

## WHO HEALTH EVIDENCE NETWORK SYNTHESIS REPORT 55

### Health system performance assessment in the WHO European Region: which domains and indicators have been used by Member States for its measurement?

Omid Fekri | Eryln Rachele Macarayan | Niek Klazinga



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## Abstract

Health systems performance assessment (HSPA) varies across the WHO European Region. This review summarizes HSPA domains and indicators used by Member States in their HSPA or health system-related reports. Thirty Member States published in the English language and from their latest documents, 1485 distinct indicators were extracted. The number of indicators reported per Member State ranged from 9 to 146, with a mean of 50. Among the 14 domains of the WHO 2007 framework, service delivery and improved health were covered by virtually all Member States analysed (30 and 29, respectively), but coverage varied for the other 12 domains, with health workforce and financing having good coverage (25 and 26, respectively) but others, such as safety, efficiency, coverage or responsiveness, covered in only 20–30% of documents. Further refinement of frameworks, both in clarity on scope and function and in the conceptual robustness of domains, is warranted and further standardization of generic sets of indicators should be sought.

### Keywords

OUTCOME ASSESSMENT (HEALTH CARE), QUALITY INDICATORS, HEALTH CARE, DELIVERY OF HEALTH CARE, EUROPE

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## ABBREVIATIONS

ECHI	European Core Health Indicators (project)
EHII	European Health Information Initiative
EU	European Union
EVIPNet	Evidence-informed Policy-making Network
HCQI	Health Care Quality Indicators (project)
HSPA	health system performance assessment
OECD	Organisation for Economic Co-operation and Development
SHA	System of Health Accounts

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# SUMMARY

## The issue

The WHO Regional Office for Europe provides technical guidance for health systems performance assessment (HSPA), notably in the areas of building national capacity and on fostering analyses that are comparable across the WHO European Region on existing health policy frameworks. The practise of HSPA varies across the WHO European Region. Consequently, there is a need for baseline information about HSPA across Member States. This review summarizes HSPA domains and indicators used by Member States in their HSPA or health system-related reports. Findings may be useful to identify similarities and differences in HSPA priorities across the Region, inform future comparative assessments of health systems and provide preliminary information for potential areas that WHO may need to further support to strengthen health systems at both national and regional levels.

## The synthesis question

This report examines methods of assessing health system performance in the WHO European Region, asking the question: “which domains and indicators have been used by Member States for its measurement?”

## Types of evidence

The evidence for this review was extracted through a purposive scoping analysis of online and publicly available health systems documents (e.g. national strategic plans for health or health systems, national HSPA reports, national health target reports) published in English by WHO European Region Member States from 2002 to 2015. Each document was reviewed to extract instances on the use of HSPA indicators and to analyse these in terms of the 14 domains of the WHO 2007 health system framework.

## Results

From 2002 to 2015, at least one health system-related publication was found for each of the 53 Member States in the WHO European Region; of these, only 30 Member States published in the English language. Assistance of a collaborating agency (e.g. WHO, World Bank) was acknowledged by 17 Member States and 14 included an HSPA framework in their publication. In total, 1485 distinct indicators were extracted from the 30 English language publications assessed; the number

of indicators reported per Member State ranged from 9 to 146, with a mean of 50. The domains of service delivery and improved health were covered by virtually all Member States (30 and 29, respectively), but coverage varied for the other 12 domains of the WHO 2007 framework, with health workforce and financing having good coverage (25 and 26, respectively) but others, such as safety, efficiency, coverage or responsiveness, covered in only 20–30% of documents.

## Policy considerations

The efficacy and accessibility of an HSPA for health system partners and citizens will be increased if it is robust with well-defined indicators that can be used for comparisons with other systems. Decision-makers responsible for overseeing HSPA management may consider the following to further strengthen existing practices:

- because several indicators could be considered in different domains (e.g. finance, coverage or social and financial risk protection), further clarity of scope and function of domains could help in placing indicators more consistently;
- existing financing indicators could be expanded to cover issues within domains of access, coverage and improved efficiency;
- performance of services as related to the performance of the health system as a whole could be clearly conceptualized within HSPA frameworks, domains and indicators;
- intermediary domains of access, coverage, quality and safety require appropriate and sufficient indicators to describe how performance of input and output of services are realized as intermediary outcomes;
- safety could be conceptualized as a dimension of quality;
- outcome measurement can be broadened from mortality towards quality of life and well-being (i.e. patient-reported outcome measures); and
- the domain of responsiveness could be operationalized in a more comprehensive/standardized manner and might be linked to the need for policies on citizen involvement and empowerment.



# 1. INTRODUCTION

## 1.1 Background

A major part of the world's economic output is invested in health systems (~10% of gross domestic product in 2014 (1)) and so decision-making for optimizing performance of health systems is crucial. HSPA provides an assessment of a health system as a whole, using a limited number of indicators linking outcomes with functions or strategies. It is country specific, embedded in a national or subnational policy process, and linked to national health plans or strategies wherever possible. Quantitative indicators are complemented by qualitative information or in-depth evaluations in order to move from performance measurement to performance assessment and to identify policy options. HSPA methodology can be seen as a multifunctional tool that monitors health system transformations and also provides data to support budget allocations and improve accountability, equity and efficiency within health systems (2,3).

WHO is committed to strengthening the foundations for evidence-informed policies aimed at health system development. This has included work to develop a common conceptual framework for HSPA, to encourage the development of tools to measure its components, and to enhance collaboration between countries to facilitate mutual learning for improving health systems performance.

