Identifying Indicators for Tracking Pharmaceutical Expenditure in Low- and Middle-Income Countries

August 2017
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ACKNOWLEDGMENTS

The Systems for Improved Access to Pharmaceuticals and Services (SIAPS) program would like to express its appreciation to the organization and individuals that contributed to the development of this paper. Special thanks to the Results for Development (R4D) Program for leading the preparation of the initial Guide to Tracking Pharmaceutical Expenditures in a Health System, which recommended that SHA methodology be applied to track Pharmaceutical Expenditures.

Our gratitude goes to following SIAPS staff who contributed to the conceptualization, policy discussions, writing and reviewing of this paper:

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### ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>CHE</td>
<td>current health expenditure</td>
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<tr>
<td>EML</td>
<td>essential medicines list</td>
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<td>FP</td>
<td>factor of provision</td>
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<tr>
<td>FS</td>
<td>revenue of financing schemes</td>
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<td>GDP</td>
<td>gross domestic product</td>
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<td>HAPT</td>
<td>Health Account Production Tool</td>
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<tr>
<td>HC</td>
<td>health care function</td>
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<td>HCR</td>
<td>health care-related class</td>
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<td>HF</td>
<td>health financing scheme</td>
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<td>HMIS</td>
<td>health management information system</td>
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<td>HP</td>
<td>health care provider</td>
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<tr>
<td>ICHA</td>
<td>International Classifications for Health Accounts</td>
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<tr>
<td>LMIC</td>
<td>low- and middle-income country</td>
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<tr>
<td>LTC</td>
<td>long-term care</td>
</tr>
<tr>
<td>NEML</td>
<td>national essential medicines list</td>
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<tr>
<td>NHA</td>
<td>national health account</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
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<td>OOP</td>
<td>out of pocket</td>
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<td>OTC</td>
<td>over the counter</td>
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<td>PE</td>
<td>pharmaceutical expenditure</td>
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<td>R4D</td>
<td>Results for Development</td>
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<tr>
<td>RI</td>
<td>reporting item</td>
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<tr>
<td>SHA</td>
<td>System of Health Accounts</td>
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<tr>
<td>SIAPS</td>
<td>Systems for Improved Access to Pharmaceuticals and Services</td>
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<tr>
<td>TB</td>
<td>tuberculosis</td>
</tr>
<tr>
<td>TCAM</td>
<td>traditional, complementary, and alternative medicines</td>
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<tr>
<td>THE</td>
<td>total health expenditure</td>
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<tr>
<td>TPE</td>
<td>total pharmaceutical expenditure</td>
</tr>
<tr>
<td>TPuME</td>
<td>total public sector medicine expenditure</td>
</tr>
<tr>
<td>TPvME</td>
<td>total private sector medicine expenditure</td>
</tr>
<tr>
<td>UHC</td>
<td>universal health coverage</td>
</tr>
<tr>
<td>USAID</td>
<td>US Agency for International Development</td>
</tr>
<tr>
<td>VEN</td>
<td>vital, essential, and nonessential</td>
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<td>WHO</td>
<td>World Health Organization</td>
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</table>
GLOSSARY

**Beneficiaries**: Groups that consume, or benefit from, health care goods and services

**Beneficiary characteristics**: Classifications, such as disease, gender, age, region, and economic status (1)

**Catastrophic spending or financial catastrophe**: Direct out-of-pocket payments exceeding 40% of household income net of subsistence needs (calculated as total household income minus the cost for subsistence needs); subsistence needs are determined as the median of household food expenditure in the country (by WHO), or out-of-pocket payments exceeding 10% of total household income (by the World Bank) (2)

**Current health expenditure (CHE)/current expenditure on health (CHE)**: Final consumption expenditure of resident units on health care goods and services (1); total uses of resident units of health care services and goods at current prices (3)

**Factors of provision (FP)**: The valued inputs (health and non-health) used in the process of providing health care, such as labor costs (human resources), capital consumed, medical materials, non-medical supplies and utilities, taxes or duties, and external purchased services

**Gross capital formation**: Investment in fixed assets (infrastructure, machinery, equipment, etc.) measured by the total value of the fixed assets that health providers have acquired during the accounting period (less than the value of the disposal of assets) and that are used continuously for more than one year in the provision of health services (1)

**Health financing scheme (HF)**: Main types of financing arrangements through which health services are paid for and obtained by people; financing schemes categorize spending according to criteria, such as mode of participation in the scheme (compulsory vs. voluntary), the basis for entitlements (contributory vs. non-contributory), and the extent of risk pooling (1)

**Health care function (HC)**: Direct consumption of health services and goods by the population, which may include curative care, rehabilitative care, long-term care, ancillary services, medical goods/pharmaceuticals, preventive care, and governance and health system administration (1)

**Health care provider (HP)**: Organizations and actors who deliver medical goods and services as their main activity, such as hospitals, health centers, clinics, and pharmacies (1)

**Revenue of health care financing scheme (FS)**: Types of revenue or funding sources that are channeled to health care financing schemes to purchase health care services or goods (1)

**Total health expenditure (THE)**: Total expenditure on health measures the final use of resident units of health care goods and services (current expenditure on health) plus gross capital formation in health care provider industries (institutions where health care is the predominant activity) (1, 3)

**Total pharmaceutical expenditure (TPE)**: Obtained by adding the explicitly reported part (prescribed and over-the-counter medicines) and the other components of pharmaceutical consumption, regardless of the consumption path, such as curative care, rehabilitative care, long-term care, etc. (1)
INTRODUCTION

Pharmaceutical expenditure (PE) is one of the largest components of current health expenditure (CHE). Target 3.8 of the Sustainable Development Goals recognizes that achieving universal health coverage (UHC) requires access to quality essential health care and related medicines while providing protection from financial risk. Financial protection against cost of medicines is important for both individuals and governments because medicines make up nearly half of people’s out-of-pocket (OOP) health care expenditures. In addition, medicines in low-income countries have a higher share of total health expenditure (THE) (30.4%) compared with high-income countries (19.7%) (4). Catastrophic health expenditure, defined as more than 10% of total household income, is also increasing—from 9.7% in 2000 to 11.7% in 2010 (5). OOP spending is inequitable between rich and poor, and its reduction across the board is a primary target for UHC (6, 7).

In low- and middle-income countries (LMICs), access to affordable pharmaceuticals is often challenged by high disease burdens, inadequate financing and inequitable resource allocations, inefficient pharmaceutical systems, and moreover, lack of information. To make better use of limited resources, policy makers need to understand where funding for pharmaceuticals is coming from, who spends how much on what, what is the country’s trend in PEs, and how the country compares with other countries in the same region or of similar income level. However, these questions largely go unanswered because reliable information on PE is unavailable or lacking sufficient detail (1, 7). The Lancet’s Commission on Essential Medicines Policies recommended that governments and national health systems invest in the capacity to accurately track expenditure of medicines in the public and private sectors and disaggregate it between prepaid and OOP expenditure and among important key populations (7).

Consistent with this recommendation, the USAID-funded Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program endeavored to help LMICs track PEs systematically to inform decisions related to the mobilization and allocation of domestic resources and to formulate necessary pharmaceutical finance policies as a key strategy for achieving UHC. Working with its partner, Results for Development (R4D), in 2014, SIAPS reviewed existing approaches that track health and/or PEs. One of the key recommendations from that review was to explore the feasibility of adopting the System of Health Accounts (SHA) methodology (8), whenever possible, to capture PEs. Key advantage of such methodology is that it has already been adopted by WHO and is used in LMICs for producing national health account (NHA) reports. Adopting the methodology will thus allow the collection, analysis, and reporting for PEs to be integrated within the existing SHA methodology and NHA system, thus allowing the production of standardized and internationally comparable estimates and reports.

In response to this recommendation, SIAPS collaborated with the USAID-funded Health and Finance Project to leverage its expertise in widely implementing and adapting the SHA/NHA methodology with SIAPS’ expertise in pharmaceutical management. We agreed that a detailed approach along with an implementation guide were needed to help LMICs track PEs using, whenever possible, the existing SHA framework methodology.
Toward this end, SIAPS established a set of core PE indicators that best address key pharmaceutical financing policies, most prominently those around UHC. In doing so, SIAPS reviewed the SHA/NHA methodology and several NHA past reports determining the feasibility of integrating these indicators into SHA/NHA and identifying common challenges in tracking PEs. It is proposed that the suggested set of core indicators be piloted in conjunction with in-country NHA exercises or with other common surveys. Results from the pilot could then serve to develop the final approach and the implementation guide in conjunction with WHO.

This paper presents the SHA/NHA methodology as a potential platform for capturing PEs and discusses some of the challenges encountered in collecting such expenditure data. It identifies key policy questions that underpin the need for LMICs to comprehensively monitor PEs and discusses a set of proposed indicators they would need to formulate and monitor effective financing policies, particularly toward achieving UHC. It also provides information that enables LMICs and their development partners to realize the challenges in applying the SHA methodology to PE tracking and/or to data collection so that they can take them into consideration during the next phase of piloting these indicators.

The target audience for this paper includes major stakeholders involved in the design and implementation of NHA exercises, including donors, policy makers, health and pharmaceutical system managers, NHA technical working teams, health and pharmaceutical financing managers, pharmaceutical benefit scheme providers, and members of national-or facility-level medicine and therapeutics committees.
METHODOLOGY

We started by reviewing the work developed by SIAPS in collaboration with R4D in 2014 to ascertain the initial recommendation and to identify existing literature and sources on PE indicators. We then reviewed the SHA/NHA methodology as a potential platform for tracking PEs.

We then started to compile all the key policy questions that policy makers and pharmaceutical sector leaders would require answers to in order to develop policies and inform the discourse on domestic resource mobilization and spending on pharmaceuticals, if they were to achieve the financial protection and medicines access goals of UHC, consistent with the Sustainable Development Goals. These questions, which we identified on the basis of our experiences in supporting policy development in LMICs, were grouped into three policy areas: a) resource mobilization, financing sources, and coverage; b) resource allocation, equity, and financial protection; and c) efficiency.

