

ESSENTIAL PUBLIC HEALTH FUNCTIONS, HEALTH SYSTEMS, AND HEALTH SECURITY

Developing conceptual clarity and a WHO roadmap for action

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Executive summary

Background

Since the first World Health Organization (WHO) list of essential public health functions (EPHFs) was published in 1998, EPHFs have been a recurring method used by WHO regions, Member States and other global health actors to help define public health competencies and chart health system reforms. In light of the differing methods and results obtained across the world over the past two decades, WHO headquarters in Geneva called on the World Federation of Public Health Associations to explore the feasibility of uniting efforts across WHO regions to develop a unified list of public health functions, the so called “A Systems Framework for Healthy Policy”. Resolution WHA 69.1 provides WHO with a strong mandate to support Member States in strengthening EPHFs as the most cost-effective and sustainable way to reach key health goals which are central to achieving universal health coverage and to the Sustainable Development Goals (SDG) agenda. There is, however, demand from Member States and from WHO regional offices and colleagues to provide greater conceptual clarity on EPHFs in order to strengthen efforts on health systems planning and public health advocacy. To advance some of the above priorities for the global EPHF agenda, the objective of the work underlying this report was to develop a reference document on WHO policy and operational perspectives of regional approaches on EPHFs and the links with the International Health Regulations (2005) and health systems strengthening, and to provide a glossary for use in framing discussions on resilient health systems and universal health coverage.

Methods

A systematic review was carried out of all peer-reviewed and grey literature describing EPHF frameworks and experiences over the past 25 years. The analysis of this information was complemented by qualitative data gathered in key informant interviews with professionals in different regional offices and elsewhere who have worked on or are currently developing the public health agenda. The content of the different EPHF frameworks was analysed to identify common themes as well as differences. In addition, the EPHF framework of the World Federation of Public Health Associations was examined and compared with the other published frameworks.

Key findings

With regard to the different EPHF frameworks used by WHO regions, there are two relevant experiences from the early 2000s, from the Pan-American Health Organization and the Regional Office for the Western Pacific. In the past 10 years (and especially in the past five), the Regional Offices for Europe and the Eastern Mediterranean have also produced assessment tools on EPHFs and guided assessments and subsequent reforms in Member States. Common elements of the frameworks include surveillance, governance/financing, health promotion, health protection/legislation, research, and human resources. More differences exist in how the regions frame disease prevention, health care, emergency preparedness, social participation and communication within public health. In particular, there are evident differences in regional perspectives about health care; some public health experts, for example in the Western Pacific Region, see universal health coverage as a cornerstone of any public health programme and as an appropriate conceptual home for the EPHFs. The Pan-American Health Organization has a similar view on the importance of universal health coverage but sees the EPHFs as a focus for the

capacities and institutional arrangements that can transform health care delivery into a people- and community-centred model of care. The European Region extends this conceptual understanding and seeks to use the EPHFs to explicitly distinguish population-based health services and intersectoral approaches from health care-centred initiatives, and to focus attention on an area of the health system that is relatively neglected in this region. These difference within the global public health community are a challenge to efforts to come to a consensus on the operational definition of public health. This debate and the non-participatory way in which the framework of the World Federation of Public Health Associations was developed have undermined support for this framework as a means to unify the different WHO lists.

Next steps and recommendations

In this context, WHO could consider three courses of action to move the EPHF agenda forward globally.

- The first option is to re-launch the consensus process with a strong leadership role for WHO and the close participation of regional offices and international partners (World Federation of Public Health Associations, Centers for Disease Control and Prevention, World Bank). The common elements of the WHO lists might serve as a starting point to develop a consensus list of meta-functions, which regions and countries could then adapt.
- A second option is to explicitly respect the different perspectives on public health, and encourage regions and Member States to develop their own frameworks as the first step in locally-based reform processes. This possibility acknowledges the importance of local ownership on health systems priorities and reforms.
- The third option is to develop a list of EPHF-related targets (either as a single list directed at the most vulnerable Member States or a tiered list of functions that help map health systems development). This option avoids semantic debates about the definition of public health, and focuses energy instead on achieving common goals in the pursuit of better population health.

