?

Methods

Development of country-specific PHC definitions

Four case study countries were selected for this project: Georgia, Kyrgyzstan, North Macedonia (WHO European Region, non-OECD), and Spain (WHO European Region, OECD). The research team reviewed the policy and legislative framework governing PHC and its financing in each country, including statutory laws (enacted by a legislative body such as a parliament) and regulatory and administrative acts adopted by the executive authorities of the government that legally define PHC and its main principles and scope¹ – creating a “de jure definition of PHC”. They also analysed what was actually provided, financed and utilized as a PHC activity and service in each country – creating a “de facto definition of PHC”.

When defining the latter, existing PHC-related health-seeking behaviours were also considered. The research team members developing each country’s case study were also asked to develop an “optimal definition of PHC” for each country, based on the key principles embodied in the latest WHO definition of PHC² and their expert opinion and knowledge of the country’s context.

Creation of a PHC spending dynamic modelling tool

The research team next developed an Excel-based PHC spending dynamic modelling tool. This drew on the SHA 2011 framework to model, analyse and present PHC spending for OECD countries – using a version of the tool with preloaded OECD datasets – and for any other countries for which health accounts studies have been produced using WHO’s HAPT. In addition, the modelling tool enabled the research team to test and apply various combinations of HC and HP classifications to model PHC consumption for each country.

Estimation of expenditure on PHC-related consumption at the country level

As a third step, the research team members produced PHC consumption estimates for each case study country with the newly developed modelling tool. They used the relevant global measures set out by WHO (see Box 2) and the OECD (see Box 3), and created de jure, de facto and optimal (considered feasible and efficient by a member of the research team) definitions of PHC for each country.³

The team members responsible for each country applied combinations of ICHA HC and HP classifications to arrive at PHC consumption estimates appropriate for each alternative definition of PHC. PHC spending for each definition was presented as:

- a percentage share of current health expenditure (CHE); and
- expenditure per capita in current international dollars per capita reflecting purchasing power parity (PPP\$).

1. if such definitions were embodied in national legislation

2. Ensuring the highest possible level of health and well-being and their equitable distribution by focusing on people’s needs and as early as possible along the continuum from health promotion and disease prevention to treatment, rehabilitation and palliative care, and as close as feasible to the people’s everyday environments (7).

3. The “optimal” definition is derived from expert opinion about which services and activities and corresponding expenditure need to be classified as PHC if the WHO global PHC definition (quoted in the introduction) is applied to the relevant country context.

Comparative analysis

Finally, the research team performed a comparative analysis of the PHC consumption data from the available years for each country in the relevant versions of the modelling tool (2018–2019 for Georgia and North Macedonia, 2014–2019 for Kyrgyzstan and 2003–2019 for Spain) and between different PHC measures, comparing the resulting estimates within and across the case study countries, using the WHO and OECD measures as benchmarks. For Spain, the comparison was also possible across OECD countries.

The comparative analysis was interactive: the research team members exchanged country analysis results and findings to identify common issues and key differences when using the four measures of PHC spending for each country and across the countries. They used the data to answer the research questions and to discuss emerging policy implications and recommendations. The PHC consumption estimates and analysis for each country presented in the form of graphs and tables were also produced using the dynamic modelling tool. The results of the analysis for each country are presented in the following sections.

Key findings from the country case studies

Georgia

PHC definition

The de jure definition of PHC in Georgia is derived from the Law on Health Care, which defines it as:

the first contact of an individual or a family with the health care system; continuous, comprehensive, and coordinated medical services primarily based on a system of family medicine, available for each member of society, and implying measures of health promotion, disease prevention, and widely prevalent disease treatment and rehabilitation, including maternal and child health care, family planning, palliative care, and ensuring access to essential medicines (17).

According to this law, PHC includes public health interventions and emergency medical care, although the mode of care provision (inpatient or outpatient) and setting (such as ambulance/home, hospital or ambulatory care) are not specified.

The Resolution of the Government of Georgia on PHC services defines de facto PHC in the country. It provides more details about the services within the framework of three distinct health-care budget programmes – the Universal Health Care Programme, the Rural Doctors' Programme and the ambulatory component of the Maternal and Child Health Programme. As in several countries of the former Soviet Union, the de facto definition in Georgia differs considerably from the de jure definition of PHC, as it outlines what is provided by different health-care providers. For example, essential first-contact PHC services are provided in hospitals (such as outpatient care in emergency or admission areas). In contrast, specialized services (such as a visit to a neurologist, cardiologist or ophthalmologist) are provided at PHC facilities (and are thus treated and financed as PHC services from the Universal Health Care Programme).

Alternative measures for PHC spending

In view of the country-tailored PHC definitions and the local context, four alternative PHC expenditure measures for Georgia (WHO, de jure, de facto and optimal) were compared (Table 1 and Fig. 1).

Note that only PHC expenditure based on the de jure definition includes expenditure on emergency specialized outpatient curative care (HC.1.3.3.1), which is specified as PHC in the Law on Health Care. Further, other emergency specialized outpatient curative care (HC.1.3.3.nec [not elsewhere classified]) provided by maternity hospitals and family planning centres was included in both the de jure and optimal PHC definition-based measures in an attempt to account for expenditure on family planning services and antenatal care. In addition, the research team used the caesarean section rate reported nationwide to define the share of non-complicated deliveries in maternity hospitals (total rate – caesarean section rate) to account for expenditure on physiological deliveries classified as PHC for the optimal definition. As noted earlier, some other

specialized services may be considered PHC (such as visiting a neurologist, cardiologist or ophthalmologist), as these are often provided as a first contact at the PHC level in Georgia; however, considering the difficulties in disentangling expenditure for such specialized outpatient services, expenditure on any other specialized services in country-tailored measures is not included.

The PHC spending estimated using all three country-specific definitions significantly exceeded the PHC spending according to the WHO global definition (Fig. 1). Expenditure on pharmaceuticals accounts for the largest share of the observed difference. The composition of ancillary services added in the de jure, de facto and optimal PHC definitions in Georgia accounts for most of differences in the PHC spending across alternative country-specific measures.

4. This is based on expert opinion, assuming that up to 30% of laboratory services in Georgia are provided to general and specialized hospitals.

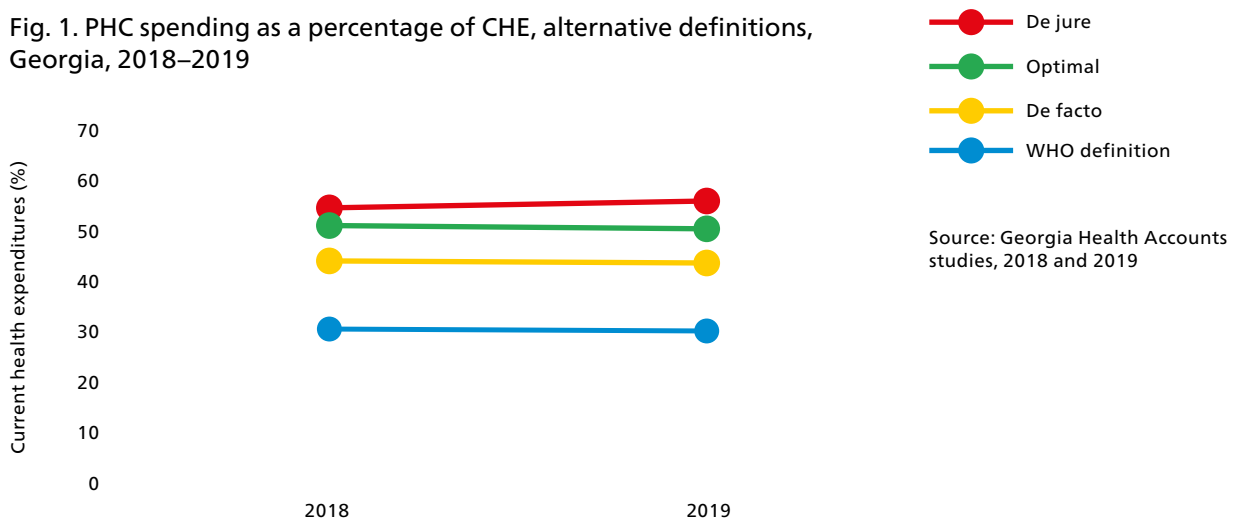
Table 1. Comparison of PHC expenditure based on country-tailored PHC definitions and the WHO global PHC definition, Georgia

Notes: an empty cell indicates that the classification category is not included in the PHC definition. For a full list of classification codes, see Annex 1.