For each of the policy areas, we then ascertained the pertinent expenditure questions and used these to help us determine the necessary data elements, which in turn informed the selection of the indicators. Selected indicators were drawn from known existing sources or by formulating new ones, if needed. Indicators were selected based on the extent to which they informed answers to the identified three policy areas and their respective expenditure questions. Where possible and appropriate, we selected expenditure questions and/or data elements that are in line with those included in the SHA framework developed by the Organization for Economic Cooperation and Development (OECD). To ensure standardization and comparability among countries and over time, we adopted the same SHA classifications of PE.

The 2014 review conducted in collaboration with R4D served as one source for selection of some indicators, but it was complemented by adaptation from other known sources to bridge the gap, especially in the policy area related to efficiency. For each of the indicators, we discussed the rationale for its inclusion, proposed a standard definition, and recommended sources for its data collection and calculation.

To better understand the status and challenges in collecting PE data, we also reviewed 30 readily available reports for NHA exercises conducted in LMICs during 1999 to 2015 to develop appropriate recommendations for the future piloting of the approach.

Finally, we discussed what LMICs and development partners would need to pilot and apply such indicators, and what next steps are needed to adopt a long-term standard methodology for monitoring PEs.
INTRODUCTION TO THE SHA AND NHA METHODOLOGY AND THE PE CONTEXT

This section briefly introduces the SHA and NHA as a methodology for tracking health expenditures. More importantly, it presents how the SHA and NHA currently encompass and classify PE within its methodology.

The SHA is an internationally standardized framework that systematically tracks the flow of financial resources and expenditures in national health systems. SHA is a widely used health accounting approach developed by the OECD. The first version of SHA (commonly referred to as SHA 1.0) was published in 2000 and was originally developed for OECD countries (3). SHA 1.0 was then adapted in 2003 by the World Bank, WHO, and the US Agency for International Development (USAID) (9) with special applications for LMICs to produce NHA reports. In 2011, a revised version of SHA (known as SHA 2011) was published by OECD, Eurostat, and WHO and is currently being used by all countries (1). SHA 2011 strengthens existing classifications and introduces new ones that expand the scope of analysis, supports the production of more detailed results, and provides a more comprehensive look at health expenditure flows (10). SHA addresses four basic sets of questions: Where do resources come from, where do they go, what kinds of services and goods do they purchase, and whom do they benefit? SHA uses a framework to illustrate the complex interactions of health financing flow, and uses International Classifications for Health Accounts codes to categorize expenditures. The SHA framework consists of a core framework with three dimensions and extended frameworks that interface with each core dimension (figure 1).

The framework and its dimensions are all briefly described along with examples in table 1 (1). The SHA coding system (e.g., HC [health care function], HP [health care provider], and HF [health financing scheme]) provides a standard for national and international reporting and comparison. Countries conducting health expenditure tracking exercises are expected to map their data with these codes to enable comparative data analysis and reporting. Details of this coding, as per SHA 2011, can be found in annex 1.
Table 1. SHA framework definitions

<table>
<thead>
<tr>
<th>SHA core framework and definitions</th>
<th>SHA extended framework (interfaces) and definitions</th>
<th>Questions to be answered</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HCs:</strong> Types of health goods (includes pharmaceuticals) and services consumed</td>
<td>Characteristics of beneficiaries: Types of consumers who use health goods and services (by disease, age, gender, income)</td>
<td>What kinds of goods or services are purchased, and whom do they benefit?</td>
<td>• Expenditure on curative care (HC1) by income quintiles</td>
</tr>
<tr>
<td><strong>HPs:</strong> Organizations and actors that, either primarily or as part of multiple activities in which they engage, deliver health care</td>
<td>Gross capital formation, factors of provision (FP), and external trade: Inputs or factors that enable delivery of services</td>
<td>Who spends the resources and to do what?</td>
<td>• Expenditure on pharmaceuticals (HC.5) by age group</td>
</tr>
<tr>
<td><strong>HFs:</strong> Main types of financing arrangements through which people receive health care</td>
<td>Revenue of financing schemes (FS) and financing agents: financial sources and the agents that manage the resources</td>
<td>Who is financing the services and goods and where do the resources come from?</td>
<td>• Expenditure by retailers and other providers of medical goods (HP5.)1 on materials and services used (FP.3)</td>
</tr>
</tbody>
</table>

In addition to the already described functions of the SHA core framework, an additional classification, that of “memorandum items” enables specific HC expenditure categories to be aggregated for further analysis of expenditures for categories that are not normally identified through a specific HC code or that go beyond a health care boundary. The memorandum item classification includes two groups (1):

- **Reporting items (HC.RI):** Identifies categories or alternative groups of health care goods and services that are not normally identified through a specific HC class; one of the RIs is total pharmaceutical expenditure (TPE)
- **Health care-related classes (HCRs):** Identifies categories that are related to health but go beyond the health care boundary (e.g., health promotion)

In principle, SHA uses a cross-classified matrix (such as HFxHC, HPxHC, HCx beneficiary groups, etc.) approach to organize and present health expenditure information. This enables

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1 Categories under “Retailers and other providers of medical goods (HP.5)” have been restricted to three: pharmacies; retail sellers and other suppliers of durable medical goods and appliances; and all other miscellaneous retail sellers and other suppliers of pharmaceuticals and medical goods. (SHA 2011, p. 128)
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countries to disaggregate an immense amount of data into a simple series of tables and generate indicators that respond to policy priorities. The matrices also enable countries to make comparisons between different sources and identify gaps and overlaps (1, 8). The majority of NHA results are presented as a set of tables. Depending on the objectives and availability of data, countries may generate indicators in one category (e.g., HCs) or two categories using the cross matrices.

For many countries, however, the complexity of SHA methodology and time consuming procedures have been a challenge to routinely produce NHA reports. Recently, WHO and USAID have developed a software tool, the Health Account Production Tool (HAPT)\(^2\) to lessen the complexity of the health accounts exercise. It provides step-by-step guidance on data capture, mapping, quality check, and analysis and facilitates the removal of double counting and weighting of non-surveyed data. It also provides a repository for health account data and tables, which can be easily accessed and used to facilitate data analysis in subsequent years (11, 12). The HAPT also has options for customizing classifications, such as age and gender, diseases, sub-national level, beneficiary. The tool includes five disease sub-accounts: reproductive health, HIV/AIDS, tuberculosis (TB), malaria, and child health. This provides the flexibility to apply the SHA methodology to one particular disease area, if needed.

**Where does PE fit into the SHA classifications?**

In SHA 2011, pharmaceuticals and other non-durable goods are represented by the code HC 5.1; this can be further classified as below:

- HC.5.1 for Pharmaceuticals and other non-durable goods
- HC.5.1.1 for Prescribed medicines
- HC.5.1.2 for Over-the-counter drugs (OTC)
- HC.5.1.3 for Other medical non-durable goods

The above categories include medical goods acquired by the beneficiary either as prescribed by a health care professional or by an OTC purchase. It is important to note that it does not include medical goods consumed when they are delivered by HPs during inpatient (including day care) stays. Pharmaceuticals consumed under the aforementioned inpatient setting are captured as part of other expenditures, such as curative care (HC.1), rehabilitative (HC.2), and long-term care (LTC) (HC.3).

TPE, a recognized global indicator that is important for planning and decision making, includes the explicitly reported parts (HC.5.1.1 + HC.5.1.2) and inpatients (including day care) and the other components of pharmaceutical consumption, regardless of the consumption path, e.g., within curative or rehabilitative care (1). Therefore, this creates a challenge in identifying actual TPEs.

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2 The HAPT can be downloaded from [http://www.who.int/health-accounts/tools/HAPT/en/](http://www.who.int/health-accounts/tools/HAPT/en/)
As mentioned in methodology, we grouped policy questions into three policy areas: a) resource mobilization, sources of finance, and coverage; b) resource allocation, equity, and financial protection; and c) efficiency. We then identified a set of related expenditure questions, data elements, and indicators that best answer those identified policy questions (table 2). We used a few parameters to guide us through the identification of expenditure data elements and indicators:

- Must be logically related, directly or indirectly, to the policy question(s)
- Should be internationally recognized
- Whenever possible, are in line with the SHA framework developed by the OECD so that data collection can be potentially integrated into country NHAs
- If not compatible with the SHA framework, should be feasible to collect with the least amount of additional effort

For standardization and consistency, we then defined the boundaries for PE tracking. Key areas for definition included the types of products, sectors, and cost elements to include or exclude. Whenever possible, we aligned these definitions with SHA 2011 for potential harmonization. Key PEs were defined to allow for:

- Inclusion of expenditures for all medicines (prescribed and OTC) but exclusion of medical consumables (non-durable medical goods), therapeutic devices, and medical durables; this classification is consistent with SHA 2011 classifications for HC.5.1.1 and HC.5.1.2
- Inclusion of pharmaceuticals pertaining to all levels of the health system, including those consumed in hospitals (in- and outpatients) and other day care settings; this classification is consistent with SHA 2011 classification for TPE
- Coverage of PEs in the public and private sectors unless stated otherwise
- Exclusion of spending on core management functions, such as medicine manufacturing, trade, regulation, procurement, quality control, distribution, dispensing, accounting, administration, human resources, information systems, and infrastructure, in line with SHA 2011, which classifies such services under capital formation, FPs, and administrative expenditures (HC.7), unless such elements are already built into the expenditure by default; for example, the price that a household pays for OTCs at a retail store may already be loaded with other core management functions, such as what is spent to procure, store, and dispense
### Table 2. Pharmaceutical financing policy and expenditure questions with required data elements