All of these options have potential benefits and risks, and WHO needs to take a strong leadership role to maximize the benefits and minimize the risks. The three levels of WHO (country, region and headquarters) should have the opportunity to carefully consider and jointly discuss the above options in order to optimize their ownership and involvement in the final decision.

1. Background

Context of essential public health functions

Although there has been a general consensus about the basic conceptual features of public health since Winslow (1), its practical boundaries in government, the private sector and throughout society have proven much more flexible. In the early 20th century, the functions assigned to public health agencies were basically confined to environmental sanitation, control of communicable diseases and hygiene. Over the course of the century, the field gradually expanded its remit to include areas such as health promotion, control of noncommunicable diseases (NCDs) and access to primary care, which has led to overlap with the health care sector (e.g. nutrition, maternal and child health and screening programmes) and other sectors of government and society (environment, agriculture, education, industry and urban planning, to name just a few).

In response to this increasing conceptual complexity and its practical implications in the delivery of health services, health actors around the world began to develop a list of functions to define public health. Within the World Health Organization (WHO), the development of the first list of essential public health functions (EPHFs) in 1997 (2) was driven in large part by the dissolution of the Soviet Union and the subsequent breakdown of basic population health services in the region. The newly independent states, many of them with little or no experience in public health governance, looked to WHO for guidance on a list of *fundamental* and *indispensable* functions to meet public health goals. In the United States of America, the Centers for Disease Control and Prevention (CDC) had just developed its own list of essential public health services in 1994 (3). The CDC framework shared the WHO purpose of defining public health operations in order to better organize the capacities and institutions underpinning public health services. However, the CDC list—and the subsequent tool developed in conjunction with the Pan American Health Organization (PAHO) and the Centro Latinoamericano de Investigación en Sistemas de Salud (CLAISS) (4)—was conceived as an exercise in capacity-building rather than a means to ensure a minimum level of services. These origins can still be felt today in the tools generated on the basis of these frameworks. Moreover, these early EPHF frameworks were conceived as strategies to improve the overall performance of health systems, with a broad definition of public health that included personal health care, beyond population-based services.

Since the late 1990s, four WHO regions—European, Western Pacific, Americas and Eastern Mediterranean—have developed their own lists of EPHFs (in the European Region, these are called essential public health operations). Nevertheless, with the exception of the European Region and to a lesser extent the Eastern Mediterranean Region, there have been few formal outputs from the American and Western Pacific regions since the conclusion of their regional initiatives (5,6).

However, recent global public health events, including H1N1 influenza in 2009, the Ebola virus disease epidemic in West Africa in 2014, and Zika virus in the Americas in 2016, have once again brought public health—and public health services—centre stage. In the pursuit of better public health and more resilient health systems, the EPHFs serve to unify complementary public health strands under a broad policy umbrella: WHO recognizes that the EPHFs are important to achieving universal health coverage (7), and they also align closely with the United Nations Sustainable Development Goals (SDGs) and integrate key actions that underpin global health security, including surveillance and the implementation of the International Health Regulations

(2005) (IHR). In this context, resolution WHA69.1 provides WHO with a strong mandate to support Member States in strengthening EPHFs as the most cost-effective and sustainable way to reach key health goals, including universal health coverage and the SDGs.

To explore how each of these goals (universal health coverage, SDGs, health security) relates to the EPHFs, a meeting was held in Copenhagen in March 2016 with the participation of all three WHO levels (country, region and headquarters) (8). Key discussion points included regional perspectives and experiences relating to the EPHFs, current IHR work on health security and possible linkages between the two, and broader efforts on health systems strengthening.

With regard to regional perspectives on EPHFs, although there were numerous overlaps of different initiatives, it was clear that there was no unified WHO approach. The WHO regions that have developed their own list of EPHFs have done so individually, through regional programmes, at different times over the past 20 years. The same is true for other areas of work related to public health: despite clear conceptual synergies with EPHFs, there is no organizational framework to tie the EPHFs to universal health coverage, health systems strengthening, or IHR implementation.