Source: authors

Component definition (SHA 2011 code)	De jure	De facto	Optimal	WHO
General outpatient curative care (HC.1.3.1)	100%	100%	100%	100%
Dental outpatient curative care (HC.1.3.2)	100%		100%	100%
Emergency outpatient curative care (HC.1.3.3.1)	100%			
Other specialized outpatient curative care (HC.1.3.3.nec)	100%	100%	100%	
	Maternity hospital (HP.1.3.1)	Maternity hospital (HP.1.3.1)	Maternity hospital (HP.1.3.1), 45%	
	Family planning centres (HP.3.4.1)		Family planning centres (HP.3.4.1)	
Ambulance services (HC.4.3)	100%		100%	
Laboratory services (HC.4.1)	100%	100%	70% ⁴	
Imaging services (HC.4.2)	100%	100%	100%	
			All other ambulatory centres (HP.3.4.9)	
Preventive services (HC.6)	100%	100%	100%	100%
Pharmaceuticals (HC.5.1.1 + HC.5.1.2)	100%	100%	100%	80%
Governance (HC.7)	0	0	15%	80%

Fig. 1. PHC spending as a percentage of CHE, alternative definitions, Georgia, 2018–2019



Conclusion

The composition of the legal definition of PHC is close to what may be considered “optimal”, based on the WHO definition of PHC, as it does not limit the PHC expenditure measure to specific health providers. However, paradoxically, the country-specific measures derived from de jure, de facto and optimal PHC definitions in Georgia appear to diverge significantly from the WHO-proposed global measure for PHC spending, which:

- considers only 80% of pharmaceutical expenditure to be related to PHC (while 100% is included or implied in all three country-tailored measures);
- does not include a major share of expenditure on ancillary services (ambulance, laboratory and imaging) provided by ambulatory care providers and medical and diagnostic laboratories; and
- also does not include services provided by obstetricians and gynaecologists for antenatal care and uncomplicated vaginal deliveries (see Fig. 1).

Kyrgyzstan

PHC definition

PHC is not defined in statutory laws in Kyrgyzstan. The de jure definition of PHC is derived from two legislative acts of the Ministry of Health. The definition of PHC from the Act on the Basic Package of Primary Health-care Services Provided by Family Medicine Specialists includes prevention, diagnosis, treatment of diseases, rehabilitation therapy, monitoring the course of pregnancy and promotion of a healthy lifestyle to preserve and strengthen the health of the population assigned to a family doctor/general practitioner. It adds that PHC services provided by family medicine specialists include medical services of first contact and ongoing follow-up, regardless of the presence or absence of the disease in the population. According to the second normative act on the State-Guaranteed Benefits Package, PHC includes outpatient services provided by feldshers at feldsher-obstetric points, doctors at groups of family doctors, family doctors and specialists at family medicine and general practice centres. From this definition, the important implication is that PHC services are only provided on an outpatient basis and that, in comparison to other settings, some specialist care is integrated within PHC. Notably, where the de facto definition differs considerably from the de jure definition of PHC in Kyrgyzstan, the differences can be found in the type and the place of services provided.

Alternative measures for PHC spending

In view of the country context, the WHO global definition and four country-tailored PHC definitions (de jure, de facto and two versions ("a" and "b") of optimal) were tested (Table 2 and Fig. 2).

In Kyrgyzstan, as in many other countries of the former Soviet Union, there is a difference between the definition of PHC and the reality on the ground. Although such differences between theory and practice are hard to quantify, it is important to look at two elements in proposing alternative or "optimal" models: where services are provided, and the type of service provided. For example, general outpatient care that could be provided by PHC facilities (ambulatory care – HP.3) is provided in hospitals; in contrast, specialist care is provided by PHC ambulatory facilities like polyclinics (ambulatory health-care centres – HP.3.4). This service delivery configuration requires the location of care to be modelled using HP codes distinctive to PHC. Another approach, looking at what services and what percentages of these services might be delivered by PHC, is required. Thus, the illustrations below depict modelling based on four PHC definitions plus the WHO global definition, as follows.

- The de jure model is based on the definition of PHC with specific HP codes to distinguish services delivered by PHC.
- The de facto model aims to present in practice the services provided by PHC in Kyrgyzstan; these include more than what is defined in the de jure model.

- The optimal version “a” model takes the same HC codes as the de jure model, but instead of limiting the data to the specific HP codes for PHC, it takes the approach of estimating the share of expenditure recorded for each combination that should be allocated to PHC, according to expert opinion.
- The optimal version “b” model uses the same HC and HP code combinations as the de facto model, but as with optimal “a”, it takes the approach of estimating the percentage that should be allocated to PHC expenditure, according to expert opinion.

The results are depicted in Table 2, and show substantial differences between the WHO global definition and the measures based on the actual and alternative definitions of PHC in Kyrgyzstan. More specifically, restricting services to those only provided by providers of ambulatory health care using HP.3 codes results in a significant difference compared to the WHO global measure. On the other hand, no real impact is observed by adding additional services (de facto versus de jure).

Table 2. Comparison of PHC expenditure based on country-tailored PHC definitions and the WHO global PHC definition, Kyrgyzstan

Notes: an empty cell indicates that the classification category is not included in the PHC definition. For a full list of classification codes, see Annex 1.