<table>
<thead>
<tr>
<th>Key pharmaceutical financing policy questions</th>
<th>Related PE questions</th>
<th>Required PE data elements</th>
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</thead>
<tbody>
<tr>
<td><strong>Resource mobilization, sources of finance, and coverage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Are we adequately investing/spending on pharmaceuticals?</td>
<td>o What is the annual TPE? What is the trend?</td>
<td>– THE and TPE</td>
</tr>
<tr>
<td>• Are our investments in pharmaceuticals growing to meet the demand of the population?</td>
<td>o What proportion of THE is PE? What is the trend?</td>
<td>– Demographic and GDP data</td>
</tr>
<tr>
<td>• To what extent are we able to diversify our pharmaceutical funding sources to ensure national self-reliance and financial protection objectives?</td>
<td>o What is the annual TPE per capita? What is the trend?</td>
<td>– Other countries’ PE data</td>
</tr>
<tr>
<td>• What is the financial gap to be covered in the event of a withdrawal of international cooperation?</td>
<td>o How do current levels of PE compare with that of neighboring countries/countries of similar income level?</td>
<td>– Time series data for the above information</td>
</tr>
<tr>
<td>o Does expenditure growth exceed demographic growth and gross domestic product (GDP) growth?</td>
<td>o What are the sources of pharmaceutical financing?</td>
<td>– PE funded by financing sources</td>
</tr>
<tr>
<td>o What is the proportion of each source of funding to TPE?</td>
<td>o What are the trends over time?</td>
<td>– PE paid by each financing scheme</td>
</tr>
<tr>
<td>o How is PE paid or reimbursed by the different financing schemes?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Resource allocation, equity, and financial protection</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Does PE adequately reflect health policy priorities/burden of disease?</td>
<td>o Do patterns of PE differ significantly between providers?</td>
<td>– PE by types of providers</td>
</tr>
<tr>
<td>• Is PE distributed equitably?</td>
<td>o How does PE per beneficiary type compare with that of other countries, and in time series?</td>
<td>– PEs by age/gender/disease/income quintile/region</td>
</tr>
<tr>
<td>• What are the key drivers of growth in PE?</td>
<td>o What proportion of TPE is paid by OOP?</td>
<td>– Total OOP PE</td>
</tr>
<tr>
<td>• What is the extent of the population covered by risk pooling?</td>
<td>o What is the pattern of OOP PE among income quintiles?</td>
<td>– OOP PE by income quintile</td>
</tr>
<tr>
<td>• Are there particular segments of the population that lack adequate financial protection?</td>
<td></td>
<td>– Average per capita PE in each region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>– Household data: income, age, gender, OOP PEs</td>
</tr>
<tr>
<td><strong>Efficiency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• What are the key drivers of growth in PE?</td>
<td>o Does expenditure growth represent growth in volumes, prices, or both?</td>
<td>– Sales of pharmaceuticals and trends, overall and by categories: generic, brand name, EML and VEN (prices and volumes)</td>
</tr>
<tr>
<td>• Is expenditure on pharmaceuticals efficient? Does it represent good value for money?</td>
<td>o What is the extent of PE that represents expired/damaged products?</td>
<td>– Costs of expired and damaged products</td>
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<td>o What is the extent of PE incurred by essential medicines list (EML) products in the public sector?</td>
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<td></td>
<td>o What is the extent of PE devoted to generic medicines?</td>
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<tr>
<td></td>
<td>o How much is spent on vital, essential, and nonessential (VEN) medicines?</td>
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</table>
As a result, we selected 18 indicators that capture the expenditure data elements identified in table 2. These indicators are intended to help policy makers and health managers track PEs pertaining to all three policy areas:

A. Resource mobilization, sources of finance, and coverage
B. Resource allocation, equity, and financial protection
C. Efficiency

Category A and B indicators were selected so that they can be generated based on the SHA 2011 core framework, and hence can be potentially incorporated into country NHA exercises. Given that it is not represented by the SHA framework, category C’s indicators will require different methodologies and survey instruments for their data collection. Table 3 provides a list of these selected indicators organized by the different policy areas.

It should be noted that expenditure questions and indicators are not intended to be based on a one-to-one relation, i.e., one specific indicator is not intended to answer one particular policy question; rather, it is a meshed approach whereby an indicator provides some answers to several policy questions. Likewise, one policy question may be addressed by understanding a number of indicators. It is also recognized that each of these indicators can be disaggregated in a variety of ways. We believe that such a level of detail is more appropriately delineated by in-country stakeholders and based on country needs. It is also not intended that all 18 indicators be addressed in every NHA exercise. Local needs, gaps, and objective set toward UHC should be driving the choice among these indicators.

Table 3. List of PE indicators

(A) Resource mobilization, source of financing, level of pharma expenditure, and coverage indicators
1. TPEs (TPE)
2. TPE as % of CHE
3. TPE as a share of GDP
4. TPE per capita
5. Proportion of TPE by HF
6. Proportion of TPE funded by funding sources

(B) Resource allocation, equity, and financial protection indicators
1. Proportion of TPE by provider type
2. Proportion of TPE of each region (per province or district)
3. Proportion of TPE per capita by region (per province or district)
4. Proportion of TPE by age group
5. Proportion of TPE by gender
6. Proportion of TPE by income quintile
7. Proportion of TPE by diseases and key health elements
8. OOP expenditure on pharmaceuticals as % of TPE by income quintile

(C) Efficiency indicators
1. Value of expired/damaged pharmaceuticals as a % of total pharmaceutical purchases in the public sector
2. Expenditures of generic and branded medicines as % of TPE by public and private sectors
3. % of total public sector medicine expenditures (TPuMEs) spent on national EML (NEML) medicines
4. Expenditures of VEN medicines as % of TPE disaggregated by public and private sectors
With our best intention to select the most suitable indicators, we recognize that further work may be needed before a final list of indicators can be recommended to all partners. We hope, though, that these indicators, along with their descriptions and the challenges encountered in their application during previous NHA exercises, will all feed into a discussion with stakeholders to develop the needed consensus for piloting these indicators at the country level. We expect that a post-pilot edition of this paper could then provide a more detailed description of these indicators in a manner that will resonate with the realities on the ground as well as with the findings from the joint piloting of these indicators.
DESCRIPTION OF PE INDICATORS

In this section, each of the above indicators will be described with a definition to facilitate its operationalization. Though more than one definition may exist in the literature for a particular indicator, we attempted to suggest the definition that would be most applicable to an LMIC context and to minimize data collection workload. The rationale for selecting the indicator is also provided and the policy questions that may be analyzed using that particular indicator are discussed. Finally, specific data elements that need to be collected to calculate the indicator and formulas for calculating the indicator are described.

Resource Mobilization, Source of Finance, and Coverage Indicators

Pharmaceuticals are critical to the delivery of health services, given how much they influence health outcomes. However, access to medicines still remains far from optimum. But because of the high cost of medicines, policy makers and health managers continuously struggle to determine how much of our health spending is enough to allocate to pharmaceuticals. What is a reasonable spending per capita on pharmaceuticals? How much of GDP should go toward pharmaceuticals? How much of pharmaceutical spending should come from general funds as opposed to risk pooling mechanisms and OOP expenses? These are all questions that can best be answered by a comparative analysis of PE indicators with those of other countries of similar economic level or disease pattern. Indicators also serve to ascertain whether a country or region is moving toward established goals that they may have set for themselves. Indicators 1-6 track PE in absolute terms as well as in terms of proportion to THE, GDP, and the size of the population. They also track such expenditure in terms of financial coverage and sources of funding.

1. TPE

Definition

Total estimated spending on pharmaceuticals in both the public and private sectors of a country for a given period of time usually a fiscal year; pharmaceuticals include all prescribed and OTC medicines, regardless of the consumption path, i.e., whether acquired by the consumer or spent as part of the delivery of health care services, including outpatient, inpatient, and day care. It does not include medical consumables (non-durables), therapeutic devices, and medical durables.

Rationale

The TPE gives an overall picture of the total spending on pharmaceuticals in any particular nation. Key importance of this indicator is that it represents the numerator value needed for calculating other indicators, such as “TPE as a % of CHE” or “TPE as a % of GDP.”

In its own value, TPE can be monitored for change over time and can be compared against other countries or regions of similar economies and/or similar disease burden. Understanding trends in
TPE can lead to other specific questions that may need to be explored or researched. For example, an increase in TPE may be a positive sign reflecting new policies and practices aimed at increasing access to medicines because of better resource allocation or improved affordability and demand. However, it could merely reflect inflation in prices, change in products’ mix, or even higher actual consumption or leakages and wastage of medicines. TPE can help detect such changes as well as their magnitude; however, often more indicators or studies are needed to accompany it to better understand the reasons behind such changes.

**Calculation**

The sum of spending on prescribed and OTC medicines in retail sales (pharmacies, retail outlets, etc.), outpatient, inpatient, and day care settings (health facilities) in public and private sectors.

**Potential data sources**

Expenditure records of financing schemes, such as government financial records, nongovernmental organization records, insurance schemes’ reimbursement records, public health programs’ records (e.g., HIV, TB, malaria, child health, etc.), health facility accounting records, retail sales records, provider surveys, and household surveys.

2. TPE as a % of CHE

**Definition**

Proportion of the CHE that constitutes total estimated spending on pharmaceuticals for a given time period, usually the fiscal year $^3$ (TPE as % of CHE)

**Rationale**

The indicator provides information on the level and trends of the contribution of PE toward CHE. Results that deviate much from these figures and that cannot be accounted for (i.e., explained by targeted interventions, such as new policies or additional medicine budgets) require more detailed investigation into the factors contributing to these deviations. The indicator thus seeks to answer:

1. Are current levels of PE reasonable as a proportion of CHE?
2. Are current proportions of PE in comparison to CHE comparable to that of other countries of similar economic levels or similar disease burden?
3. What is the trend in the proportion of PE to CHE over time? How does it compare with set strategic plans and policies?

---

$^3$ Current expenditure on health care = final consumption expenditure of resident units on health care goods and services (THE = CHE + gross capital formation) [SHA 2011, p. 38]; also see definition in the glossary.
Description of PE Indicators

Calculation

TPE as % of CEH = \((\text{estimated TPE} \div \text{estimated CHE}) \times 100\)

Potential data sources

CHE can be obtained from the most recent NHA estimation. Note that the year of estimation should be the same for both TPE and CHE (see indicator #1 [TPE] for its potential data sources).

3. TPE as a % of GDP

Definition

Proportion of a country’s GDP (total monetary value of all goods and services produced or spent) that constitutes the estimated total spending on pharmaceuticals for a given time period, usually a fiscal year.

Rationale

The indicator provides information on the proportion of GDP that has been spent on pharmaceuticals. Trends of the indicator over time indicate the relationship between pharmaceutical spending and GDP, i.e., it reflects how the economy may influence the demand on pharmaceuticals and related spending. The indicator thus seeks to answer:

1. Is the current proportion of TPE to GDP comparable to that of other countries of similar economic level and/or of similar disease burden?