In order to reinforce and advance public health across WHO regions, meeting participants agreed on the following priority actions.

- Apply the IHR joint external evaluation tool at the country level to advance health security, with clear milestones.
- Capitalize on the recent experiences of the European Region with the essential public health operations in order to identify a core set of functions or meta-functions for global adoption, allowing room for regional, subregional or national adaptations.
- Identify major gaps in capacity in IHR and EPHFs.
- Adapt the health systems strengthening tool developed in the Pan America Health Organization for cost assessment of IHR capacity.
- Provide conceptual clarity on the interrelatedness of health systems strengthening, EPHFs and health security which could include a glossary defining EPHF purpose and services, capitalizing on the work done in the Eastern Mediterranean Region.

Project objectives

To advance some of the above priorities for the global EPHF agenda, the objective of this report is to provide a reference document to support WHO policy discussion on EPHFs. It includes a description and evaluation of the work of WHO and others on EPHFs, discussion of the critical linkage with the IHR and health systems strengthening agendas, and proposed options for progressing this work. It also provides a glossary for use in framing discussions on “resilient” health systems and universal health coverage (section 9).

In parallel with this project, WHO headquarters developed a roadmap for conceptualizing and implementing EPHFs in a concerted way (Annex 1).

Project scope

This report describes past and current EPHF frameworks and initiatives in different WHO regions as well as those from other global health actors, including CDC and the World Bank. The report also discusses the most recent initiative of the World Federation of Public Health Associations

(WFPHA), *A Global Charter for the Public's Health* (9) and explores its potential to serve as the common platform and collection of public health meta-functions for regions/countries, the feasibility of gradually adapting existing frameworks to it, and its appropriateness for use as a platform to mobilize support for public health among political leaders.

The report goes on to consider operational implications, in light of past efforts to advance the EPHF agenda, and how the lessons learned can be used to guide future assessments and other initiatives to strengthen public health capacities and services. Existing tools and strategic gaps in this work are described, and cross-cutting areas of action with other initiatives are discussed, including universal health coverage and implementation of the IHR.

2. Methods

This report is based on a comprehensive literature review, combined with interviews and correspondence with key informants involved in developing different EPHF frameworks in WHO regions and elsewhere.

The literature review was done in September and October 2016 and included searches in PubMed, DART-Europe E-theses Portal, Networked Digital Library of Theses and Dissertations, PQDT Open and OpenGrey. The websites of key organizations were also searched, including all websites of WHO regions and those of other global actors known to be active in EPHFs, such as the World Bank, CDC, the WFPHA and the European Centre for Disease Prevention and Control. Key words were “essential public health functions”, “essential public health operations”, “essential public health services”, which were searched for alone or in combination with “health systems strengthening”, “universal health coverage”, and “International Health Regulations”. No specific searches were done for these latter terms in isolation. In addition, experts within professional public health networks were contacted for any other relevant materials that might have been missed in the literature search.

Inclusion criteria were original studies or reviews detailing the development of national EPHF lists or the implementation of EPHF assessments. All documents on EPHF initiatives with WHO involvement were included. No studies or reviews exploring the links between EPHFs and other WHO or global public health programmes (e.g. universal health coverage, IHR, health systems strengthening) were found. The exclusion criteria were: studies that discussed only one aspect of delivering EPHFs (e.g. cost) or used the EPHFs to assess a single public health service, capacity or area of work (e.g. education); viewpoints or commentaries; and studies not published in English or Spanish. The search strategy yielded a total of 173 records: 151 from PubMed, 14 from PQDT Open, 1 from Open Grey and 7 from WHO websites. A key CDC website was found¹ as well as two project sites from the World Bank^{2,3}, from which several relevant documents were obtained. A further 21 records were found from handsearching reference lists and contacting relevant experts in the field. After screening and removing duplicates, 96 records were initially judged to be relevant to the study objectives. After review of the full text of the papers, 48 were excluded and 48 retained in the review and are cited in this report. A flow diagram of the selection of records is given in Fig. 1.