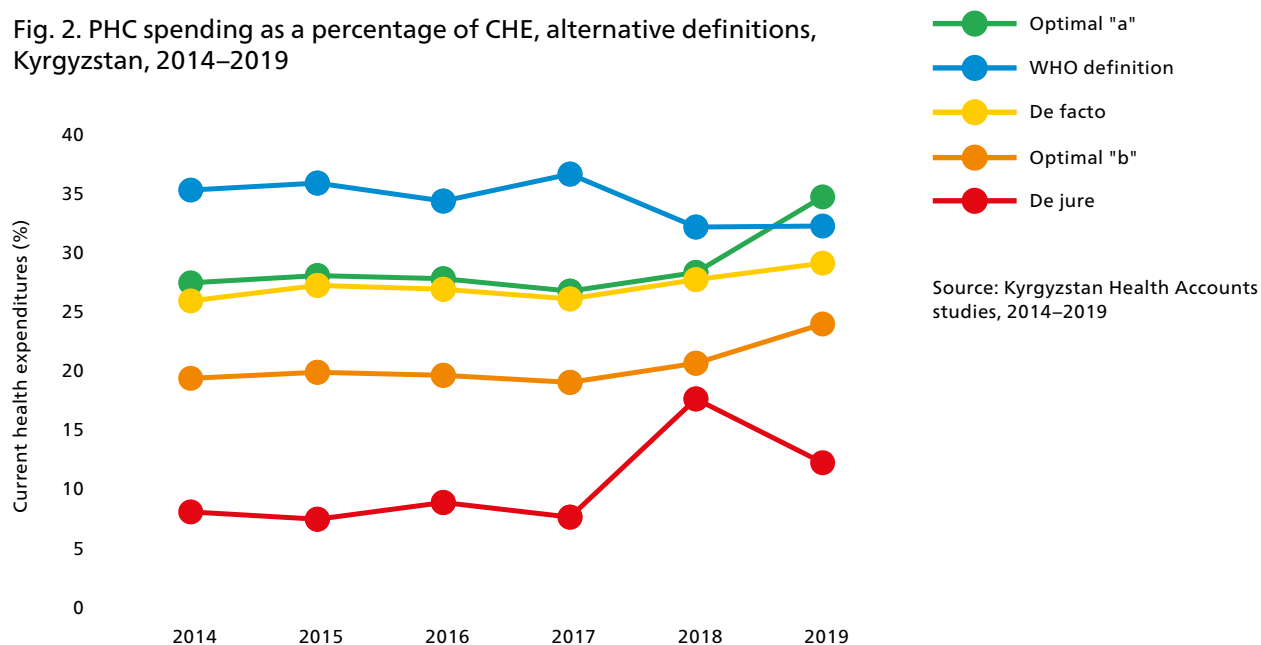
Source: authors

Component definition (SHA 2011 code)	De jure	De facto	Optimal "a"	Optimal "b"	WHO
General inpatient care (HC.1.1.1)		100%		100%	
		Offices of general medical practitioners (HP.3.1.1)		10%	
		All other ambulatory centres (HP.3.4.9)			
Specialized inpatient care (HC.1.1.2)		100%		100%	
		Offices of general medical practitioners (HP.3.1.1)		10%	
		All other ambulatory centres (HP.3.4.9)			
Unspecified inpatient care (HC.1.1.nec)		100%		100%	
		Offices of general medical practitioners (HP.3.1.1)		30%	
		All other ambulatory centres (HP.3.4.9)			
General outpatient curative care (HC.1.3.1)	100%	100%	100%	100%	100%
	Offices of general medical practitioners (HP.3.1.1)	Offices of general medical practitioners (HP.3.1.1)	80%	80%	
	All other ambulatory centres (HP.3.4.9)	All other ambulatory centres (HP.3.4.9)			
Dental outpatient curative care (HC.1.3.2)					100%
Specialized outpatient curative care (HC.1.3.3)	100%	100%	100%	100%	
	Offices of general medical practitioners (HP.3.1.1)	Offices of general medical practitioners (HP.3.1.1)	60%	60%	
	All other ambulatory centres (HP.3.4.9)	All other ambulatory centres (HP.3.4.9)			
Home-based curative care (HC.1.4)	100%	100%	100%	100%	100%
	Offices of general medical practitioners (HP.3.1.1)	Offices of general medical practitioners (HP.3.1.1)	80%	80%	
	All other ambulatory centres (HP.3.4.9)	All other ambulatory centres (HP.3.4.9)			
Unspecified curative and unspecified outpatient curative care (H.C.1.nec and HC.1.3.nec)		100%		100%	
		Offices of general medical practitioners (HP.3.1.1)		60%	
		All other ambulatory centres (HP.3.4.9)		30%	

Table 2. contd

Component definition (SHA 2011 code)	De jure	De facto	Optimal "a"	Optimal "b"	WHO
Outpatient rehabilitative care (HC.2.3)	100%	100%	100%	100%	
	Offices of general medical practitioners (HP.3.1.1)	Offices of general medical practitioners (HP.3.1.1)	60%	60%	
	All other ambulatory centres (HP.3.4.9)	All other ambulatory centres (HP.3.4.9)			
Ambulance services (HC.4.3)		100%		100%	
		Offices of general medical practitioners (HP.3.1.1)		50%	
		All other ambulatory centres (HP.3.4.9)			
Laboratory services (HC.4.1)	100%	100%	100%		
	Offices of general medical practitioners (HP.3.1.1)	Offices of general medical practitioners (HP.3.1.1)	60%		
	All other ambulatory centres (HP.3.4.9)	All other ambulatory centres (HP.3.4.9)			
Imaging services (HC.4.2)	100%	100%	100%		
Epidemiological surveillance (planning and management, and monitoring and evaluation) (HC.6.5.1 + HC.6.5.2)	100%	100%	100%	100%	100%
	Offices of general medical practitioners (HP.3.1.1)	Offices of general medical practitioners (HP.3.1.1)	50%	50%	
	All other ambulatory centres (HP.3.4.9)	All other ambulatory centres (HP.3.4.9)			
Prescribed medicines (HC.5.1.1)	100%	100%	80%	80%	80%
	Offices of general medical practitioners (HP.3.1.1)	Offices of general medical practitioners (HP.3.1.1)			
	All other ambulatory centres (HP.3.4.9)	All other ambulatory centres (HP.3.4.9)			
Other medical non-durable goods (HC.5.1.3)		100%		50%	
		Offices of general medical practitioners (HP.3.1.1)			
		All other ambulatory centres (HP.3.4.9)			
Governance (planning and management) (HC.7.1.1)	100%	100%	50%	50%	80%
	Offices of general medical practitioners (HP.3.1.1)	Offices of general medical practitioners (HP.3.1.1)			
	All other ambulatory centres (HP.3.4.9)	All other ambulatory centres (HP.3.4.9)			
Governance (all other) (HC.7.1.nec + HC.7.1.2 + HC.7.1.3 + HC.7.2)		100%		50%	80%
		Offices of general medical practitioners (HP.3.1.1)			
		All other ambulatory centres (HP.3.4.9)			

Fig. 2. PHC spending as a percentage of CHE, alternative definitions, Kyrgyzstan, 2014–2019



Conclusion

The modelling above, which is not without its limitations, shows a clear disconnect between theory (de jure) and practice (de facto): what the Kyrgyz definition of PHC states should be provided at this level of care and what is actually provided, with both more services (including specialist care) and fewer services (such as preventive services) provided than would be expected for optimal PHC definition. Furthermore, considering the issue of data quality and granularity, it is unclear how sensitive the alternative, more custom-tailored country-specific measures are compared to the WHO global measure.

North Macedonia

PHC definition

The de jure definition of PHC in North Macedonia is derived from the Law on Health Care, which sets out the split between the primary, secondary and tertiary levels of health care. It defines 18 types of services provided in PHC and the providers of these services, including ambulances, polyclinics of general practitioners, gynaecologists, dentists, dental technicians' offices, health centres and pharmacies. In North Macedonia, the de facto definition does not differ from the de jure definition of PHC.

Alternative measures for PHC spending

The SHA 2011 HC and HP codes and their combinations are relatively well applied to the country-specific PHC definition, with a few exceptions. First, the country-specific definition includes expenditure on all (100%) pharmaceuticals dispensed by pharmacies (HC.5.1 and HC.5.2 combined with HP.5.1). Second, instead of 80% of medical goods provided outside health-care services, as in the case of the WHO global measure, private gynaecologists are treated as general practitioners, but in SHA 2011 they are coded as specialists providing specialist care, and the combination of codes also includes other specialists (such as internal medicine and orthopaedic specialists) that do not provide PHC. For this reason, in the alternative country-specific measure, gynaecological care is estimated as a proportion (26.8%)⁵ of specialized care expenditure. Third, the country-specific definition of PHC does not include any health system governance expenditure (HC.7).

The adjusted legal definition is suggested as the optimal model to include the share of this expenditure, defined proportionally to the shares of administrative expenditure on the preventive and PHC service programmes of the Ministry of Health (26%) and Health Insurance Fund (28%). As a result, only two country-specific PHC measures were proposed and tested for North Macedonia: the de jure/de facto definition and an adjusted optimal definition. The results are depicted in Table 3 and Fig. 3, and show that – as in Georgia and Kyrgyzstan – there is a 7–8 percentage point difference between the WHO global and the country-specific measures of PHC expenditure in North Macedonia. This difference is due to two factors: adding spending for gynaecologists and 100% of spending on pharmaceuticals dispensed by pharmacies.

5. The proportion was derived from an analysis of invoices submitted by specialists to the Health Insurance Fund; it reflects the share of expenditure for the services provided by the gynaecologists at the PHC facility.