2. What is the trend of the proportion of TPE to GDP over a specified period of time?

3. What is the relationship between GDP growth and medicine spending?

4. Given specific assumptions, what is the projected growth in medicine expenditure to meet expected growth in GDP?

Calculation

TPE as a % of GDP = \((\text{estimated TPE} \div \text{GDP}) \times 100\)

Potential data sources

GDP information can usually be obtained from the Central Bank, Ministry of Finance, or the macro database of the World Bank. Note that year of estimation should be the same for both TPE and GDP.
4. **TPE per capita**

**Definition**

Average of a country’s estimated spending on pharmaceuticals per person for a given time period, usually a fiscal year

**Rationale**

TPE per capita presents the country’s average spending on pharmaceuticals per person. Coupled with TPE as proportion of GDP, the two indicators help to understand how much a country is responding to economic development, population growth, and needs in comparison to other countries in order to meet the needs of its citizens. Major deviation in the indicator may point out a need for further investigation and data analysis. For example, an unexpected high TPE per capita, when substantiated with other data, may indicate the need to examine pharmaceutical prices or consumption volume, appropriateness of prescribing, and medicine use practice. The indicator seeks to answer:

1. Are current levels of PE reasonable/adequate for the size of the population?
2. Are current levels of PE per capita comparable to other countries of similar economic level and/or of similar disease burden?
3. What is the trend of average PE over a specified period of time?
4. What is the projected growth in medicines expenditure given population growth rates?

**Calculation**

TPE per capita = estimated TPE ÷ actual/estimated total population

**Potential data sources**

Population estimates from the national bureau for census; note that year of estimation should be the same, as much as possible, for both TPE and for actual/estimated population

5. **Proportion of TPE paid by HF; key sub-indicators include:**

   5.1. % of TPE paid through government and compulsory public and private contributory financing schemes

   5.2. % of TPE paid through public and private voluntary health care systems (schemes)

   5.3. % of TPE paid through household OOP payments
Definitions

5. Proportion of TPE paid by a health care system (financing scheme)

Proportions of the total estimated PE in a country that is paid through various HFs over a specific time period, usually a calendar or fiscal year

5.1. % of TPE paid by government and compulsory contributory health care schemes

The proportion of the estimated PE that is paid through the government and compulsory contributory health care schemes over a specific time period, usually a fiscal year. These schemes include government schemes (including free health care initiatives for specific groups of population), social health insurance, compulsory private insurance, and compulsory medical savings accounts. Compulsory contributory schemes are mandatory for all citizens or for specific groups of population defined by law or government regulation. The expenditure includes cost-share in line with SHA 2011 classification.

5.2. % of TPE paid through voluntary health care systems (schemes)

Proportion of PE paid through voluntary schemes in both the public and private sectors over a specific time period, usually a fiscal year: the expenditure includes cost-sharing in line with SHA 2011 classification. These schemes include voluntary health insurance schemes, schemes of non-profit institutions that serve households, and enterprise financing schemes.

5.3. % of TPE paid through household OOP

Proportion of the PE that is paid by household OOP payments, which are direct payments made by the user at the time of receipt of the medical goods over a specific time period, usually a fiscal year. It is a direct payment from household income or savings and no reimbursement or third-party payer is involved.

Rationale

These indicators provide information on the contribution of the different HFs to the TPE. Based on national policies, the indicators help policy makers ascertain the extent to which their policies are effective in meeting national goals. An example of such goals could be the minimization of the use of government schemes and maximization of the use of voluntary health insurance schemes and risk pooling. The indicator thus provides the necessary information for monitoring such policies. The indicator seeks to answer:

1. Are current HF contributions to TPE consistent with what is expected from our national pharmaceutical policy?

2. Are the schemes incurring PEs sustainable? Can they be further capacitated to maintain/ maximize their role?
3. Is the mix balance of the contributions between OOP, insurance schemes, and government schemes reasonable in comparison to other countries of similar economic development and disease burden to promote financial access to medicines?

**Calculation**

<table>
<thead>
<tr>
<th>Sub-indicator</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1. % of TPE paid by government schemes and compulsory financing schemes</td>
<td>[ \left( \frac{\text{Sum of the expenditures for pharmaceuticals paid by government and compulsory schemes and including cost-sharing}}{\text{TPE}} \right) \times 100 ]</td>
</tr>
<tr>
<td>5.2. % of TPE paid by voluntary financing schemes</td>
<td>[ \left( \frac{\text{Sum of the expenditures for pharmaceuticals paid by voluntary schemes and cost-sharing}}{\text{TPE}} \right) \times 100 ]</td>
</tr>
<tr>
<td>5.3. % of TPE paid by OOP</td>
<td>[ \left( \frac{\text{Sum of the expenditures for pharmaceuticals paid by OOP}}{\text{TPE}} \right) \times 100 ]</td>
</tr>
</tbody>
</table>

**Potential data sources**

Ministry of Finance records, public and private health insurance schemes’ payment and reimbursement records, and household survey for OOP

6. **Proportion of TPE funded by funding sources**

6.1. % of TPE funded by government domestic revenues

6.2. % of TPE funded by government from foreign origin (donor assistance)

6.3. % of TPE funded by compulsory prepayment (including by households/individuals)

6.4. % of TPE funded by social insurance contributions

6.5. % of TPE funded by voluntary prepayment (including by households/individuals)

6.6. % of TPE funded by other domestic revenues (including by households/individuals)

**Definition**

Proportion of total estimated PE derived from any of the funding sources (e.g., government revenues, social insurance contributions, voluntary prepayments, etc.) (1) over a specific time period, usually a fiscal year

**Rationale**

Analysis of the funding sources for PE is of particular interest to countries where funding for pharmaceuticals is diverse or changing rapidly in response to new financing strategies (9). This set of indicators can be further disaggregated by further sub-classifications, provided the data is made available. The Fiji NHA report for 2015 provides a good example for tracing the funding sources for pharmaceuticals with disaggregation of revenues (13). The indicator may respond to the following questions:
1. To what extent are we able to diversify our pharmaceutical funding sources to ensure national self-reliance and financial protection objectives?

2. What is the financial gap to be covered in the event of a withdrawal of international cooperation?

3. Is the mix of the contributions of the different sources of funding reasonably balanced, especially in comparison to other countries of similar economic development and disease burden? Is there a need to shift from one funding source to other(s) to promote better financial access to medicines?

**Calculation**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 % of TPE funded by government from domestic revenues</td>
<td>([Sum of PE funded by government from domestic revenues] ÷ TPE) × 100</td>
</tr>
<tr>
<td>6.2 % of TPE funded by government from foreign source (donations)</td>
<td>([Sum of PE funded by government from foreign origin] ÷ TPE) × 100</td>
</tr>
<tr>
<td>6.3 % of TPE funded by compulsory prepayment</td>
<td>([Sum of PE funded by compulsory prepayment] ÷ TPE) × 100</td>
</tr>
<tr>
<td>6.4 % of TPE funded by social insurance contributions</td>
<td>([Sum of PE funded by social insurance contributions] ÷ TPE) × 100</td>
</tr>
<tr>
<td>6.5 % of TPE funded by voluntary prepayment</td>
<td>([Sum of PE funded by voluntary prepayment] ÷ TPE) × 100</td>
</tr>
<tr>
<td>6.6 % of TPE funded by other domestic revenues</td>
<td>([Sum of PE funded by other domestic revenues] ÷ TPE) × 100</td>
</tr>
</tbody>
</table>

**Potential data sources**

Government financial or revenue database, social security fund records, compulsory and voluntary insurance records, PE records of financing schemes, household surveys, and donor records

**Resource Allocation, Equity, and Financial Protection Indicators**

The distribution of health care resources across geographic areas and among different beneficiary groups is of much interest to governments, politicians, and administrators seeking to realize equity in access to health services and to instill forms of financial protection for the sick. This is very much true also in terms of access to medicines. To realize these goals, policy makers and managers require reliable information on how health care spending is currently being distributed geographically as well as among the different groups of beneficiaries. Such data is particularly relevant in the context of implementing UHC.

Indicators 7-8 enable countries to specifically monitor the distribution of pharmaceutical spending by provider types and geographical location. Indicator 9 supports indicator 8 in tracking regional per capita PE. Indicators 10-13 track PEs by beneficiary characteristics, namely age, gender, type of disease or health condition, and income status. Indicator 14 helps track the extent to which PEs are borne by the household (OOP), also taking income level into consideration.
7. **Proportion of TPE by provider types**

7.1. % of TPE spent in the hospitals

7.2. % of TPE spent in the residential LTC facilities

7.3. % of TPE spent in the ambulatory health care facilities (clinics or outpatient care)

7.4. % of TPE spent in the retailers and other providers of medical goods

**Definition**

Proportion of a country’s total estimated PE that was spent by various types of providers over a specific time period, usually a calendar or fiscal year; classification of providers includes:

- **Hospitals**: Health facilities that provide inpatient care and other health care services, including outpatient, vaccination, diagnostic laboratory and other ancillary services, ambulatory surgery, and emergency services; includes general hospitals, mental hospitals, and specialized hospitals, such as TB hospitals; in SHA 2011, hospitals are classified as HP.1.

- **Residential LTC facilities**: Facilities that provide residential LTC that combine health and social services; this type of facility includes oncology or geriatric rehabilitation facilities, mental health and substance abuse facilities, alcoholism or drug addiction rehabilitation facilities (other than hospitals), residential mental retardation facilities, and day and night care for mental illness; this group is classified in the SHA 2011 as HP.2

- **Ambulatory health care facilities**: Health facilities that provide curative and preventive medical care services to outpatients and other clients that do not require inpatient services; these types of providers include clinics, dental services, physiotherapists, acupuncturists, nurses’ or midwives’ offices, day care centers with curative or rehabilitative services, etc.; in SHA 2011, ambulatory health care facilities are classified as HP.3

- **Retailers and other providers of medical goods**: Establishments whose primary activity is the retail sale of medical goods to the general public for individuals and household consumption or utilization; this category includes pharmacies and drug shops; in SHA 2011, pharmacies and drug shops are classified as HP.5

**Rationale**

These indicators generate information on spending by different types of providers and can help identify possible imbalances in spending by different types of facilities. They also help better understand where pharmaceuticals are most likely to be accessed from among the different types of providers and thus identify best venues for promoting medicine access. The indicator may respond to the following questions:
Description of PE Indicators

1. Is PE distributed equitably among the different HPs and does it reflect our expected distribution?

2. Are particular interventions, such as capacitating and improving the quality of drug retail shops, improving utilization and access to medicines? Further study may also look at whether the increased access is real or merely represents a shift of access from one group of providers to another.