Since the adoption of the 2008 Tallinn Charter: Health Systems for Health and Wealth, Member States of the WHO European Region have embarked on a path towards health system strengthening, as measured and demonstrated by their commitment to “demonstrate good performance” and to “promote transparency and be accountable for health system performance for measurable results” (4). The WHO health system strengthening priorities for 2015 to 2020, adopted at the 65th session of the WHO Regional Committee for Europe in September 2015 (5), reinforced these commitments, following the vision of the European health policy framework Health 2020 (6) and the United Nations Sustainable Development Goals (7). In 2016, all Member States of the WHO European Region adopted the Action plan to strengthen the use of evidence, information and research for policy-making in the WHO European Region (8). Key action area 1 is strengthening national health information systems, harmonizing health indicators and establishing an integrated health information system for the European Region. Other initiatives from the WHO Regional Office for Europe include the launch of the European Health Information

Initiative (EHII) in 2012, a multipartner network coordinating all health information activities in the WHO European Region and acting as a platform for implementing the Action plan (9). A key element of the EHII is to develop information for health and well-being, with a focus on indicators. For example, the Small Countries Health Information Network, one of four networks within the EHII, will undertake a specialized HSPA in the context of eight small Member States (Andorra, Cyprus, Iceland, Luxembourg, Malta, Monaco, Montenegro and San Marino) (10) and will publish these findings in a summarized report highlighting both national-level results and comparative analyses.

The Evidence-informed Policy-making Network (EVIPNet) is a WHO initiative that promotes the systematic use of health research evidence in policy-making. EVIPNet Europe provides networking, tools and support for building capacity in knowledge transfer and use of the best possible evidence for local decision-making (11). It encourages the development of country-level teams to facilitate policy development and implementation based on the best global and local evidence available. In 2017, it had 19 Member States. Furthermore, the WHO Regional Office for Europe has developed and piloted a support tool to help Member States to assess health information systems, which is key to the acquisition, analysis and application of health information in decision-making (12).

In addition to these initiatives, the WHO Regional Office for Europe has been supporting Member States in publishing their own HSPA reports, with 17 documented in 2016 (13). The Regional Office also supports local capacity-building efforts with an HSPA manual for national and subnational analyses (14).

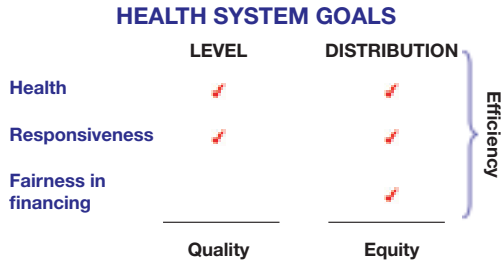
### 1.1.1 Frameworks for HSPA

The first framework to conceptualize and assess health system performance was devised for WHO by Murray and Frenk in 1999 (15). This documented HSPA concepts and measures, as well as three underlying domains: equity, efficiency and quality (Fig. 1). A set of key goals to which health systems contribute was devised, and the first set of figures on goal attainment and health system efficiency was published in The world health report 2000 (16).

The original framework (15), capturing three outcome domains, was modified in 2000 (17) to contain four system functions and three outcome domains (Fig. 2) (18). Hence, health system development was conceptualized in terms of input, throughput, output and outcome in alignment with the theories of Donabedian (19).

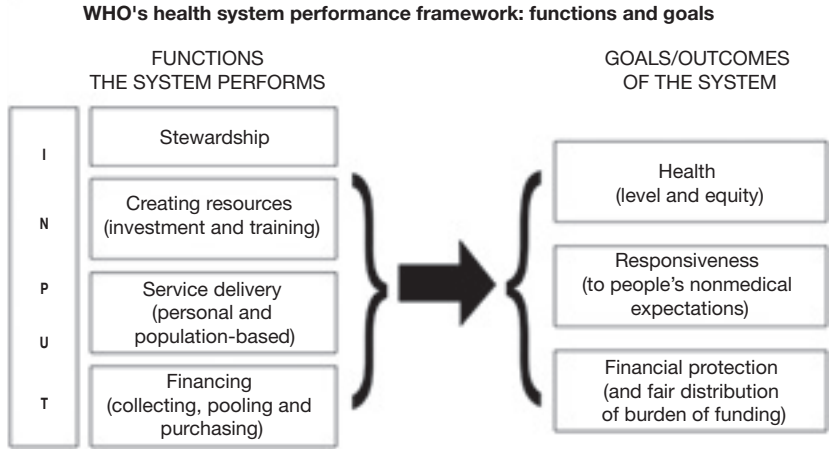


Fig. 1. Health system goals of quality, equity and efficiency in the WHO 1999 framework



Source: Murray & Frenk, 1999 (15).

Fig. 2. The WHO 2000 framework with four functions and three goals

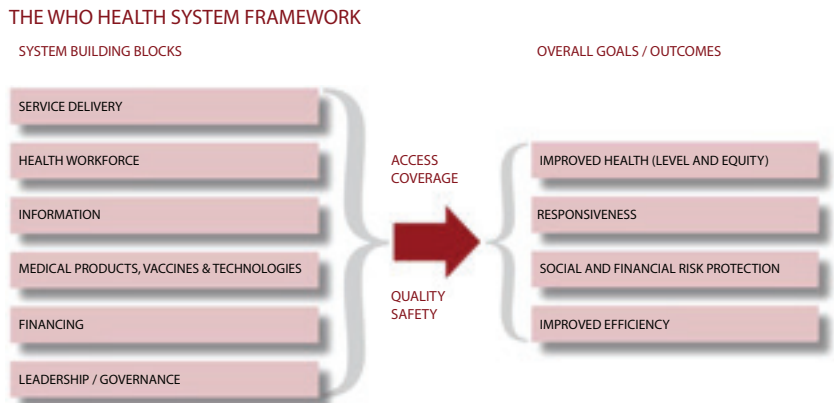


Source: Papanicolas & Smith, 2013 (18).