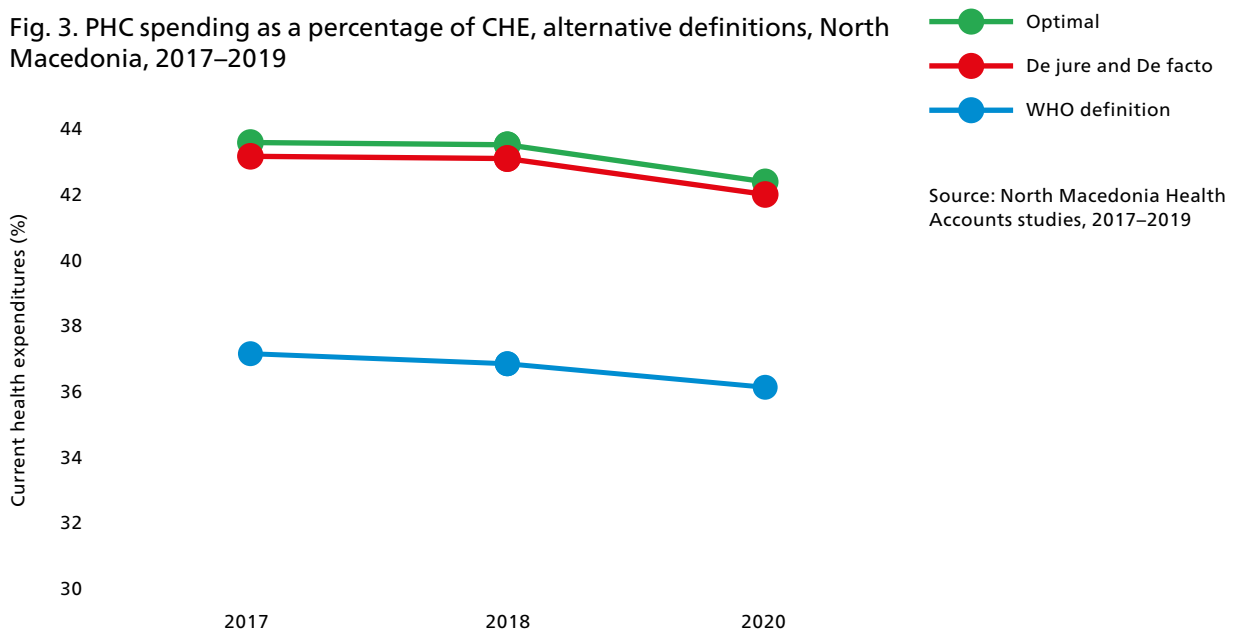
Table 3. Comparison of PHC expenditure based on country-tailored PHC definitions and the WHO global PHC definition, North Macedonia

Notes: an empty cell indicates that the classification category is not included in the PHC definition. For a full list of classification codes, see Annex 1.

Source: authors

Component definition (SHA 2011 code)	De jure and de facto	Optimal	WHO
General outpatient curative care (HC.1.3.1 + HC.1.3.1.nec)	100%	100%	100%
Dental outpatient curative care (HC.1.3.2)	100%	100%	100%
	Dental offices (HP.3.2)	Dental offices (HP.3.2)	
Emergency general outpatient care (HC.1.3.3.1)	100%	100%	
Other specialized outpatient curative care (HC.1.3.3.nec)	100%	100%	
	Offices of medical specialists (HP.3.1.3), 26.8%	Offices of medical specialists (HP.3.1.3), 26.8%	
Home-based curative care (HC.1.4)	100%	100%	100%
	All other ambulatory centres (HP.3.4.9)	All other ambulatory centres (HP.3.4.9)	
Outpatient rehabilitation services	100%	100%	
	All other ambulatory centres (HP.3.4.9)	All other ambulatory centres (HP.3.4.9)	
Laboratory services (HC.4.1)	100%	100%	
	Medical and diagnostic laboratories (HP.4.2)	Medical and diagnostic laboratories (HP.4.2)	
	All other ambulatory centres (HP.3.4.9)	All other ambulatory centres (HP.3.4.9)	
Preventive services (HC.6)	100%	100%	
	HC.6.nec, HC.6.1.3, HC.6.1.nec, HC.6.2, HC.6.3, HC.6.4, HC.6.5.1, HC.6.5.4.4	HC.6.nec, HC.6.1.3, HC.6.1.nec, HC.6.2, HC.6.3, HC.6.4, HC.6.5.1, HC.6.5.4.4	
Pharmaceuticals (HC.5.1.1 + HC.5.1.2)	100%	100%	80%
Governance (HC.7)		HC.7.1.nec, 25.8%; HC.7.2, 28.0%	HC.7, 80%

Fig. 3. PHC spending as a percentage of CHE, alternative definitions, North Macedonia, 2017–2019



Conclusion

North Macedonia's single country-specific measure is likely to capture adequately the spending on PHC services as defined in the country legislation and provided in practice. While there is a difference between the WHO and the country-specific measures, the difference is attributable and can be reconciled easily when conducting a comparative analysis.

Spain

PHC definition

The de jure definition of PHC in Spain is derived from the General Health Act of 1986. It defines primary care in terms of the services provided by primary care teams, their professional composition and the settings where they provide their services. Primary care includes health promotion, health education and preventive, curative and rehabilitative services to a territorially defined population known as Basic Health Zones.

A redefinition of specialized care in 1986 consisted of integrating ambulatory medical specialties to reference hospitals, thereby setting a clear line between primary and secondary care. However, services like women's health, ambulatory palliative care and rehabilitation are considered part of the primary care structure. Mental health care provided by psychiatrists and psychologists who work in ambulatory settings should also be considered part of primary care services, although this is not the case in Spain. Pharmaceutical expenditure prescribed by primary care practitioners and dispensed in community pharmacies should be considered part of primary care services. The de facto (or extended) definition of PHC in Spain, along with the services provided by primary care teams – comprising family doctors, paediatricians, dentists, nurses and social workers – also includes primary care support services provided at the community level that are not integrated with hospitals. These services include the work of gynaecologists, midwives, rehabilitation doctors and physiotherapists, palliative care units, primary care laboratories and radiology services.

Alternative measures for PHC spending

Three country-specific alternative measures were tested, based on the de jure, de facto (an extended definition that in expert opinion may be closer to the optimal, and classified as such in Table 4 and Fig. 4), and the WHO global definition of PHC. The legal definition included general, dental and all other outpatient curative care (HC.1.3.1, HC.1.3.2 and HC.1.3.9) provided by specified health-care providers in medical practices, ambulatory health-care centres and dental practices, other health-care practitioners and providers of home-health services. In addition to the legal definition, the extended definition captures a wider understanding of primary care services that could include pharmaceutical expenditure derived from prescriptions issued by primary care doctors (and nurses) and the services provided by other medical specialties at the ambulatory level. Hence, this definition also encompasses part of specialized outpatient curative care and pharmaceuticals. This approach results in a major difference between country-specific PHC measures based on de jure and de facto definitions of PHC in Spain. For example, in 2019, PHC spending based on the legal definition would have been US\$ 464 per capita or 13.8% of CHE, while using the extended definition results in US\$ 1534 per capita or 45.5% of CHE.

Fig. 4. PHC spending as a percentage of CHE, alternative definitions, Spain, 2003–2019

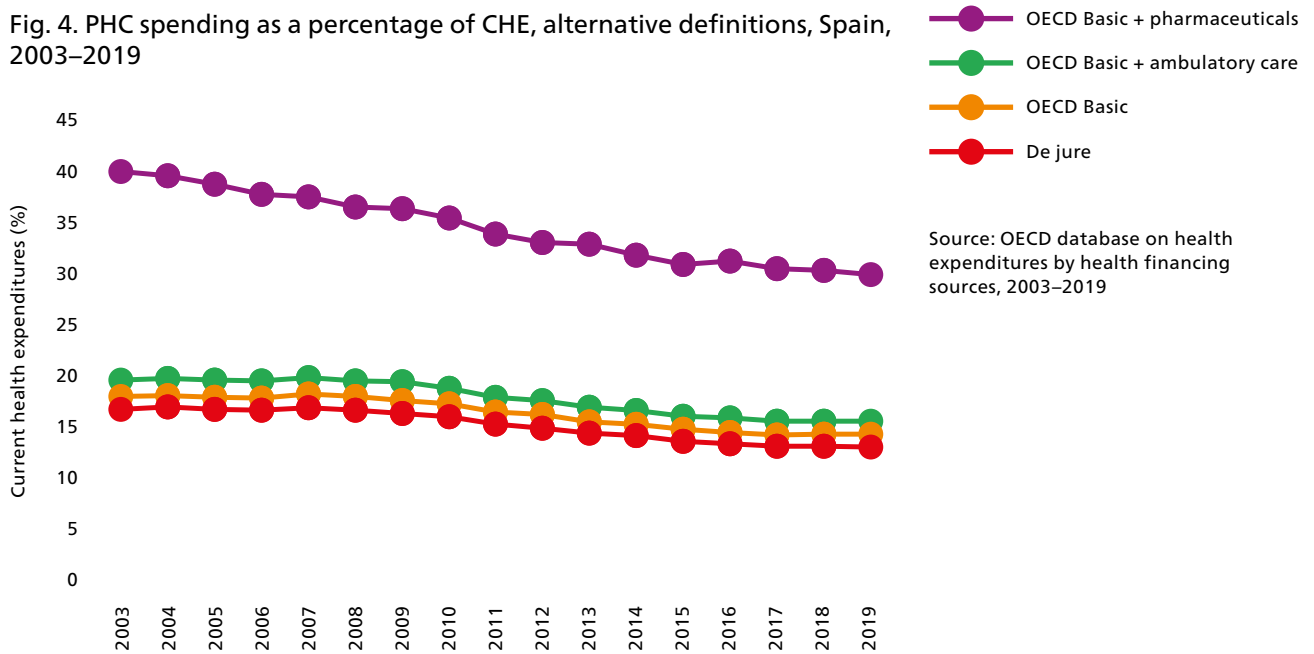


Table 4. Comparison of PHC expenditure based on country-tailored PHC definitions with the WHO global PHC definition, Spain

Notes: an empty cell indicates that the classification category is not included in the PHC definition. For a full list of classification codes, see Annex 1.