Calculation

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1. % of TPE spent in hospitals</td>
<td>((\text{Sum of expenditures for pharmaceuticals spent at all hospitals ÷ TPE}) \times 100)</td>
</tr>
<tr>
<td>7.2. % of TPE spent in residential LTC facilities</td>
<td>((\text{Sum of expenditures for pharmaceuticals spent at all residential LTC facilities ÷ TPE}) \times 100)</td>
</tr>
<tr>
<td>7.3. % of TPE spent in ambulatory health care facilities (clinics or outpatient care)</td>
<td>((\text{Sum of expenditures for pharmaceuticals spent at all ambulatory health care facilities ÷ TPE}) \times 100)</td>
</tr>
<tr>
<td>7.4. % of TPE spent at retailers and other providers of medical goods</td>
<td>((\text{Sum of expenditures for pharmaceuticals spent at all retailers and other providers of medical goods ÷ TPE}) \times 100)</td>
</tr>
</tbody>
</table>

Potential data sources

Health facilities’ accounting records, retail sales records, dispensing records, and pharmaceutical management (logistics) tools and reports

8. Proportion of TPE by region

8.1. Proportion of TPE spent by different geographical regions (provinces and districts)

8.2. Proportion of TPE spent in urban and rural areas

Definition

Distribution of total pharmaceutical spending by geographical region and by urban and rural areas over a specific time period, usually a fiscal year

Rationale

This indicator and its sub-indicators provide information on the differences in spending on pharmaceuticals across a country’s geographical regions and between urban and rural areas and, along with other indicators, may help identify imbalances or inequities in spending. Expenditures broken down by geographical regions are especially useful in countries where the health system is decentralized (9). The indicators help to respond to the following questions:

1. Is PE distributed equitably across geographical regions, taking into consideration their disease burdens?

2. Is PE distributed equitably between urban and rural areas, thus reflecting similar access to medicines or are there major disparities?
Unexpected variations between geographic areas could trigger the need for further studies to better answer the question of:

3. What are the key drivers/factors leading to variations in spending on pharmaceuticals across regions?

**Calculation**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1. % of TPE spent by geographical region</td>
<td>(Sum of TPEs from all providers or HFs in a geographical area [region, province, or district] ÷ TPE) × 100</td>
</tr>
<tr>
<td>8.2. % of TPE spent in urban and rural areas</td>
<td>(Sum of TPEs from all providers or HFs in urban areas) ÷ TPE) × 100</td>
</tr>
</tbody>
</table>

**Potential data sources**

PE records from all types of providers or HFs in a region, province, or district; household survey (for OOP PEs); and national bureau for census (for regional/provincial/district population data)

**9. PE per capita by region (or province or district) or urban/rural area**

9.1. TPE per capita spent by geographical region (province and district)
9.2. TPE per capita spent in urban and rural areas

**Definition**

Distribution of total pharmaceutical spending per person by geographical region and by urban and rural areas over a specific time period, usually a fiscal year

**Rationale**

This indicator presents the differences of PEs per capita in different geographical areas in a country and between urban and rural areas and may help identify imbalances or inequities in spending. This indicator may respond to the following question:

1. Is PE distributed equitably?

Further studies may be required to answer the following question:

2. What are the key drivers of differences in spending on pharmaceuticals per capita across regions?

**Calculation**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1. TPE spent per capita by geographical region</td>
<td>Sum of TPEs from all providers or HFs in a geographical area ÷ population of area</td>
</tr>
<tr>
<td>8.2. TPE spent per capita in urban and rural areas</td>
<td>Sum of TPEs from all providers or HFs in urban areas ÷ population in urban areas</td>
</tr>
<tr>
<td></td>
<td>Sum of TPEs from all providers or HFs in rural areas ÷ population in rural areas</td>
</tr>
</tbody>
</table>
Potential data sources

PE records from all types of providers or HFs in a region, province, or district; household survey (for OOP PEs); national bureau for census (for regional/provincial/district population data)

10. Proportion of TPE by age groups (under 5, 5-14, 15-49, 50-64, and >65 years)

10.1 TPE of each age group
10.2 TPE per capita of each age group
10.3 % of TPE by each age group

Definition

Total estimated PEs in a country disaggregated by specific age groups over a specific time period, usually a fiscal year; suggested age groups are under 5, 5-14 years, 15-49 years, 50-64 years, and 65 years or older

Rationale

This indicator enables comparisons of PEs among the population by age group and may provide policy makers with information on inequities or imbalances in age-related health conditions or diseases. Countries can aggregate or further breakdown the age groups to respond to country-specific policy needs or feasibility issues, or to facilitate comparison with particular countries as needed. This indicator may respond to the following questions:

1) Is PE distributed equitably?
2) How is population ageing affecting spending on pharmaceuticals?
3) Do PE priorities adequately reflect age-related burden of disease/health policy priorities?

Further studies may be required to answer the following questions:

4) What are the key drivers of differences in spending on pharmaceuticals per capita among different age groups?
5) Are there particular segments of the population that lack adequate financial protection?

Calculation

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1 TPE of each age group</td>
<td>Sum of TPEs from all providers or HFs disaggregated by age group</td>
</tr>
<tr>
<td>10.2 TPE per capita of each age group</td>
<td>(Sum of TPEs from all providers or HFs disaggregated by age group ÷ total population of each age group)</td>
</tr>
<tr>
<td>% of TPE by each age group</td>
<td>(Sum of TPEs from all providers or HFs for each age group ÷ TPE) × 100</td>
</tr>
</tbody>
</table>
Potential data sources

Health program age-disaggregated financing reports, HF records, HP health management information system (HMIS) and accounts records, household survey

11. TPE by gender

11.1 TPE by gender group

11.2 TPE per capita by gender group

11.3 % of TPE of each gender group

Definition

Total estimated PEs in a country disaggregated by gender groups (male and female) over a specific time period, usually a fiscal year

Rationale

This indicator enables comparisons of PEs among the population by gender group and may provide policy makers with information on inequities or imbalances in gender-related health conditions or diseases. This indicator may respond to the following questions:

1) Is PE distributed equitably?

2) Do PE priorities adequately reflect gender-related burden of disease /health policy priorities?

Further studies may be required to answer the following questions:

3) What are the key drivers of differences in spending on pharmaceuticals among gender groups?

4) Are there particular segments of the population that lack adequate financial protection?

Calculation

PE of each gender group
PE per capita of each age group
% of PEs of each gender group

Sum of PE disaggregated by gender groups from all providers or HF
Firstly, disaggregate PE by gender groups from all providers or HF, then divide each by total population of gender group

(\text{Sum of PE disaggregated by gender groups from all providers or HF} \div \text{TPE}) \times 100

Potential data sources

Health program gender-disaggregated financing reports, HF records, HP HMIS and accounts records, household survey
12. TPE by income quintile

Definition

TPEs in a country disaggregated by income quintile over a specific time period, usually a fiscal year

Rationale

PE disaggregated by socioeconomic status, in particular, income quintile, enables the identification of disparities particularly with regard to the affordability of pharmaceuticals for different socioeconomic groups. Such disparities are a major policy concern to all countries and at the global level. Consequently, policy makers and others are interested in understanding how health care resources and expenditures are distributed across people at different socioeconomic levels. The WHO Commission on Social Determinants of Health has called on all governments to routinely measure such disparities (14). This indicator may respond to the following questions:

1) Is PE distributed equitably?

2) Are there large disparities in expenditures between low- and high-income populations?

3) Do PE priorities among different socioeconomic groups adequately reflect the burden of disease/health policy priorities?

Further studies may be required to answer the following questions:

4) What are the key drivers of differences in spending on pharmaceuticals among different socioeconomic groups?

5) Are there particular segments of the population that lack adequate financial protection?

Calculation

Total estimated PE disaggregated by each income quintile

Potential data sources

HF records, household surveys, living standards surveys; consumer expenditure survey, household health expenditure and utilization survey (15)

13. TPE by diseases and key health elements

Definition

Distribution of TPEs by disease and health element classifications in a country over a specific time period, usually a fiscal year
Identifying Indicators for Tracking Pharmaceutical Expenditure in LMICs

Note: Diseases may be classified based on the most updated WHO-published International Classification of Diseases (ICD) or a more aggregated grouping of ICD classes, such as a nationally specific grouping of ICD classes, or the WHO Global Burden of Disease. The NHA uses the following subaccounts: child health, reproductive health, HIV/AIDS, TB, malaria; country priority diseases for control.

**Rationale**

PE by disease classification provides information to decision makers on spending that can inform decisions on disease prevention, public health programs, treatment, and reimbursement schemes. Use of the ICD framework helps countries compare spending across time and between countries. This indicator may respond to the following questions:

1) Do PE priorities adequately reflect burden of disease/health policy priorities?

Further studies may be required to answer the following question:

2) What are the key drivers of differences in spending on pharmaceuticals for different disease groupings?

**Calculation**

Total estimated PE for each disease or health element classification

**Potential data sources**

Health program reports, HMIS reports of priority diseases for control, HF reports, household surveys

14. OOP expenditure on pharmaceuticals as % of TPE by income quintile

**Definition**

Distribution of OOP PEs of households among various income quintiles in a country over a specific time period, usually a fiscal year

**Rationale**

This indicator is a disaggregation of indicator 5.3 % of TPE funded by household OOP payments by income quintile. It provides information on the financial burden of medical care, specifically pharmaceuticals for the household, which for some may have a catastrophic effect on the household’s financial situation. This information helps decision makers identify the differences of OOP on pharmaceuticals among income quintiles and may shape decision making on mobilizing financial sources or introducing interventions to support certain population groups. This indicator may respond to the following question:

1) Is PE distributed equitably?
Further studies may be required to answer the following question:

2) What are the key drivers of differences in OOP spending on pharmaceuticals?