Based on these conceptual foundations, the framework evolved to a model presented in the WHO 2007 report Everybody's business (Fig. 3) (20). This more recent conceptual model also follows the input-throughput-output-outcome thinking and has the original four outcome domains, but additionally articulates six

system building blocks and introduces the intermediary goals of access, coverage, quality and safety, totalling 14 domains. These building blocks define the desirable attributes of a health system and provide a way to identify where gaps in attributes exist. The 2007 framework emphasizes the measurement of not just the goals of the system but also the building blocks on which the system is based.

**Fig. 3. The WHO health system framework 2007, with six system building blocks and four outcomes**

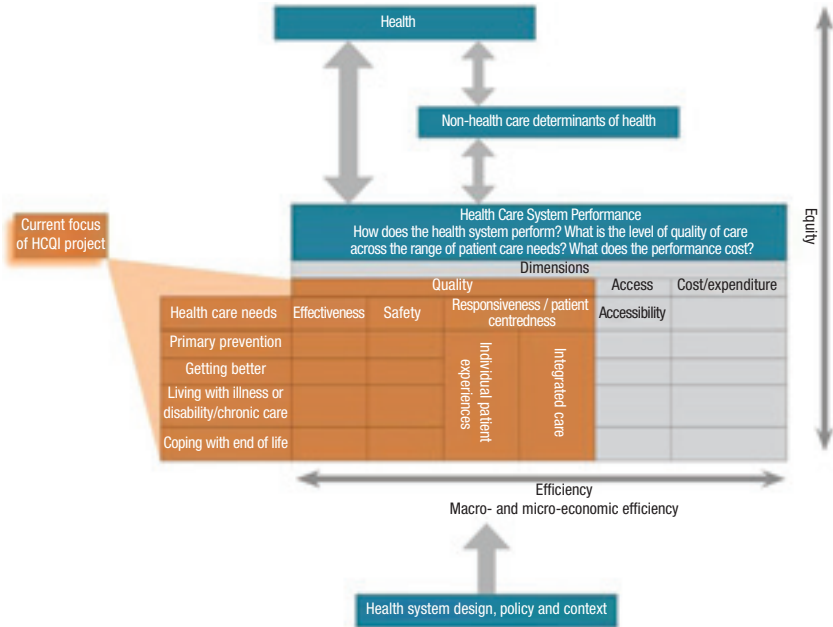


Source: WHO, 2007 (20).

Since this initial work, many attempts have been made to refine frameworks and operationalize measurement in various domains. For example, the Organisation for Economic Co-operation and Development (OECD) launched its Health Care Quality Indicators (HCQI) project in 2001 (21) and since 2007 results of the HCQI project have routinely contributed to international comparisons through the publication of the OECD series Health at a glance (22). Over the years, the OECD has expanded the initial costs of health care as standardized through the System of Health Accounts (SHA) to a broader series of system domains. This has also resulted in the Framework for health system performance measurement, which has been used by the OECD since 2005 and was updated in 2015 (Fig. 4) (21, 23).

The OECD framework builds on previous conceptualizations of health and health system performance measurement. The Lalonde model for public health recognized that, in addition to health care, the factors that together influence the health of

Fig. 4. OECD Framework for health system performance measurement



Source: Carinci et al., 2015 (21).

populations are the environment, genetics and behaviour (the non-health care determinants of health) (24). The OECD framework also integrated the Institute of Medicine’s framework wherein dimensions are horizontally subdivided according to levels of health care needs over the life-cycle, such as staying healthy, getting better, living with illness or disability, and coping with end of life (25).

While for the OECD, HSPA began with an economic aspect (spurring the SHA), for the European Union (EU), HSPA initiatives have been rooted in public health thinking. The Treaty of Maastricht in 1992 introduced the first public health mandate for the EU and began the collection of comparative information on the health of populations. These data are currently administered through the Directorate-General for Health and Food Safety. In 2005, a European Commission communication proposed three long-term goals for EU health care systems (access to care based on the principles of universal access, fairness and solidarity; high-quality care;

and financial sustainability of health care) and selected health indicators to measure progress towards these goals (26). Data on these health indicators are available through Eurostat (27), which also contains joint data collection exercises with the WHO Regional Office for Europe and OECD on the SHA and non-monetary indicators for human and physical resources. Various initiatives have been launched over the years, such as the European Core Health Indicators (ECHI) project (28) and the Expert Group on Health Information (29). In addition to specific aspects of public health, performance indicators have been developed for areas such as workforce, efficiency and cancer care. The latest EU initiative is an Expert Group on Health Systems Performance Assessment, which was launched in 2014 (30). Rather than developing new frameworks or indicators, the Expert Group is summarizing the work on HSPA and its actual use in practice (as evidenced in recent reports on quality of care). In parallel, the EU Social Protection Committee since 2013 has commenced HSPA work as part of a joint assessment framework (31).


The three examples from the EU, OECD and WHO the show the progress that has been made at the international level on standardized measurement of certain domains and their indicators. However, while there has been considerable academic and theoretical progress with respect to efficiency (32) and equity (33), there has been less progress on internationally agreed standardized comparative measures for these domains.

### 1.1.2 Use of frameworks by Member States for HSPA

While health systems in different countries have diverse organization and funding methods, most have similar goals and face similar challenges. A major benefit of having an HSPA is to provide a snapshot of a health system and ideally allow comparisons to be made with that in other countries. Such comparisons offer the possibility of mutual learning and of exploring new options for formulating an effective national health policy.