Source: authors

Component definition (SHA 2011 code)	De jure	De facto = optimal	WHO
Inpatient curative care (HC.1.1)	100%	100%	
	Medical practices (HP.3.1)	Medical practices (HP.3.1)	
	Other health-care practitioners (HP.3.3)	Other health-care practitioners (HP.3.3)	
	Ambulatory health-care centres (HP.3.4)	Ambulatory health-care centres (HP.3.4)	
		Providers of home-health services (HP.3.5)	
Day curative care (HC.1.2)	100%	100%	
	Medical practices (HP.3.1)	Medical practices (HP.3.1)	
	Other health-care practitioners (HP.3.3)	Other health-care practitioners (HP.3.3)	
	Ambulatory health-care centres (HP.3.4)	Ambulatory health-care centres (HP.3.4)	
		Providers of home-health services (HP.3.5)	
General outpatient curative care (HC.1.3.1)	100%	100%	100%
Dental outpatient curative care (HC.1.3.2)	100%	100%	100%
Specialized outpatient curative care	100%	100%	
	Medical practices (HP.3.1)		
	Other health-care practitioners (HP.3.3)		
	Ambulatory health-care centres (HP.3.4)		
Other outpatient curative care (HC.1.3.9)	100%	100%	
Home-based curative care (HC.1.4)	100%	100%	100%
	Medical practices (HP.3.1)	Medical practices (HP.3.1)	
	Other health-care practitioners (HP.3.3)	Other health-care practitioners (HP.3.3)	
	Ambulatory health-care centres (HP.3.4)	Ambulatory health-care centres (HP.3.4)	
		Providers of home-health services (HP.3.5)	
Home-based rehabilitative care (HC.1.4)	100%	100%	
	Medical practices (HP.3.1)	Medical practices (HP.3.1)	
	Other health-care practitioners (HP.3.3)	Other health-care practitioners (HP.3.3)	
	Ambulatory health-care centres (HP.3.4)	Ambulatory health-care centres (HP.3.4)	
		Providers of home-health services (HP.3.5)	
Long-term care services (HC.3.1 + HC.3.2 + HC.3.4)	100%	100%	
	Medical practices (HP.3.1)	Medical practices (HP.3.1)	
	Other health-care practitioners (HP.3.3)	Other health-care practitioners (HP.3.3)	
	Ambulatory health-care centres (HP.3.4)	Ambulatory health-care centres (HP.3.4)	
		Providers of home-health services (HP.3.5)	

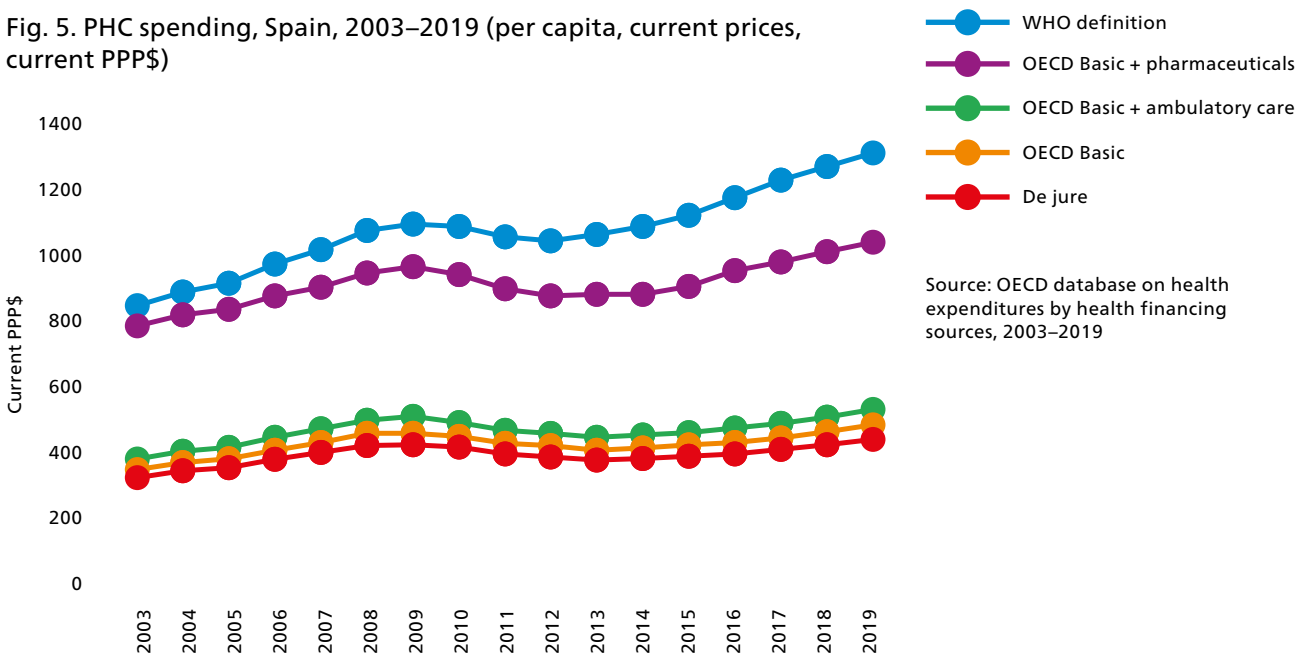
Table 4. contd

Component definition (SHA 2011 code)	De jure	De facto = optimal	WHO
Laboratory services (HC.4.1)	100%	100%	
	Medical and diagnostic laboratories (HP.4.2)	Medical and diagnostic laboratories (HP.4.2)	
	All other ambulatory centres (HP.3.4.9)	All other ambulatory centres (HP.3.4.9)	
Imaging services (HC.4.2)	100%	100%	
	Medical practices (HP.3.1)	Medical practices (HP.3.1)	
	Other health-care practitioners (HP.3.3)	Other health-care practitioners (HP.3.3)	
	Ambulatory health-care centres (HP.3.4)	Ambulatory health-care centres (HP.3.4) Providers of home-health services (HP.3.5)	
Ambulance services (HC.4.3)	100%	100%	
	Medical practices (HP.3.1)	Medical practices (HP.3.1)	
	Other health-care practitioners (HP.3.3)	Other health-care practitioners (HP.3.3)	
	Ambulatory health-care centres (HP.3.4)	Ambulatory health-care centres (HP.3.4) Providers of home-health services (HP.3.5)	
Preventive services (HC.6)	100%	100%	100%
	HC.6.nec, HC.6.1.3, HC.6.1.nec, HC.6.2, HC.6.3, HC.6.4, HC.6.5.1, HC.6.5.4.4	HC.6.nec, HC.6.1.3, HC.6.1.nec, HC.6.2, HC.6.3, HC.6.4, HC.6.5.1, HC.6.5.4.4	
Pharmaceuticals, medical goods and therapeutic appliances (HC.5.1.1 + HC.5.1.2 + HC.5.1.3 + HC.5.2)	100%	100%	80% of HC.5.1.1, HC.5.1.2, HC.5.1.3
	Medical practices (HP.3.1)	HC.5.1.1 + HC.5.1.2 for all providers	
	Other health-care practitioners (HP.3.3)	HC.5.1.3 + HC.5.2 for medical practices (HP.3.1)	
	Ambulatory health-care centres (HP.3.4)	Other health-care practitioners (HP.3.3) Ambulatory health-care centres (HP.3.4)	
Governance (HC.7)	100%	100%	100%
	HC.7.1 + HC.7.2	HC.7.1 + HC.7.2	80% of
	Medical practices (HP.3.1)	Medical practices (HP.3.1)	HC.7
	Other health-care practitioners (HP.3.3)	Other health-care practitioners (HP.3.3)	
	Ambulatory health-care centres (HP.3.4)	Ambulatory health-care centres (HP.3.4)	