**Calculation**

\[
\text{Calculation} = \left( \frac{\text{OOP on pharmaceuticals disaggregated by income quintile}}{\text{TPE}} \right) \times 100
\]

**Potential data sources**

Household surveys, living standard surveys

**Efficiency Indicators**

The following indicators (#15-18) track utilization and consumption patterns which can then be compared to PEs to generate efficiency measures. These indicators are not included in SHA 2011.

15. **Value of expired and damaged pharmaceuticals as a % of total pharmaceutical purchases in the public sector**

**Definition**

Total value of expired and damaged pharmaceuticals as a % of the total value of pharmaceutical product purchases in the public sector of a country over a specific time period, usually a fiscal year

**Rationale**

This indicator provides information on the extent of wastage of pharmaceuticals in the public sector and helps inform decisions on further investigations on underlying reasons and the need for interventions to improve the management (selection, quantification, procurement, distribution, and use) of pharmaceuticals. This indicator may respond to the following question:

1) Are pharmaceuticals efficiently and effectively managed in the public sector?

Further studies may be required to answer the following question:

2) What are the main drivers of pharmaceutical product expiry and damage?

**Calculation**

\[
\text{Calculation} = \left( \frac{\text{Total value of expired and damaged pharmaceuticals}}{\text{Total value of pharmaceutical purchases in the public sector}} \right) \times 100
\]
Potential data sources

Public pharmaceutical warehouses (such as central medical stores) and public health facility inventory management reports; expired and damaged pharmaceuticals write off or disposal records; public sector records of pharmaceutical purchases

16. Expenditure on generic and branded medicines as % of TPE in the public and private sectors

16.1 Public sector expenditure of generic medicines as % of TPuME
16.2 Public sector expenditure on branded medicines as % of TPuME
16.3 Private sector expenditure on generic medicines as % of total private sector medicine expenditures (TPvME)
16.4 Private sector expenditure on branded medicines as % of TPvME

Definition

16.1 and 16.2: Proportion of TPuME spent on generic and branded medicines, respectively, in a country over a specific time period, usually a fiscal year

16.3 and 16.4: Proportion of TPvME spent on generic and brand name medicines, respectively, in a country over a specific time period, usually a fiscal year

Rationale

This indicator tracks the extent to which efforts to contain costs by using generic medicines in the public and private sectors are implemented. This indicator may respond to the following questions:

1) What are the key drivers of growth/change in PEs?

2) Does the consumption of branded medicines differ between public and private sectors?

Calculation

Public sector:

(Sum of expenditure on generic medicines in public sector ÷ TPuME) × 100
(Sum of expenditure on branded medicines in public sector ÷ TPuME) × 100

Private sector:

(Sum of expenditure on generic medicines in private sector ÷ TPvME) × 100
(Sum of expenditure on branded medicines in private sector ÷ TPvME) × 100
Potential data sources

- Expenditure on generic and branded medicines: Medicine consumption/sales/payment records in public and private health facilities, pharmacies, and drug stores; private sector pharmaceutical sales surveys; HF payment records

- TPuME: HF expenditure or payment records, health program records, public HP accounting records

- TPvME: HF expenditure or payment records, health program records (for example, through public-private partnership), private HP accounting/ medicine consumption/sales records, private sector pharmaceutical sales surveys

17. % of TPuME spent on NEML medicines

Definition

Proportion of TPuME that is spent on medicines included in the NEML in a country over a specific time period, usually a fiscal year

Rationale

This indicator monitors the extent to which policies that promote the use of NEML and cost containment by using essential medicines are implemented and adhered to. This indicator may respond to the following questions:

1) What is the extent of utilization of essential medicines?

Further studies may be required to answer the following question:

2) What are the possible causes of low utilization/expenditure of essential medicines (e.g., stock-outs of essential medicines, outdated NEML)?

Calculation

\[
\left( \frac{\text{Sum of expenditure on NEML medicines by all public HPs}}{\text{TPuME}} \right) \times 100
\]

Potential data sources

- Expenditure on essential medicines: health care provider consumption records/account reports/sales records, HF payment records

- TPuME: HF expenditure or payment records, health program records, public HPs’ accounting records
18. Expenditures of VEN pharmaceuticals as % of TPE in the public and private sectors

Definition

In the public sector: Proportion of a country’s TPuME for VEN medicines in a country over a specific time period, usually a fiscal year

In the private sector: Proportion of a country’s TPvME for VEN medicines over a specific time period, usually a fiscal year

Note: TPuME and TPvME include both prescribed and OTC medicines.

This indicator can be measured if the country applies VEN classification to its NEML.

Rationale

VEN classification sets priorities for the selection, procurement, and use of medicines according to the potential health impact of individual medicines (16). Tracking medicine expenditure by VEN classification can help decision makers identify disparities and prompt investigations to inform potential interventions to improve efficiency. This indicator may respond to the following questions:

1) Does current spending on medicines represent good value for money?

2) Does the distribution of expenditures on VEN medicines possibly indicate any changes in disease or consumption patterns over time?

Calculation

Public sector:

\[(\text{Sum of public sector expenditure on vital medicines} ÷ \text{TPuME}) × 100\]
\[(\text{Sum of public sector expenditure on essential medicines} ÷ \text{TPuME}) × 100\]
\[(\text{Sum of public sector expenditure on non-essential medicines} ÷ \text{TPuME}) × 100\]

Private sector:

\[(\text{Sum of private sector expenditure on vital medicines} ÷ \text{TvMPE}) × 100\]
\[(\text{Sum of private sector expenditure on essential medicines} ÷ \text{TvMPE}) × 100\]
\[(\text{Sum of private sector expenditure on non-essential medicines} ÷ \text{TvMPE}) × 100\]

Potential data sources

National VEN classification for medicines

Expenditure on VEN medicines: HP consumption records/account reports/sales records, private sector pharmaceutical sale surveys, HF payment records
REPORTING PHARMACEUTICAL EXPENDITURES TO DATE: A REVIEW OF COUNTRY NATIONAL HEALTH ACCOUNT REPORTS

To date, various PE indicators have been used in LMICs. These are collected during NHA exercises using the SHA 1.0 or SHA 2011 classifications. To identify the extent to which countries had been able to track such PE and to identify strengths and limitations in collecting related data and to formulate recommendations for the piloting of our proposed set of indicators, we reviewed 30 readily available reports derived from NHA exercises conducted in LMICs.

The reports were identified mainly using the two key search terms “health accounts” and “national health accounts” using Google and the WHO Global Health Expenditure Database (GHED).\(^4\) The reports were produced based on SHA 1.0 or SHA 2011 classifications. We primarily focused on English language reports as well as those with detailed findings so as to permit a full review. The 30 identified reports pertain to 17 different countries from 4 regions (annex 2). The period covered by these reports ranged from 1990 to 2015. Due to the limited sample size, the review was not intended to provide statistical representation or to generalize the findings but rather to provide a snapshot on what PE specific indicators are mostly used and what are the key issues related to their implementation.

In the following section, we discuss our key findings from reviewing the 30 NHA reports. We focus on PE data presented in these reports, particularly data related to indicators that are part of our suggested set of core indicators discussed in the previous section. The premise is that, by better understanding the current situation, one would be able to make appropriate recommendations for the way forward.

1. What expenditure indicators are most or least reported upon in NHA reports?

We observed that five PE indicators related to the SHA core framework are commonly being reported. These indicators appeared in more than 50% of the reviewed reports. Others were less commonly reported or not reported at all. Indicators capturing TPE and those indicators related to beneficiary characteristics, though critical for policy making, were found to be lacking.

The most commonly reported five indicators were:

- PEs: 29 of the 30 reports captured PEs; notably, inconsistency was observed in the scopes or use of codes to collect PEs. Some NHA reports captured PE data using HC.5 (medical goods) while others reported it using HC5.1 (pharmaceuticals and other medical non-durables) or HC.5.1.1 (prescribed medicines). Table 4 presents samples of the scopes (types of goods and source of the data) in various reports.

- % of PEs (or medical goods as described above) of THE/CHE: 18 of the reports (60%) presented this indicator

\(^4\) [http://apps.who.int/nha/database/DocumentationCentre/Index/en](http://apps.who.int/nha/database/DocumentationCentre/Index/en)
• PEs incurred by household OOP payment (HF.3): 18 of the reports (60%) captured this indicator

• PEs by HPs: 26 of the reports (87%) provided information on PE by retailers and other providers of medical goods (HP.5)

• Household OOP payment at private pharmacies or retailers: 21 of the reports (70%) provided information on PE derived from OOP at retailers and other providers of medical goods (HP.5)