The chosen purpose of a country's HSPA will dictate the precise use of domains and indicators but generally these are chosen to serve an accountability function, demonstrating the performance of the health system as a whole. They are also reported to be used for internal strategy development (choosing policy priorities based on performance information); for a link to internal governance processes (how do services or regions contribute to the performance of the whole system); and for reflections on national and local level performance, linking to national or regional targets and providing accountability towards government and the public at large. In essence, there is always a balance between the summative function of an





HSPA report (accountability) and the formative function of an HSPA report (which is the learning and improvement function). A key application of the knowledge produced through HSPA is the support of evidence-informed policy-making.

At least 43 out of the 53 Member States of the Region define outcomes for their health system within a national health strategy, policy or plan or in a target programme. Systematic reviews of health systems performance are conducted in practice in at least 18 Member States, some explicitly associated with such plans with others conducted through exercises such as HSPA (3). Overall, at least 32 Member States have national repositories or platforms of health system performance information, with packages of indicators that are regularly measured over time. The number of indicators used varies widely, ranging from 26 to over 1000 per Member State. This large variation in the number of indicators used by different Member States creates issues for international comparisons and for improving health system accountability and transparency.

Consequently, it is important to know more about how and what is measured by Member States in demonstrating health system performance in the WHO European Region. In this report, the WHO 2007 health system framework (consisting of 14 domains) is used as the basis to categorize indicators extracted from HSPA reports by Member States to answer the question: “Health system performance assessment in the WHO European Region: which domains and indicators were used by Member States between 2002 and 2015 for its measurement?”

## 1.2 Methodology

The review was carried out between autumn 2016 and autumn 2017 and examined all publicly available online resources from the websites of ministries of health, national boards of health, national health institutes or agencies, other government agencies, and international organizations such as EU, OECD, WHO and the World Bank to identify relevant articles published in English between 2002 and 2015.

Although all 53 Member States have published a report related to its health system or its performance, only 30 Member States had HSPA reports published in English (Albania, Armenia, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Croatia, Denmark, Estonia, Finland, Georgia, Germany, Hungary, Iceland, Ireland, Kyrgyzstan, Latvia, Malta, Montenegro, Netherlands, Poland, Portugal, Republic of Moldova, Russian Federation, Sweden, Switzerland, Tajikistan, the former Yugoslav Republic of Macedonia, Turkey and United Kingdom). From these, the latest publication

for each Member State was taken (2,34–61) and used for the analysis of domains and indicators.

No documents in English were found for 23 Member States: Andorra, Austria, Bulgaria, Cyprus, Czechia, France, Greece, Israel, Italy, Kazakhstan, Lithuania, Luxembourg, Monaco, Norway, Romania, San Marino, Serbia, Slovakia, Slovenia, Spain, Turkmenistan, Ukraine and Uzbekistan.

The second stage of the analysis identified within these 30 reports in English the indicators that met the inclusion criteria used (Annex 1) and aligned these to the 14 domains of the WHO 2007 framework.

Annex 1 has full details of the methodology.



## 2. RESULTS

### 2.1 Member States performing HSPA in the WHO European Region

Of the 30 Member States with a report analysed for indicators, 17 national reports acknowledged the assistance of collaborating agencies such as the EU (Tajikistan), OECD (Denmark, Russian Federation and Switzerland), WHO (Armenia, Azerbaijan, Estonia, Georgia, Hungary, Kyrgyzstan, Latvia, Republic of Moldova, Switzerland, Tajikistan and Turkey), and World Bank (Albania, Armenia, Azerbaijan, Belarus, Georgia and Turkey).

HSPA reports from 14 Member States included a graphical conceptualization of HSPA through the use of a framework: Albania, Armenia, Belarus, Belgium, Bosnia, Estonia, Georgia, Ireland, Kyrgyzstan, Malta, Netherlands, Republic of Moldova, Tajikistan and Turkey. The frameworks reflect the domains in the WHO 2007 framework, particularly for Member States where HSPA was supported by WHO, such as Armenia and Kyrgyzstan.

### 2.2 The range of domains covered by HSPA in Member States

There was a large degree of heterogeneity in the number of the original 14 WHO domains of the WHO 2007 framework that could be identified in the documents (Table 1), with no single Member State publishing indicators across all 14 domains. The domains of service delivery and improved health were covered by virtually all Member States (30 and 29, respectively), but coverage varied for the other 12 domains, with health workforce and financing having good coverage (25 and 26, respectively) but others covered in only 20–30% of documents (Table 2). The domains of coverage, safety, responsiveness and improved efficiency, measured by only seven Member States, had the least coverage across the WHO framework, with an average of only 18 indicators per domain.

**Table 1. Number of domains reported by Member States**

Total number of WHO domains assessed	Member State
13	Belgium
12	Malta, Turkey
9	Albania, Armenia, Belarus, Tajikistan
8	Germany, Netherlands, Republic of Moldova
7	Azerbaijan, Croatia, Georgia, Sweden, Switzerland, United Kingdom
6	Bosnia and Herzegovina, Estonia, Hungary, Iceland, Ireland, Portugal
5	Denmark, the former Yugoslav Republic of Macedonia
4	Finland, Kyrgyzstan, Latvia, Poland, Russian Federation
3	Montenegro

**Table 2. Number of Member States assessing each domain and indicator counts**

	Domains	Total number of Member States assessing the domain
Input	Service delivery	30
	Health workforce	25
	Information	10
	Medical products, vaccines and technology	14
	Financing	26
	Leadership and governance	12

Table 2 (contd)

	Domains	Total number of Member States assessing the domain
Throughput	Access	13
	Coverage	7
	Quality	11
	Safety	7
Outcome	Improved health, including level and equity	29
	Responsiveness	7
	Social and financial risk protection	10
	Improved efficiency	7

## 2.3 HSPA indicators used by Member States

A total of 1485 distinct indicators were extracted from the 30 reports. There was significant heterogeneity in terms of the number of indicators and domains assessed by each Member State and in the number of distinct indicators contained within each domain, with a range of nine to 146 per country. The following summary maps how these indicators spread across the 14 domains of the WHO framework. This classification used additional contextual information such as chapter/section headings and other text to appropriately classify an indicator where it could fall into more than one domain.