Conclusion

The country-specific measure of PHC used in the model is closer to the OECD than the WHO global definition of PHC spending. In terms of per capita spending (Fig. 5), the trend line between 2003 and 2019 shows how the gap between the Spanish and WHO definitions has expanded: in 2003 expenditure according to the WHO definition was twice as high as that according to the country-specific definition, while in 2019 it was three times as high, keeping in line with the OECD definition. The major reasons for this gap are found in the inclusion of primary care support services, pharmaceutical spending, services provided by specialists in the ambulatory regime and long-term care services in recent years. Compared internationally, primary care spending is rather low in relative terms in Spain owing to the strength of hospital services and the proportionally high spending on medicines prescribed by doctors.

Fig. 5. PHC spending, Spain, 2003–2019 (per capita, current prices, current PPP\$)



Comparative analysis

The comparative analysis of the country case studies revealed a number of methodological and conceptual issues that the research team members believe warrant attention and further action.

Methodological issues

HC and HP classifications

Expenditure data exported from the OECD health expenditure and financing database are mapped using two classifications (HC and HP). WHO's GHED does not publish expenditure mapped with HP, so HC and HP mapping cannot be connected. This means that GHED data cannot be used to model PHC spending at a country level if both classifications are needed for PHC definition. Therefore, WHO's GHED in its current state has limited utility for country-level stakeholders interested in a deeper analysis of PHC spending patterns, effectiveness and efficiency.

The OECD database allows users to extract datasets with HC and HP classifications filtered for a particular disease expenditure (DIS) classification code, but data mapped with DIS classification are scarce. Although expenditure is mapped with DIS classification (for some countries) in WHO's GHED, this cannot be used to measure PHC expenditure because it is not linked with either HC or HP classifications.

Classification standardization and level of detail

The OECD database uses standard HC and HP codes, enabling cross-country comparison (within OECD countries). However, the codes used are general – two-digit HP codes and three-digit HC codes only for outpatient care and goods – making it hard to capture service delivery peculiarities and to build country-specific PHC definitions more accurately.

Countries with full health accounts studies (prepared using WHO's HAPT) use more disaggregated codes that are useful for modelling. Without standardization or other adjustments, however, cross-country comparison is difficult.

Key conceptual issues across country case studies and policy considerations

Several common conceptual issues emerged from the country case studies, for which the research team proposed and applied customized country-specific solutions. It should be noted that some of these conceptual issues are acknowledged and noted as limitations of the SHA 2011 or the WHO global measure of PHC spending (10). Nevertheless, certain country-specific solutions applied by the research team have the potential to be transformed into approaches that can be more universally applied across several countries, subregions or perhaps even

the whole WHO European Region. These issues and policy considerations are presented below.

A balance should be found between agreeing on a policy-relevant definition for a specific country (or region/subregion) and having sufficient data to support such a definition. A general lack of agreement on an internationally accepted, precise definition of what activities comprise PHC and the universally accepted/applied scope of primary care providers across countries complicated the task of creating “optimal” country-specific PHC definitions. It was further constrained by the complexities of mapping any proposed definition into and across SHA 2011 WHO and OECD frameworks.

Consideration should be given to including aspects of specialized outpatient care, day care and even inpatient curative services (such as uncomplicated deliveries) in country-specific PHC definitions, using consistent rules across countries in eastern Europe and central Asia (EECA). In most high-income countries, hospitals rarely provide first-contact general outpatient services. In contrast, hospitals provide the majority of these services in many low- and middle-income countries, including those in the EECA subregion (as evidenced by the Kyrgyz and Georgian case studies), although they are reported as specialized outpatient curative care and specialized curative day care. Thus, excluding all specialized outpatient care from the PHC definition, as suggested by the WHO global measure, may lead to underestimation of expenditure on these services, which may mostly be first-contact PHC services.

A similar problem exists with PHC outpatient or even day care and inpatient (for uncomplicated vaginal deliveries) specialized services. Antenatal care and uncomplicated vaginal deliveries, early child development and noncommunicable disease management are included as essential components of the relevant care or disease management guideline or protocol at the PHC level in many countries, whether these services are delivered by specialists such as obstetricians and gynaecologists, paediatricians, endocrinologists, cardiologists and so on or not. The research team members used “consumption-defined” boundary criteria (similar to those used to define the prevention functional category in SHA 2011 (18)) to include/account for these specialized services, by assigning the share of expenditure to relevant specialized services functional and provider codes based on:

- expert opinion (for the Kyrgyzstan and Georgia case studies);
- a proxy – for example, the rate of reported caesarean sections for maternity hospitals or maternity units to disentangle expenditure related to uncomplicated vaginal deliveries (for the Georgia case study); or
- a share of actual expenditure by the relevant specialist offices, which was applied for gynaecologists (for the North Macedonia case study).

Including 100% (or at least over 90% of pharmaceutical expenditure) in PHC country-specific measures and reporting and tracking this as a separate consumption effectiveness indicator should also be considered. The key rationale for including only 80% of pharmaceutical expenditure in

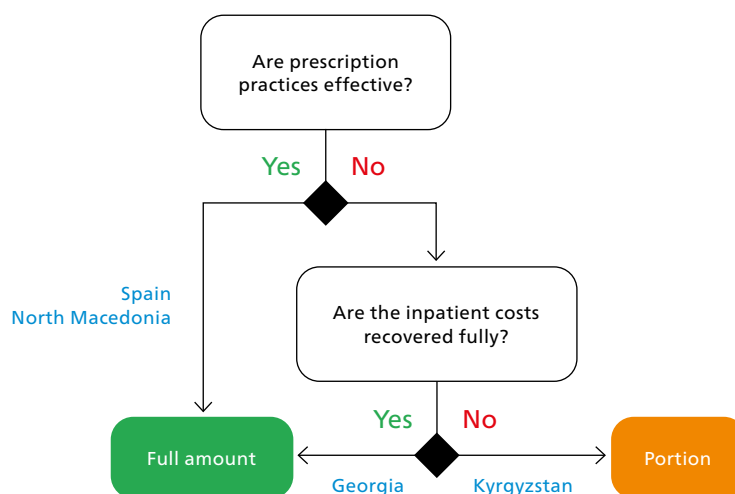
the WHO global PHC measure was that some pharmaceuticals dispensed by pharmacies in low- and middle-income countries are used for hospital patients. This is the case in one of the case study countries (Kyrgyzstan), but not in most EECA countries. Two factors might determine whether the full amount or a proportion of expenditure on over-the-counter pharmaceuticals (HC.5.1.2) should be attributed to PHC care:

- regulated consumption of pharmaceuticals (via effective prescription practices); and
- the degree of recovery of inpatient care costs by existing reimbursement (full or partial).

In addition, deviation from approved clinical standards can be another reason patients have to purchase and supply their own drugs from external pharmacies if hospitalized (Fig. 6).

Fig. 6. Algorithm for including HC.5.1.2 in PHC expenditure measures

Source: authors



Moreover, the level of pharmaceutical spending and its implications for households also depend on the effectiveness of PHC services and the financial protection that PHC service coverage delivers in a specific country, so this could be used as the relevant proxy measure. In general, countries are praised for high PHC spending: the greater their expenditure on PHC, the more effective and efficient their health system is considered. However, taking into account the high share of pharmaceutical expenditure – particularly in EECA countries – the principle “more is better” does not apply. Instead, what matters is the share of public spending in total PHC consumption, and of both absolute and relative spending on the non-pharmaceutical part of PHC spending. Policy-makers need to be made aware of the issue of irrational use of pharmaceuticals, which inflates PHC expenditure, and pharmaceutical consumption

should be monitored as a separate indicator within PHC consumption (as proposed for the second OECD global measure – see Box 3 above).