Table 4. PE as share of CHE or THE and OOP spending on pharmaceuticals

<table>
<thead>
<tr>
<th>Countries and years of NHA reports</th>
<th>PE/TPE as % of CHE/THE</th>
<th>PE as % of OOP</th>
<th>Various scopes of data used to compute indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan 2011-2012</td>
<td>26%</td>
<td>35%</td>
<td>PE as share of THE: Data used to calculate PE was prescribed medicine or oral contraceptives only. PE data was captured from retailers and other providers, not from outpatient, inpatient, and day care services.</td>
</tr>
<tr>
<td>Afghanistan 2014</td>
<td>42%</td>
<td>58%</td>
<td>PE as share of CHE: Data used to calculate PE was prescribed medicines in hospitals and retail pharmacies only. Additionally, the denominator is CHE instead of THE.</td>
</tr>
<tr>
<td>Egypt 2008/09</td>
<td>34%</td>
<td>43%</td>
<td>Data used to calculate PE was from public and private retail pharmacies, not from outpatient, inpatient, or day care services.</td>
</tr>
<tr>
<td>Fiji 2009/10</td>
<td>12%</td>
<td>53%</td>
<td>Data used to calculate PE was pharmaceuticals and nondurable goods from retail providers, not from outpatient, inpatient, or day care services.</td>
</tr>
<tr>
<td>Fiji 2011-2015</td>
<td>14%</td>
<td>59%</td>
<td>Data used to calculate PE was medical goods in retail providers, not from outpatient, inpatient, or day care services.</td>
</tr>
<tr>
<td>Nepal 2006/07-2008/09</td>
<td>28%</td>
<td>48.6%</td>
<td>Data used to calculate PE for 2008/09 was medical goods dispensed to outpatients in retail providers, not from inpatient or day care services.</td>
</tr>
<tr>
<td>Bangladesh (Urban) 2012</td>
<td>45%</td>
<td>65%</td>
<td>Data used to calculate PE was from retailers and other providers and the rest of the economy; however, OOP data was based on expenditure in retailers and other providers of medicine and medical goods.</td>
</tr>
<tr>
<td>India 2013-2014</td>
<td>40% (TPE)</td>
<td>52%</td>
<td>Data used to calculate TPE includes PE for inpatient services.</td>
</tr>
<tr>
<td>India 2014-2015</td>
<td>38% (TPE)</td>
<td>43%</td>
<td>Data used to calculate TPE includes PE for inpatient services.</td>
</tr>
<tr>
<td>Indonesia 2014</td>
<td>13.5%</td>
<td>28%</td>
<td>Data used to calculate PE was medical goods (non-specified) (HC.5) spent in hospitals (HP.1), providers of ambulatory health care (HP.3), retailers and other providers of medical goods (HP.5), providers of preventive care (HP.6), and providers of health care system administration and financing (HP.7), of which three-quarters was spent in retailers and one-quarter was spent in hospitals.</td>
</tr>
<tr>
<td>Malawi 2012/13-2014/15</td>
<td>2.2%</td>
<td>2.8%</td>
<td>Data used to calculate PE was prescribed medicines only; other data sources were not reported.</td>
</tr>
</tbody>
</table>

5 The category “rest of economy (HP.8)” comprises households as providers of home health care (HP.8.1) and all other industries as secondary providers of health care (HP.8.2) as well as the separate subcategory other industries not elsewhere classified (HP.8.9) (SHA 2011, p. 128). Supermarkets or grocery shops sell a limited number of OTC medicines under this classification.
The less- or non-reported indicators were:

- TPE, which was reported in only two reports that incorporated PE for inpatient services as part of their TPE definition, and hence were consistent with the SHA 2011 definition for TPE; however, the reports did not present how inpatient data was captured

- TPE per capita, which was reported in those same two reports that reported on TPE

- TPE as share of GDP, which was not reported in any of the 29 reviewed reports

- PE by HFs other than household OOP; this indicator was reported in 12 (40%) of the reviewed reports

- PE by health care providers, including private pharmacies and other retailers (HP.5) and hospitals (HP.1), which was addressed in five reports; however PE by other type of health care providers was not reported in any of the reviewed reports

- Expenditures at pharmacies by HFs other than household OOP; this indicator was only reported in nine reports (30%)

- PE distribution by beneficiaries’ characteristics; only 10 reports (33%) reported on PEs by disease/health program and only 4 reports addressed PE by geographical area or region; PE by other types of beneficiary characteristics, such as age, sex, or income quintile, was not reported in any of the reviewed reports

It is to be noted that many of the indicators that are reported do not always exactly fit in their scope as defined by SHA 2011. Key contributory factors to these variations include lack of, inconsistent, or inaccessible data as explained in the next section. This can also happen when a country-specific objective for the NHA is somehow different, usually narrower, from the full scope delineated in the SHA.

It is also important to point out that the suggested PE indicators aimed at measuring and monitoring efficiency (as defined in the previous section) are not normally addressed in NHA reports. This is not unexpected, given that they do not fall within the scope of the NHAs.

2. What are the most prevalent issues related to data completeness, quality, consistency, and availability?

Countries’ experiences have revealed several data acquisition challenges that range from lack of or inaccessible data to unreliable or poor-quality data. Data classification issues are another challenge. In addition, LMICs often have technical and financial capacity constraints in carrying out NHA exercises due to the complexity of the SHA classification and methodology (17). These challenges explain why some of the NHA reports do not capture key PE data or components. However, these challenges are a source of concern in underestimating the value of these indicators and for the inconsistencies they may create, hence hindering comparability across
countries/regions and over time. Below we discuss some of these specific challenges pertaining to PE indicators.

2.1. Lack of Alignment between SHA Classification and Country Accounting Systems

Despite the detailed classification of the SHA for the code related to medical goods HC 5 (which includes pharmaceuticals), we found that some reports define it the same way as the SHA while others define it only to capture information on pharmaceuticals and other medical non-durables (HC.5.1). In some countries, PEs and related data, such as their sources of funding and their service functions, are hard to disaggregate and align for reporting. This is because some countries’ and providers’ accounting systems and codes do not match those of the SHA classification, making it difficult to identify and document the different expenditure elements according to SHA. These issues cause data collection or analysis issues or limit the scope of some areas of reporting (13, 18-20).

Another key SHA classification issue is that of PE for inpatient care. It is not captured as part of the HC.5 classification, but is rather included in other health care services that provide inpatient care or day care. This constitutes a challenge in identifying the value of PEs for the inpatient and thus the ability to calculate TPE, which, by definition, includes inpatient pharmaceuticals. Although the SHA provides an RI for TPE (HCRI.1), which includes the PE for inpatient care and other paths of consumption, some countries find it difficult to disaggregate PE for inpatient and outpatient care (18, 19). This could lead to PE being underestimated because a large portion of it (pertaining to inpatient care) is omitted in calculating different types of PE indicators.

2.2. Data Availability and Quality Issues

Data source issues include poor availability or accessibility to data (20-22); data being kept in different formats and different institutions or systems (18, 23); low quality and reliability, even if the data is available (21); reluctance on the part of private sector respondents to provide information because of the fear of tax implications or concerns of commercial value (24); and low response rate by nongovernmental organizations and donors (25) in providing the necessary information. These all contribute to challenges in data collection, analysis, and estimation.

2.3. Lack of Information about Distribution of PEs in Beneficiary Groups

OOP expenditure on pharmaceuticals was reported in some NHA reports; however, there was little indication about distribution of PE in population subgroups, such as by age, gender, or by income groups. Other literature revealed that estimating PEs by beneficiary characteristics requires disaggregation and complicated computing methods for which many LMICs lack the required data, capacities, or due to design of the surveys specifically the health account objectives, or the lack of this information in health care provider and financing scheme records (7, 26). To measure the level of financial burden and equity, household surveys that include questions on different types of expenditures, including on pharmaceuticals and household consumption and/or income are needed (5, 26).

2.4. Comparability among Countries and Over Time
Different survey objectives and scopes may affect comparability among countries and over time. SHA classifications help standardize indicators included in NHA. However, the scopes of data that are used to compute the same indicator vary from one country to another or from one year to another. Comparison of indicators with different scopes may thus provide incorrect information and could lead to inappropriate decision making. Therefore, care must be taken when comparing indicator data from different countries or from different years to confirm that the data is comparable.

Table 4 provides examples of variations in the scope of data used to compute PE or TPE from a number of NHA reports.

3. How is an indicator selected?

In reviewing NHA reports, it was observed that the selection of indicators is largely based on SHA framework-led objectives (50% of the reports). However, in four cases, the reports articulated clearly the policy questions that the NHA report was seeking answer. In these reports, the policy questions were used as the basis for formulating health expenditure indicators and defining the data elements that needed to be collected. However, PE-related policy questions or objectives were not highlighted. Although table 5, extracted from the Namibia NHA (2014-15) report (25), revolves around health expenditure as opposed to PE, it provides a good example of how policy questions developed at the outset of the NHA exercise can help guide the formulation of specific expenditure indicators and identify the specific data elements that need to be collected.

For the other remaining 11 reports, no particular objectives or policy questions were specified; however, in this case, the SHA framework was adopted as is, though with some varying degrees of implementation from one country report to another.

Table 5. Policy and Expenditure Questions of Namibia’s NHA (2014-15) Report

<table>
<thead>
<tr>
<th>Health policy area</th>
<th>NHA policy and expenditure questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability of health financing</td>
<td>How sustainable are the overall resources flowing to the health sector, given the potential decline of donor support as the country transitions into upper-middle-income status?</td>
</tr>
<tr>
<td>Sustainability of health financing; spending by disease area</td>
<td>How is declining donor support reflected in funding priority areas such as HIV, TB, malaria, non-communicable diseases, and maternal and child health?</td>
</tr>
<tr>
<td>Risk pooling</td>
<td>What share of spending on health is OOP?</td>
</tr>
<tr>
<td>Relative spending of private sector</td>
<td>What is the role of the private sector in providing health care? How big is its share of total spending on health?</td>
</tr>
</tbody>
</table>
DISCUSSION AND RECOMMENDATIONS FOR WAY FORWARD

Despite underestimation of PE, many NHA reports have found that PE took a lion’s share of the total or CHE, and most of the expenditure was from household OOP spending in retail pharmacies! Policy makers do need a more comprehensive picture and details to understand the distribution of the PE or allocation of the limited resources to address equity issues and mobilize more resources to provide financial protection to their people.

The increase in PE has been one of the major contributors to overall growth in health expenditure and consequently the growing importance of health in the economy. Factors that could increase the consumption of pharmaceuticals include changes in health needs, clinical practices, demographic and epidemiologic situations, and the increasing involvement of health systems with LTC in the wake of social and economic changes (1, 27). Pharmaceutical market dynamics may affect prices and therapeutic mix (28). The information about PE among beneficiary groups will allow policy makers to identify the drivers of growth of health and pharmaceutical spending and provide inputs in the development of monitoring and evaluation indicators of health care systems, as well as in modelling future health care and PEs (23). Studies or reports showed that the rising PEs mostly stemmed from the purchase or use of age/gender/disease-related quantity and type of medicines (29, 30) or the increased prices or volume of pharmaceuticals consumed (31). Therefore, it is important for NHA reports to include PE by beneficiary characteristics. Understanding health and medication treatment needs of various beneficiary groups is critical for policy making for achieving UHC.