### 2.3.1 Service delivery

The domain of service delivery contained the second highest number of indicators (~20% of all indicators extracted) and was assessed across all 30 documents. The indicators used included classic indicators on the structure of services such as population-related numbers of hospitals, outpatient care, dental services, primary care, vaccination services and community care, and, to a lesser extent, mental health care. With regards to throughput, there was an emphasis on indicators for number of beds, wait times for specific services and

emergency care services. As for performance of services, there were indicators on effectiveness of services, such as in cancer care and responsiveness (user experiences). The level of detail of reporting on some areas, for example hospital performance, differed largely between Member States, with indicators spanning resource counts, such as number of beds and hospitals; provision of service in selected treatments; and patient outcomes.

### 2.3.2 Health workforce

The domain of health workforce was assessed in 25 Member States. This domain took the classic human resources approach and primarily contained structural information on the numbers of practising professionals such as doctors, dentists, nurses and midwives, but notably fewer data on allied health professionals. In terms of policy relevance, there were some indicators that showed the balance in the workforce (physicians–nurses) and geographical distribution, but indicators about the skills mix of the health workforce were rare.

### 2.3.3 Information


Although the information system for health is the basis on which performance information should be generated (62), only 10 Member States included specific indicators on information systems for health. Several of the indicators related to the digitalization of information (e–prescription, e–referral and e–health). With the indicators currently identified, no assessment could be made on the trends and maturing of information structures in their capacities to support HSPA.

### 2.3.4 Medical products, vaccines and technologies

From the 14 Member States reporting indicators within the domain of medical products, vaccines and technologies, many indicators were concerned with reimbursement and the use of pharmaceutical products and devices. Some Member States reported on the compliance with standards on use of specific medications. No indicators could be found on the speed with which the Member States adopt new medications and devices (innovation capacity and its uptake).

### 2.3.5 Financing

The domain of financing was reported by 26 Member States through a large series of indicators (~15% of all indicators extracted). Many indicators were related to expenditure and were consistent with indicators from the SHA. There was also a mixture of indicators related to the functioning of financing



mechanisms, such as insurance coverage, voluntary health insurance and out-of-pocket payments, and covering the spectrum of costs, spending and reimbursement mechanisms.

### 2.3.6 Leadership/governance

The domain of leadership/governance was reported through a limited set of indicators across only 12 Member States. The indicators reflected the explicitness to which Member States have applied public health policies (e.g. on alcohol and tobacco control) and to a lesser extent on elements that have to do with management (centralization and decentralization). In short, the domain contained indicators reflecting the classic enforcement of public health policies rather than any focus on the effectiveness of governance towards the improving of health services.

### 2.3.7 Access

In the literature, access has always been considered as a mixture of financial access, geographical access (distribution) and availability of health care services. In this mode, it is related to planning (sufficient services) and to financing of the system (making services accessible to populations). This is reflected in the limited set of indicators specifically within the access domain reported by 13 Member States. However, some of the indicators could also be seen as reflecting equity.

### 2.3.8 Coverage

Although a very limited number of indicators were identified under coverage, as reported by seven Member States, some of these indicators were addressing inequities. This indicates a need for more conceptual clarity in addressing the overlap between the concepts of financing, access, coverage, efficiency and equity.

### 2.3.9 Quality

The indicators within the quality domain, as reported by 11 Member States, were largely interchangeable with the service delivery domain (on performance of the services in terms of effectiveness and satisfaction), and to a lesser extent with the governance domain (in relation to more structural mechanisms such as accreditation, quality registries and involvement in quality improvement activities).

### 2.3.10 Safety

The safety domain was identified in reports by seven Member States but contained a limited number of indicators, mainly relating to accidents and hospital complications.

### 2.3.11 Improved health (including level and equity)

Improved health (and especially the articulation of level and equity) reiterates the original intentions of the framework by Murray and Frenk (15) and as such this is the domain with the largest set of indicators (~33% of all indicators extracted from the publications). Indicators for this domain were reported by 29 Member States and reflected all the public health themes that have been addressed in recent decades. As in the international literature on health outcomes, there seems to be an expansion from indicators that are mortality based towards indicators based on morbidity and quality of life (a shift from measuring outcomes in terms of death and disease towards measures on disabilities and discomfort, more recently labelled as patient-reported experience measures and outcome measures). In the indicator sets examined, inequities in improved health and well-being were only present to a limited extent.

### 2.3.12 Responsiveness

Only seven Member States had reports that explicitly covered responsiveness, and there were only a limited number of indicators addressing this on a system level. However, indicators could be found in the domains of service delivery and quality that also reflected the responsiveness of specific health services.

### 2.3.13 Social and financial risk protection

Ten Member States reported indicators within the domain of social and financial risk protection. However, this was a limited set of indicators assessing the extent of out-of-pocket payments.

### 2.3.14 Improved efficiency

Despite the extensive academic work on capturing efficiency (31), indicators that capture health system efficiency are still limited and were measured by seven Member States in the reports studied.