The possibility of including all or aspects of ancillary services (laboratories, imaging and ambulances) in country-specific and possibly subregional definitions across EECA countries should be explored. For all three countries from the EECA subregion in this analysis, based on the country-specific de jure and de facto definitions of PHC, the research team felt compelled to include all three categories of ancillary services (which are excluded from the global definitions) in the country-specific definitions of PHC expenditure – either as 100% or as a specific share of expenditure reported by relevant providers (such as patient transport providers, and medical and diagnostic laboratories).

The share of total PHC expenditure in the previous year could be used to determine the allocation formula for governance expenditure to PHC consumption. The research team members suggested this approach as more logical and adaptable to country contexts for all four countries in the analysis.

Discussion and conclusions

After comparing the results of the four country case studies, the research team concluded that country context-relevant definitions can be derived from the WHO global PHC definition using ICHA HC and HP classifications. The measures of PHC expenditure corresponding to the de jure and de facto PHC definitions may differ significantly from both the global measures and an optimal (or desirable) country-specific PHC expenditure measure. Key elements of PHC consumption determining differences and commonalities in the PHC service and provider architecture in the selected countries were identified that might be relevant for the EECA subregion (at least). However, methodological coherence and data quality and granularity (preventing or supporting common regional or subregional measures) need further exploration.

A country- or subregion-specific PHC definition would deliver several added-value benefits, especially for policy-makers at the national level, by making it possible to:

- reflect and react to differences in PHC consumption caused by the de jure, de facto and optimal PHC definitions and measures, and relevant organization and coverage of PHC services;
- monitor the efficiency of PHC spending by tracking spending on each level of care (hospital inpatient and outpatient, day care, specialized outpatient and ambulance) for essential services that should optimally be provided in PHC settings, as defined by the country, since being able to demonstrate effective use of the available resources is a key focus of ministries of finance, so high-quality evidence can be a key input into strengthening the health sector's position during the budget negotiation process;
- assess the role PHC plays in managing priority (high-burden) diseases (using the DIS classification) and the efficiency of PHC performance (using the de facto definition); and
- track and (when necessary) modify PHC expenditure – on preventive versus curative care, and on services/salaries versus medicines versus laboratory tests.

Additional benefits may also be derived from using a refined modelling tool to:

- compare total PHC expenditure data or elements thereof in a specific country to others in the WHO European Region (or subregion) or OECD countries while accounting for country-specific measures; and
- use several custom-tailored country-specific definitions as a dashboard for policy planning, implementation and evaluation.

To translate these findings into action at the country or regional level, the country case studies indicate the need for considerable investment in better data and customization of coding within the existing SHA 2011 framework for two purposes:

- to track PHC spending and compare countries across the Region and subregions (or groups of countries with the same type of data sources); and
- to evaluate PHC policy decisions and their impact on PHC-related consumption and expenditure.

Suggestions for action

The next steps can be taken in four directions – two on the supply side and two on the demand side.

Supply-side actions are:

- developing the methodology for building country-tailored PHC definitions from SHA 2011 classifications (including the improvement of data granularity and quality); and
- promoting the PHC dynamic modelling tool and tailoring it to the needs of different groups of end-users.

Demand-side actions are:

- familiarizing potential end-users with expenditure tracking concepts (SHA 2011) and their application to strategic planning (UHC implementation); and
- developing an analytical framework to transform PHC modelling results into policy recommendations.

These are discussed in greater detail below.

Developing the methodology for building country-tailored PHC definitions

Prospects for methodological advancement depend on the structure and availability of datasets. Therefore, actions related to data granularity and quality are proposed for each of the following three groups.

- For the OECD group, further levels of classification are available, including health-care financing schemes (HF) and revenue of health-care financing schemes (FS). The possibility of accessing “three-dimensional” datasets, with each line of expenditure mapped with three classifications to transactions such as HF × HC × HP or FS × HC × HP matrices should therefore be explored.
- For the GHED/HAPT group (countries producing health accounts studies using WHO’s HAPT), the following possibilities should be explored:
 - o developing the GHED to enable it to extract expenditure mapped with paired HC and HP classifications; or
 - o extracting “three-dimensional” datasets directly from the full study, including DIS × HC × HP matrices.
- For the GHED/Health Accounts Questionnaire (HAQ) group, the possibility of accessing HC × HP matrix worksheets of the HAQ should be explored.

The possibility of more detailed guidelines for interpreting the HC and HP classification descriptions when to using SHA 2011 classifications for building PHC definitions should be explored. This could include standardization of classifications, and developing international guidelines for DIS classification to enable cross-country comparisons of PHC measures.

- The extent to which countries have customized HC and HP classifications should be assessed in order to propose solutions for standardizing them so that HC and HP subcategories (including four-digit and five-digit codes) have the same meaning.
- An intermediate tool (a “translator”) should be developed, with a dictionary of country-specific HC, HP and DIS classifications, in order to recode them, using a common subregional set of classifications.
- A guideline should be developed with a detailed description of health-care providers, reflecting peculiarities of individual subregions (for instance, ambulance services that differ from patient transportation services in OECD countries).

Tailoring the PHC dynamic modelling tool to countries’ needs

The capacity of the tool to present PHC measures beyond HC and HP classification should be expanded to:

- enable countries to understand the share of public and private financing in PHC spending corresponding to country-specific PHC definitions (conditional on the availability of “three-dimensional” datasets, as described above) HF and FS classifications; and
- enable countries in the GHED/HAPT group to understand the role of PHC in addressing the high-burden diseases by facilitating visualization and comparison of measures of PHC spending for priority diseases.

The tool’s application should be expanded geographically.

- To cover countries using HAQ to report on tracking expenditure (GHED/HAQ group), a separate tool should be developed, loaded with expenditure data mapped to HC and HP classifications (conditional on access to the data as described below), and enabling users to build PHC definitions and compare custom measures to the WHO global measure.
- The tool should be developed for cross-group comparison, enabling users to compare GHED/HAPT (and GHED/HQ) PHC measures with the OECD definitions and vice versa.

The tool should be made more user-friendly by developing dashboards to make it easier for policy-makers to visualize PHC measures from a particular angle.

A country-tailored PHC definition repository should be developed, using a centralized database with an inventory of country-tailored PHC definitions and PHC measures to supply evidence for comparative analysis.

Familiarizing end-users with expenditure tracking concepts and their application to strategic planning

- A user guide explaining the SHA 2011 framework basics and their application to building PHC definitions should be developed.
- A user manual for the PHC dynamic modelling tool – including video tutorials – should be developed, and assistance in using the tool independently should be provided to countries.

Developing an analytical framework to transform PHC modelling results into policy recommendations

- Use of country case studies to aid analysis of policy decisions and their impact on PHC measures should be promoted (to inform decision-makers about the consequences of certain policy choices on PHC-related consumption structure and expenditure).
- An analytical framework should be developed to assess the importance/role of various components of PHC in managing priority diseases.

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Annex 1

ICHA classification codes

Table A1. Classification of health-care functions (HC)

Note: n.e.c. = not elsewhere classified.