The different scopes of medicines defined in HC.5 (excludes inpatient PE) and TPE (includes inpatient PE without a subclass) make it difficult to collect TPE data. Experts recognize that PE, without that of hospital and inpatient care, is insufficient for policy makers to make sound decisions (7, 22, 28). A few NHA reports presented PE from providers other than retailers, such as ambulatory care facilities and hospitals (21, 32-34). However, it is unclear whether the data from hospitals was for outpatient only, or included inpatient PE, except two reports from India. It is, hence, necessary to provide a deeper level of analysis with a subclass of PE for inpatient services in SHA classifications. In addition, different SHA classification and country accounting systems makes data disaggregation difficult. Therefore, although countries are promoting institutionalization of an NHA system, realigning their accounting systems with SHA classifications should be taken into consideration.

The SHA 2011 further classifies services and goods received during inpatient care as “all health care goods and services received during an inpatient contact for care should be included, regardless of the provider or the payer, such as when pharmaceuticals are provided directly by health professionals or by relatives who acquired them from a pharmacy, either hospital-based or elsewhere. In the case of developing countries, where services provided by patients’ relatives in hospitals are more common, any direct expenditure or reimbursement—including expenditure on food, nursing care, and medical goods (if not provided by the health facility)—should be recorded under inpatient care.”6 This classification may create overlaps or double-counting of PEs incurred in retailers or other providers and health facilities for those that are obtained out of

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6 SHA 2011, p. 79
health facilities but consumed in the inpatient care setting. It would be helpful to review data collection and analysis for such a situation to provide more distinct classifications and methodology for estimating expenditures for pharmaceuticals and medical goods.

The use of proprietary medicines instead of generic medicines (32) and the wastage of pharmaceuticals due to expiration or damage are examples of increasing PE and inefficient use of limited resources. Improving efficiency is as important as resource mobilization and cost containment. Although applying the SHA methodology, the NHA is not meant to answer all health financing questions, in particular, those about efficiency (17). The proposed indicators include an efficiency category to answer the question about whether the pharmaceutical spending is value for money. These indicators will add value to the NHA and enable policy makers to formulate policies or strategies to improve efficiency.

The proposed key indicators aim to standardize key information to meet countries’ needs and facilitate comparability across countries and over time. However, cognizant of the issues about classification, data acquisition, and methodology, these indicators must be carefully tested and validated. The tested result may lead to better classification, identification of more or reliable data sources, or better methodologies in data collection or analysis for tracking PE. These can be built into the countries’ institutionalization of the NHA system.

Despite facing many challenges, countries with multiple NHA reporting experience may have improved their capacity and data availability to some extent (21). While countries are promoting institutionalization of the NHA system (15, 18, 19, 21), testing the proposed key indicators provides an added value to the institutionalization, in particular, for the indicators that have not been reported.

Moving forward, building consensus among stakeholders about the implication and importance of tracking PE will be a critical first step for testing the proposed key indicators. Then, work with stakeholders that have practical experience on NHA reporting to strategize the testing approach by identifying the current capacities and challenges; review expert advice (23, 28, 35); use guidance materials and tools (annex 3), data sources, and methodologies; and plan testing procedures. The testing procedure can be in concert with formal NHA reporting activities, or performed independently.

The testing result may lead to suggesting updates in SHA classifications, additions, or changes in survey or data collection and analysis methods; identifying further steps for in-depth studies or investigations; and identifying policies or strategies to solve root causes or problems. Its contribution will not only be to tracking PE, but also to the entire health financing system and to the goal of moving toward UHC.
### ANNEX 1. SHA CORE FRAMEWORK CLASSIFICATIONS AND CODES

<table>
<thead>
<tr>
<th>International classifications for health accounts</th>
<th>SHA 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HCs</strong></td>
<td></td>
</tr>
<tr>
<td>HC1. Curative care</td>
<td></td>
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<tr>
<td>HC2. Rehabilitative care</td>
<td></td>
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<tr>
<td>HC3. LTC (health)</td>
<td></td>
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<tr>
<td>HC4. Ancillary services (non-specified by function)</td>
<td></td>
</tr>
<tr>
<td>HC5. Medical goods (non-specified by function)</td>
<td></td>
</tr>
<tr>
<td>HC6. Preventive care</td>
<td></td>
</tr>
<tr>
<td>HC7. Governance and health system and financing administration (there is no HC8)</td>
<td></td>
</tr>
<tr>
<td>HC9. Other health care services not elsewhere classified</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HC memorandum items: RIs (HC.RI) and HCRs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HC.RI.1 TPE</td>
<td></td>
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<tr>
<td>HC.RI.2 Traditional, complementary, and alternative medicines (TCAM)</td>
<td></td>
</tr>
<tr>
<td>HC.RI.3 Prevention and public health services</td>
<td></td>
</tr>
<tr>
<td>HCR.1 LTC (social)</td>
<td></td>
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<tr>
<td>HCR.2 Health promotion with a multi-sectoral approach</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>HPs</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HP1. Hospitals</td>
<td></td>
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<tr>
<td>HP2. Residential LTC facilities</td>
<td></td>
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<tr>
<td>HP3. Providers of ambulatory health care</td>
<td></td>
</tr>
<tr>
<td>HP4. Providers of ancillary services</td>
<td></td>
</tr>
<tr>
<td>HP5. Retailers and other providers of medical goods</td>
<td></td>
</tr>
<tr>
<td>HP6. Providers of preventive care</td>
<td></td>
</tr>
<tr>
<td>HP7. Providers of health care system administration and financing</td>
<td></td>
</tr>
<tr>
<td>HP8. Rest of economy</td>
<td></td>
</tr>
<tr>
<td>HP9. Rest of the world</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>HFs</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HF1. Government schemes and compulsory contributory</td>
<td></td>
</tr>
<tr>
<td>HF2. Voluntary health care payment schemes</td>
<td></td>
</tr>
<tr>
<td>HF3. Household OOP payment</td>
<td></td>
</tr>
<tr>
<td>HF4. Rest of the world financing schemes (non-resident)</td>
<td></td>
</tr>
</tbody>
</table>
## ANNEX 2. SELECTED COUNTRIES’ NHA REPORTS OR LITERATURE FOR REVIEW

<table>
<thead>
<tr>
<th>WHO regions</th>
<th>NHA reports based on SHA 1.0 classifications</th>
<th>NHA reports based on SHA 2011 classifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caribbean region</td>
<td>N/A</td>
<td>Barbados 2012-2013</td>
</tr>
</tbody>
</table>

---

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## ANNEX 3. AVAILABLE GUIDELINES OR TOOLS FOR TRACKING HEALTH EXPENDITURES

<table>
<thead>
<tr>
<th>No.</th>
<th>Guidelines or tools</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>General SHA guidelines</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>A System of Health Accounts 2011 edition. OECD, Eurostat, WHO</td>
<td>SHA 2011 General classifications for health expenditures</td>
</tr>
<tr>
<td>2</td>
<td>A System of Health Accounts 2011 Revised version 2016 OECD, Eurostat, WHO</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Guidelines for the implementation of the SHA 2011 framework for accounting health care financing. 2013. OECD, WHO</td>
<td>SHA 2011 health care financing</td>
</tr>
<tr>
<td>4</td>
<td>Accounting and mapping of long-term care (LTC) expenditure under SHA 2011, 2012. OECD</td>
<td>Clear classification of pharmaceuticals for LTC</td>
</tr>
<tr>
<td>B</td>
<td>NHA guidelines and tools</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>NHA Trainer manual 2004. PHRPlus USAID</td>
<td>NHA training manual</td>
</tr>
<tr>
<td>10</td>
<td>Guide to producing regional health accounts within the national health accounts framework. 2008 WHO</td>
<td>NHA regional health accounts</td>
</tr>
<tr>
<td>11</td>
<td>Guide to producing reproductive health subaccounts within the national health accounts framework. 2009 WHO</td>
<td>NHA reproductive health subaccounts</td>
</tr>
<tr>
<td>13</td>
<td>Guide to producing child health subaccounts within the national health accounts framework. 2011 WHO</td>
<td>NHA child health subaccounts</td>
</tr>
<tr>
<td>14</td>
<td>Guide to producing malaria subaccounts within the national health accounts framework. 2011 WHO</td>
<td>NHA malaria subaccounts</td>
</tr>
<tr>
<td>15</td>
<td>Guide to Producing Health Information System Subaccounts within the national health accounts framework. 2013. WHO</td>
<td>NHA health information system subaccounts</td>
</tr>
<tr>
<td>16</td>
<td>National HAPT</td>
<td>A software for producing NHA reports</td>
</tr>
<tr>
<td>17</td>
<td>NHA Production Tool User Guide, Version 1.0</td>
<td>Instructions for using HAPT</td>
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<td>C</td>
<td>Pharmaceutical or medical goods guidelines and tools</td>
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<td>18</td>
<td>Maryam Bigdeli. Medicines in Health Systems: Advancing access, affordability and appropriate use Chapter 6 Annex: Core medicines indicators, data sources and data collection instruments. AHPSR Flagship Report 2014</td>
<td>A list of core medicine indicators, survey tools, data collection instruments, and data sources</td>
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<td>19</td>
<td>Guidelines to measure expenditure on over-the-counter (OTC) drugs. 2012 OECD</td>
<td>SHA: OTC medicine expenditures</td>
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<tr>
<td>20</td>
<td>Tools for mapping financial flows for medicines procurement and distribution, and for rapid assessment of medicines supply management systems. 2012. WHO</td>
<td>financial flows for medicines supply chain management</td>
</tr>
</tbody>
</table>
### Annex 3. Available Guidelines or Tools for Tracking Health Expenditures

<table>
<thead>
<tr>
<th>No.</th>
<th>Guidelines or tools</th>
<th>Notes</th>
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<tr>
<td>22</td>
<td>WHO operational package for assessing, monitoring, and evaluating country pharmaceutical situations: Guide for coordinators and data collectors. 2007 WHO</td>
<td>Survey methodology, level I core indicators, level II facility indicators, survey forms, questionnaire</td>
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<td>D</td>
<td><strong>Distribution of health expenditures/beneficiary characteristics</strong></td>
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<td>25</td>
<td>Extension of work on expenditure by disease, age, and gender. EU Contribution Agreement 2011 53 01 December 2013. OECD</td>
<td>SHA: same as above (expanded)</td>
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<td>E</td>
<td><strong>Facility surveys</strong></td>
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</table>
REFERENCES

References