## 3. DISCUSSION

### 3.1 Strengths and limitations of the review

The sources of evidence for this review were obtained using a systematic and thorough online search for HSPA documentation in the WHO European Region. In an ideal scenario, a questionnaire would have been sent to each Member State in the Region requesting their participation through provision of documentation on their practise of HSPA, the use of a framework and the specific domains measured. Without such a survey, it is likely that HSPA reports, frameworks and indicators in use by Member States, but not readily available online, have been omitted from this review. The review team agreed that the information collected from the grey literature was most appropriate for the review objectives but future studies may also consider reviewing scientific databases or gathering survey datasets from the statistical agencies or ministries of health of each Member State. Furthermore, the findings of this review were not forwarded to Member States for validation in order to minimize their burden in submitting and validating data. Since the review team was limited to three, future studies may also consider the addition of experts from each Member State to provide more reference materials, examine HSPA frameworks, screen through the list of indicators and validate how indicators can be categorized. Furthermore, as Member States would probably publish a smaller subset of all the HSPA indicators they use within their country, a future study would benefit from a survey format whereby Member States would provide a conclusive list of HSPA indicators.


Only reports published in the English language were included in the analysis of indicators. The process of assigning a corresponding WHO framework domain to each indicator is not a precise process. Where an indicator could be considered to apply to more than one domain, the relevant domains were noted and assessed within the broader context of that Member State's HSPA report, such as the section heading utilizing the indicator. This allowed for context on whether the indicator belonged to a clear topic or domain within the report. Nonetheless, the task of matching each indicator to the WHO framework illustrated the restrictive nature of the framework and in the conceptual organization of the 14 domains. Given that indicators are not necessarily exclusive to a domain, future studies may also examine any overlaps in the HSPA indicators and domains and determine how future HSPA frameworks and methods can account for the non-exclusive and dynamic characteristics of HSPA systems.

Furthermore, Member States varied in their definition and publication of multiple related indicators; for example, indicators of survival rates at varying ages and disease stages can be considered as a single indicator with multiple breakdowns or could be counted as multiple distinct indicators. Further international standardization, supported by international organizations such as WHO and OECD, seems necessary to enhance international comparability. Because of the subjectivity of publishing/categorizing indicators, absolute quantification would be a difficult task given the large degree of heterogeneity across Member States. Nonetheless, the assignment and categorization of HSPA indicators into the WHO framework provides new insight into the domains of health that are measured by Member States, and those domains that are underassessed.

A key strength of this review was the systematic search for HSPA documentation across all 53 WHO European Region Member States, although the authors were only able to assess in detail reports published in English. All reports in English were thoroughly reviewed and catalogued. Since Member States, especially those with well-established HSPA systems, may have used different versions of HSPA frameworks, future studies may also consider comparing how HSPA frameworks change over the years and examine their robustness. Given these limitations, this report does not intend to present an explicit overview of the discrepancies between HSPA reports and the WHO framework. Nevertheless, the report has attempted to provide baseline information about HSPA definitions, purposes, domains and indicators as described by each Member State and collated using the WHO framework. Findings can serve as an important guide for future studies to provide additional information about the state of HSPA practice in Europe.

### 3.2 Categorization of HSPA indicators into the WHO framework domains

It is important to acknowledge that the WHO 2007 framework is not specifically a health system performance framework but rather a health system framework. It does, however, contain many of the necessary elements of a performance framework. It is clearly framed as an input–throughput–output–outcome flow. However, the manner in which its elements are organized can limit its efficacy and interpretation. For example, the domains of access and coverage are complementary, and the degree that populations can access health services will determine the level of coverage for populations. Social and financial risk protection is also an integral



part of these domains as it speaks directly to the amount that patients must pay upfront for care. All of these domains are contingent on the initial building block of financing, and to what extent governments provide comprehensive and universal health coverage. Indicators within the domain of coverage indicate a need for more conceptual clarity in addressing the overlap between the concepts of financing, access, coverage, efficiency and equity. Therefore, the exercise of categorizing HSPA indicators as published by Member States into the rubric of the WHO framework domains is not an exact science. The classification in this report used additional contextual information such as chapter/section headings and other text to appropriately classify an indicator where it could fall into more than one domain.

## 3.3 Reflections on frameworks, domains and indicators

### 3.3.1 HSPA frameworks

Analysis of the frameworks used in HSPA by Member States identified common themes and concepts that originate from the initial publications by WHO. Indeed, WHO has been active in assisting Member States in establishing and performing HSPA. Many frameworks contained most of the elements that should constitute an HSPA framework but several key elements were omitted. For example, few made explicit the non-health care determinants of health or acknowledged the ways in which the health care system does not produce health but supports people in realizing and achieving their optimal health. Active involvement and empowerment of citizens to realize their own health is a key component of recent WHO policies but is only marginally reflected in the frameworks covered in this report, although the latest production date for these would be 2015. Frameworks that omit this understanding can lead to the false assumption that good outcomes can be assured by simply putting the building blocks in place and instituting the intermediary dimensions (such as universal access). Although most reports and frameworks assessed provided generic aims and objectives, the overall scope and function of an HSPA are not always clear, especially with respect to the link between the performance of specific services and the performance of the system as a whole. Therefore, clarity in the distinction between health system performance and health care system performance would facilitate the use of frameworks and indicators that are fit for purpose.


### 3.3.2 HSPA indicators

The most frequently identified indicators were classic public health indicators on health status and outcomes, but these were largely limited to measurements of mortality and morbidity and have yet to expand to the concepts of disability or discomfort. Patient-reported outcome measures are valuable here to go beyond measures of mortality and seek to understand the varying scale of outcomes that are pertinent to patients.