HC code	HC code description
1	Curative care
1.1	Inpatient curative care
1.1.1	General inpatient curative care
1.1.2	Specialized inpatient curative care
1.1.nec	Unspecified inpatient curative care (n.e.c.)
1.2	Day curative care
1.2.1	General day curative care
1.2.2	Specialized day curative care
1.2.nec	Unspecified day curative care (n.e.c.)
1.3	Outpatient curative care
1.3.1	General outpatient curative care
1.3.2	Dental outpatient curative care
1.3.3	Specialized outpatient curative care
1.3.nec	Unspecified outpatient curative care (n.e.c.)
1.4	Home-based curative care
1.nec	Unspecified curative care (n.e.c.)
2	Rehabilitative care
2.1	Inpatient rehabilitative care
2.2	Day rehabilitative care
2.3	Outpatient rehabilitative care
2.4	Home-based rehabilitative care
2.nec	Unspecified rehabilitative care (n.e.c.)
3	Long-term care (health)
3.1	Inpatient long-term care (health)
3.2	Day long-term care (health)
3.3	Outpatient long-term care (health)
3.4	Home-based long-term care (health)
3.nec	Unspecified long-term care (n.e.c.)
4	Ancillary services (specified by function)
4.1	Laboratory services
4.2	Imaging services
4.3	Patient transportation
4.nec	Unspecified ancillary services (n.e.c.)
5	Medical goods (specified by function)
5.1	Pharmaceuticals and other medical durable goods
5.1.1	Prescribed medicines
5.1.2	Over-the-counter medicines
5.1.3	Other medical durable goods

Table A1. contd

HC code	HC code description
5.2.1	Glasses and other vision products
5.2.2	Hearing aids
5.2.3	Other orthopaedic appliances and prosthetics (excluding glasses and hearing aids)
5.2.9	All other medical durables, including medical technical devices
5.nec	Unspecified medical goods (n.e.c.)
6	Preventive care
6.1	Information, education and counselling (IEC) programmes
6.1.1	Addictive substances IEC programmes
6.1.1.1	Tobacco IEC programmes
6.1.1.2	Alcohol IEC programmes
6.1.1.3	Drugs IEC programmes
6.1.1.nec	Other and unspecified addictive substances IEC programmes (n.e.c.)
6.1.2	Nutrition IEC programmes
6.1.3	Safe sex IEC programmes
6.1.4	Physical inactivity IEC programmes
6.1.nec	Other and unspecified IEC programmes (n.e.c.)
6.2	Immunization programmes
6.3	Early disease detection programmes
6.4	Healthy condition monitoring programmes
6.5	Epidemiological surveillance and risk and disease control programmes
6.5.1	Planning & Management
6.5.2	Monitoring & Evaluation (M&E)
6.5.3	Procurement & supply management
6.5.4	Interventions
6.5.4.1	Male circumcision
6.5.4.2	Condom promotion and distribution
6.5.4.3	Syringe-exchange programme
6.5.4.4	Drug substitution programme
6.5.4.nec	Other and unspecified interventions (n.e.c.)
6.5.nec	Unspecified epidemiological surveillance and risk and disease control programmes (n.e.c.)
6.6	Preparing for disaster and emergency response programmes
6.nec	Unspecified preventive care (n.e.c.)
7	Governance, and health system and financing administration
7.1	Governance and health system administration
7.1.1	Planning & Management
7.1.2	Monitoring & Evaluation (M&E)
7.1.3	Procurement & supply management
7.1.nec	Other governance and health system administration (n.e.c.)
7.2	Administration of health financing
7.nec	Unspecified governance, and health system and financing administration (n.e.c.)
9	Other health care services not elsewhere classified (n.e.c.)

Table A2. Classification of health-care providers (HP)

Note: n.e.c = not elsewhere classified.

HP code	HP code description
1	Hospitals
1.1	General hospitals
1.2	Mental health hospitals
1.3	Specialized hospitals (other than mental health hospitals)
1.nec	Unspecified hospitals (n.e.c.)
2	Residential long-term care facilities
2.1	Long-term nursing care facilities
2.2	Mental health and substance abuse facilities
2.9	Other residential long-term care facilities
3	Providers of ambulatory health care
3.1	Medical practices
3.1.1	Offices of general medical practitioners
3.1.2	Offices of mental medical specialists
3.1.3	Offices of medical specialists (other than mental medical specialists)
3.1.nec	Unspecified medical practices (n.e.c.)
3.2	Dental practice
3.3	Other health care practitioners
3.4	Ambulatory health care centres
3.4.1	Family planning centres
3.4.2	Ambulatory mental health and substance abuse centres
3.4.3	Free-standing ambulatory surgery centres
3.4.4	Dialysis care centres
3.4.5	Specialized ambulatory health care centres
3.4.9	All other ambulatory centres
3.5	Providers of home health care services
3.nec	Unspecified providers of ambulatory health care (n.e.c.)
4	Providers of ancillary services
4.1	Providers of patient transportation and emergency rescue
4.2	Medical and diagnostic laboratories
4.9	Other providers of ancillary services
5	Retailers and other providers of medical goods
5.1	Pharmacies
5.2	Retail sellers and other suppliers of durable medical goods and medical appliances
5.9	All other miscellaneous sellers and other suppliers of pharmaceuticals and medical goods
6	Providers of preventive care
7	Providers of health care system administration and financing
7.1	Government health administration agencies
7.2	Social health insurance agencies
7.3	Private health insurance administration agencies
7.9	Other administration agencies
8	Rest of economy
8.1	Households as providers of home health care
8.2	All other industries as secondary providers of health care
8.3	Community health workers (or village health worker, community health aide, etc.)
8.9	Other industries n.e.c.
9	Rest of the world
nec	Unspecified health care providers (n.e.c.)

Table A3. Classification of diseases/conditions (DIS)

DIS	DIS code description
1	Infectious and parasitic diseases
1.1	HIV/AIDS and other sexually transmitted diseases (STDs)
1.1.1	HIV/AIDS and opportunistic infections (OIs)
1.1.1.1	HIV/AIDS
1.1.1.2	TB/HIV
1.1.1.3	Other OIs due to AIDS
1.1.1.nec	Unspecified HIV/AIDS and OIs (n.e.c.)
1.1.2	STDs other than HIV/AIDS
1.1.nec	Unspecified HIV/AIDS and other STDs (n.e.c.)
1.2	Tuberculosis (TB)
1.2.1	Pulmonary TB
1.2.1.1	Drug-sensitive tuberculosis (DS-TB)
1.2.1.2	Multidrug-resistant tuberculosis (MDR-TB)
1.2.1.3	Extensively drug-resistant tuberculosis (XDR-TB)
1.2.1.nec	Unspecified pulmonary tuberculosis (n.e.c.)
1.2.2	Extrapulmonary TB
1.2.nec	Unspecified tuberculosis (n.e.c.)
1.3	Malaria
1.4	Respiratory infections
1.5	Diarrheal diseases
1.6	Neglected tropical diseases
1.7	Vaccine-preventable diseases
1.8	Hepatitis
1.nec	Other and unspecified infectious and parasitic diseases (n.e.c.)
2	Reproductive health
2.1	Maternal conditions
2.2	Perinatal conditions
2.3	Contraceptive management (family planning)
2.nec	Unspecified reproductive health conditions (n.e.c.)
3	Nutritional deficiencies

Note: n.e.c = not elsewhere classified.

Source: OECD, Eurostat, WHO. A System of Health Accounts 2011: revised edition. Paris: OECD Publishing; 2017 (https://www.oecd-ilibrary.org/social-issues-migration-health/a-system-of-health-accounts-2011_9789264270985-en).

Table A3. contd

DIS	DIS code description
4	Noncommunicable diseases
4.1	Neoplasms
4.2	Endocrine and metabolic disorders
4.2.1	Diabetes
4.2.nec	Other and unspecified endocrine and metabolic disorders (n.e.c.)
4.3	Cardiovascular diseases
4.3.1	Hypertensive diseases
4.3.nec	Other and unspecified cardiovascular diseases (n.e.c.)
4.4	Mental & behavioural disorders, and neurological conditions
4.4.1	Mental (psychiatric) disorders
4.4.2	Behavioural disorders
4.4.3	Neurological conditions
4.4.nec	Unspecified mental & behavioural disorders and neurological conditions (n.e.c.)
4.5	Respiratory diseases
4.6	Diseases of the digestive system
4.7	Diseases of the genitourinary system
4.8	Sense organ disorders
4.9	Oral diseases
4.nec	Other and unspecified noncommunicable diseases (n.e.c.)
5	Injuries
5.1	Road traffic accidents
5.nec	Other and unspecified injuries (n.e.c.)
6	Not disease specific
nec	Other and unspecified diseases/conditions (n.e.c.)

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The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

World Health Organization Regional Office for Europe

UN City, Marmorvej 51, DK-2100 Copenhagen Ø, Denmark
Tel.: +45 45 33 70 00 Fax: +45 45 33 70 01
Email: eurocontact@who.int
Website: www.who.int/europe

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