One of the clear issues that arose from the examination of indicators was that there was considerable variation in how certain domains and indicators were used by Member States. Although a substantial set of indicators in areas such as improved health, workforce, financing, and quality and safety seemed to be measured in a more or less standardized way across Member States, many other indicators were less clearly defined. Further international standardization is needed to allow comparisons between HSPAs from different Member States and to make benchmarking more feasible. A core set of indicators that helps to assess the strengthening of national information for HSPA might be in order (e.g. those outlined within the WHO Regional Office for Europe's Support tool to analyse health information systems and develop and strengthen health information strategies (12)).

With the present policy emphasis on realizing universal health coverage, it seems advisable to create more conceptual and operational clarity in related domains and indicators. The indicators identified in this report illustrate the ambiguous nature of the various domains within the present WHO framework. The indistinct boundaries between domains, which has an impact on the ability to assess health systems within and between countries, is illustrated by the domains of service delivery and quality, which have many indicators, and financing, where, conceptually, there is overlap and lack of clarity within the domains of financing, coverage and social and financial risk protection.

With respect to the many indicators on service delivery and quality, the boundaries are unclear between indicators reflecting the effectiveness of specific health services and those reflecting health system outcomes as a whole. This underscores the necessity to make a clear distinction between the performance of health services and the performance of the health system as a whole. Likewise, there also seems to be confusion in the distinction between patient-centred care as a component of quality of health care services and responsiveness as a characteristic of the system.



Financing should mainly contain the resources available for health care on the one hand and the actual spending (resources and spending) on the other. However, a lot of indicator information related to coverage and efficiency, especially on the service level, is also included in the dimension of financing and linked to specific forms of payment and reimbursement mechanisms. Indicators reflecting the extent to which patients avoid care because of financial burden could also be considered part of this domain. With the indicators identified in this report (i.e. out-of-pocket payments and co-payments), it was unclear how information on cost and spending and on payment and reimbursement mechanisms relate to access and coverage.

Two further areas of particular significance for health systems are efficiency and safety. Efficiency seems to be easier to operationalize via service delivery items such as waiting times, waste (noncompliance with guidelines) and substitution of care settings (from hospital to primary care) or between professionals (from physician to nurse). From a health system perspective, the balance between investments in health care versus investments in health seems of importance, emphasizing again the fact that health care is only one of the determinants of health; this is not operationalized clearly in HSPA as yet.

It seems advisable to conceptualize safety, effectiveness and patient centredness within a single quality domain (as is done in the OECD framework and in several other WHO reports). Safety is an important WHO theme, but it is not very intuitive to separate safety-related indicators from those on quality.

### 3.3.3 Moving forward

The findings of this review indicate that the SHA is broadly supported as an international standard for financing issues but more conceptual clarity would be desirable to link financing as input to throughput through coverage and payment mechanisms, thus contributing to the ultimate efficiency and equity of the health system as a whole.

Platforms and fora for valid comparisons at the regional and subregional levels are provided by existing international and regional standards on measurement of health system performance, such as in the SHA, ECHI, WHO/OECD/Eurostat joint data collection on non-monetary indicators, the OECD HCQI project and Health at a glance.

The establishment of targets and benchmarks beyond the national level, however, requires better integration of health information systems and this is dependent on

political effort and agreement across all signing Member States (63). The Health 2020 policy framework is one such example wherein all 53 European Region Member States have agreed a set of regional targets (6). As this policy framework addresses factors of health beyond system performance, including social determinants and subjective well-being, there are only a small number of HSPA-relevant indicators within the framework. Those that are present, such as indicators on vaccination rates, are standardized across all Member States and, therefore, allow for target setting and comparisons.

Similarly, the Sustainable Development Goals have been endorsed by all WHO European Region Member States, and efforts are under way to create a joint monitoring framework for data collection, analysis and reporting of Sustainable Development Goal indicators aligned with existing policy frameworks, including Health 2020 (6) and the Global action plan for the prevention and control of noncommunicable diseases 2013–2020 (64).


There are a number of measures that could be seen to support strengthening the link between HSPA, health system governance and national health information systems:

- linking the assessment and improvement of the health system to performance measurement and improvements at professional, institutional, local and regional levels;
- linking performance measurement with strengthening and integration of (national) health information systems and infrastructure, thus supporting better governance and evidence-informed decision-making; and
- using available support tools, such as that provided by the WHO Regional Office for Europe, to assess health information systems and develop and strengthen health information strategies.

### 3.4 Policy considerations

In order to strengthen the practise of HSPA, Member States may consider the following policy considerations with regards to HSPA domains and indicators, based on this review:

- because several indicators could be considered in different domains (e.g. finance, coverage or social and financial risk protection), further clarity of scope and function of domains could help in placing indicators more consistently;

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- existing financing indicators could be expanded to cover issues within domains of access, coverage and improved efficiency;
  - performance of services as related to the performance of the health system as a whole could be clearly conceptualized within HSPA frameworks, domains and indicators;
  - intermediary domains of access, coverage, quality and safety require appropriate and sufficient indicators to describe how performance of input and output of services are realized as intermediary outcomes;
  - safety could be conceptualized as a dimension of quality;
  - outcome measurement can be broadened from mortality towards quality of life and well-being (i.e. patient-reported outcome measures); and
  - the domain of responsiveness could be operationalized in a more comprehensive/standardized manner and might be linked to the need for policies on citizen involvement and empowerment.

## 4. CONCLUSIONS

HSPA has advanced significantly since its initiation by WHO in the early 2000s, but progress has not been equal across the European Region. HSPA is of significant importance and value for national health system strengthening and policy-making at the country level. A central tenet of HSPA is the power for valid comparisons across health systems and this is only possible if measures are conceptualized and reported in a standardized manner, and if health information systems are developed to collect the required data. The WHO European Region has made great strides within its policy frameworks, such as Health 2020, and with international partners such as the OECD and EU on joint reporting programmes to raise capacity, streamline reporting and arrive at meaningful measures comparable across health systems. The frameworks and indicators as reported by Member States show that further refinement of frameworks, both in clarity on scope and function and in conceptual robustness, is warranted, and further standardization of generic sets of indicators should be sought. Member States will benefit from the continued efforts by WHO to provide technical support and networking opportunities.






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## ANNEX 1. SEARCH STRATEGY

This study has two phases: (i) a descriptive evaluation to review HSPA publications and to quantify the domains and indicators used by Member States; and (ii) an explorative evaluation to contextualize the utilization of the existing HSPA domains and indicators.

### Selection of studies and data extraction

A search was performed for each of the 53 Member States within the WHO European Region. HSPA reports listed within the accountability study (1) were used as a preliminary source for the review but the search considered all publicly available online resources from the websites of ministries of health, national boards of health, national health institutes or agencies, other government agencies, and international organizations such as the EU, OECD, WHO and the World Bank. An additional search was carried out using academic databases such as CINAHL (Cumulative Index to Nursing and Allied Health Literature), PsycINFO and PubMed, but the articles gathered from these databases were used only to guide the analysis. The review team agreed that the information collected from the grey literature was most appropriate for the review objectives.


Although preference was given to documents with HSPA in the title, other health systems documents were also included since these reports might reflect prospective plans for HSPA indicators that could potentially be used or prioritized by the Member State. This inclusion also considered that not all reports related to HSPA may have used the same terminologies in their titles. For full-text screening, preference was given to reports that used the following key terms in their titles:

- health system performance assessment
- national health system strategic report or national health target(s)
- health system review.

For each of the 53 Member States, reports that met the following criteria (2) were identified:

- published between 2002 and 2015;
- contain HSPA indicators used by the Member State;



- 
- led by or carried out in collaboration with the Member States;
  - built on an organized set of quantitative measures or performance indicators and incorporating analytical tools; and
  - comprehensive and balanced in scope, covering the whole health system rather than specific programmes, objectives, levels of care or specific diseases.

Only the most recent document from a Member State was retained for analysis: the review team agreed that it was more appropriate to examine the latest document since it was more likely to reflect the current state of HSPA even though earlier reports might be more complete or present more robust indicators.

Each of the 53 Member States had published a report related to health systems or its performance, but only 30 Member States had HSPA reports published in English and data extraction for indicators was carried out on the final set of 30 reports.

## Indicator data extraction

Within each HSPA report analysed, any instance of an HSPA indicator was recorded, including its title and domain alignment to the WHO framework's 14 domains. Any use of a graphical HSPA framework by the Member State in the publication was also noted. One author performed the initial extraction and categorization of indicators into domains. A second author reviewed the coding, and any disagreements were resolved by the third author.

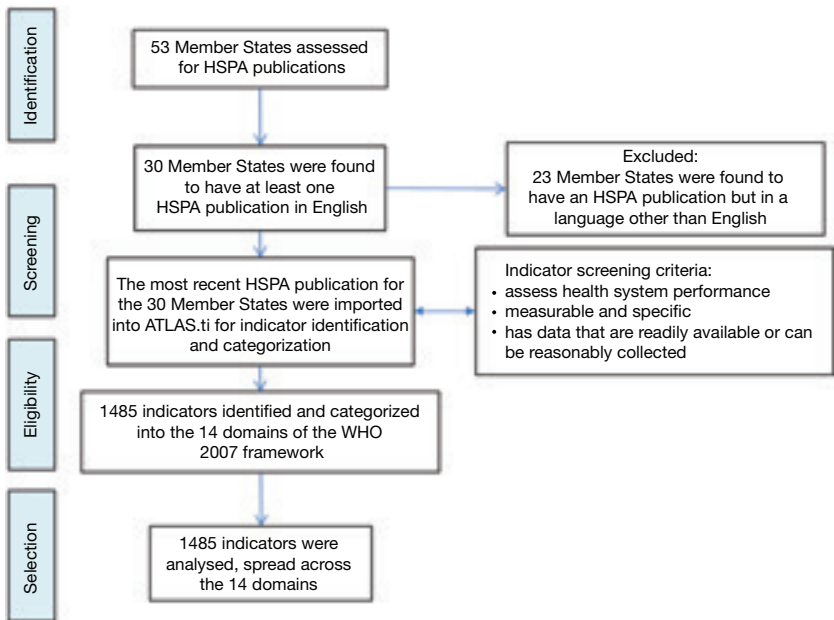
In some cases, indicators could be categorized under two or more WHO domains since the indicators and domains are not mutually exclusive. However, the final designation for each indicator was limited to the primary domain most related to the heading, chapter title or section of the HSPA source document. For example, an indicator pertaining to pharmaceutical expenditure could be classified under medicines, health financing or another domain such as efficiency. In such cases, supporting contextual information from the source document was used to appropriately categorize the indicator into the WHO domain to reflect the intention of the source document. Since HSPA is intended to be a country-owned participatory process that is locally grown and nurtured (2), using the thematic assignment for the indicator in the source document should reflect how an indicator was perceived by the Member State. Using the same example, pharmaceutical expenditure was classified under the medicines domain if the heading for the indicator in the source document was medicine rather than financing.

ATLAS.ti software (version 8.0.41.0) was used to identify and categorize indicators according to the 14 domains within the WHO framework. Criteria used in screening for indicators included:

- the indicator assessed health system performance or progress;
- the indicator was measurable and specific; and
- the indicator had data that were readily available or could reasonably be collected for its calculation.

Overall, 1485 indicators were collected from the 30 documents analysed (Fig. A1.1).

**Fig. A1.1. Selection of source documents and indicators**





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