¹ <https://www.cdc.gov/nphpsp/>

² <http://projects.worldbank.org/P071160/karnataka-health-systems?lang=en&tab=overview>

³ <http://projects.worldbank.org/P110599/essential-public-health-functions-programs-ii-project?lang=en>

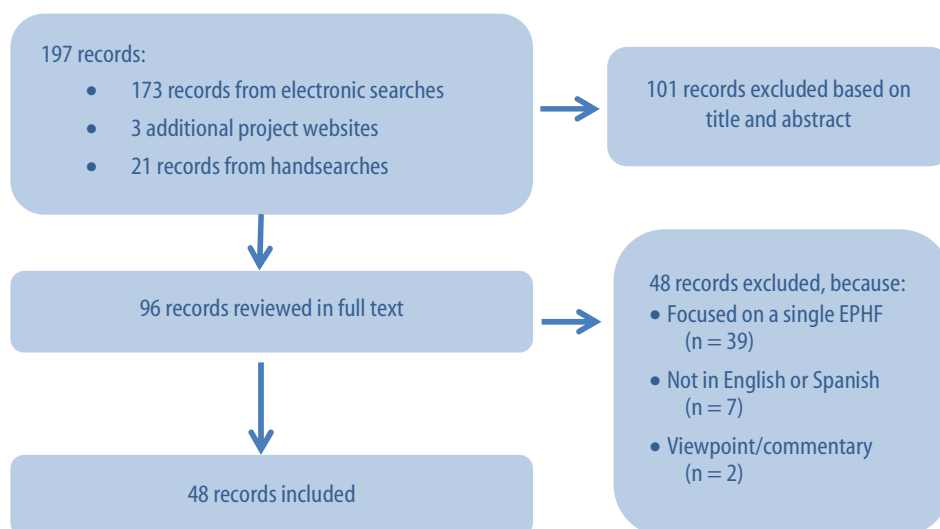


Fig. 1. Flow diagram of the selection of records on essential public health functions (EPHFs)

The second avenue of investigation consisted of interviews and correspondence with key informants in WHO regions who were/are involved in developing regional frameworks of the EPHFs. When the identity of the relevant professionals was not known, they were identified through WHO channels. Prominent experts from CDC and the World Bank were contacted to gain an interorganizational perspective. Interviews were open, based on a limited number of conversation prompts, and conducted by telephone or videoconference between December 2016 and February 2017. The interviews focused on collecting information about current work on the EPHFs and exploring different perspectives on the WPHA's *A systems framework for healthy policy* (10) and on the next steps for the EPHF agenda, as seen from a country or regional standpoint. In a few cases, respondents preferred to submit answers by email.

A total of five interviews were carried out with representative from:

- CDC Global Health (7 December 2016).
- WHO Regional Office for the Western Pacific (WPRO) (11 January 2017).
- Pan American Health Organization (PAHO) (17 January 2017).
- WHO Regional Office for South-East Asia (SEARO) (7 February 2017).
- WHO Regional Office for the Eastern Mediterranean (EMRO) (9 February 2017).

In addition, the WHO Regional Office for Europe (EURO) sent written comments. The WHO Regional Office for Africa (AFRO) and the World Bank acknowledged our messages but, despite several attempts, no feedback was obtained from them.

3. Frameworks for essential public health functions

Over the past two decades, there have been numerous programmes to develop work on EPHFs (or services or operations) by WHO regional offices, other global health actors such as CDC and the World Bank, and individual countries or regions. A summary of these programmes and their policy implications is given in a previous literature review (11). The initiatives developed by international organizations have understandably had a wider reach and influence, and these are the main focus of this report. At the same time, it is important to also touch on local EPHF lists, as they illustrate the kinds of adaptations that are seen as necessary at a country or subcountry level. The major institutional initiatives are described in turn in the following subsections.

Annex 2 gives a tabular summary of the main features of the EPHF lists reviewed and a description of the assessment tools.

WHO frameworks

Across WHO regions, there have been three consolidated efforts to pursue the EPHF agenda: in the Americas Region, particularly with the Public Health in the Americas Initiative of 2001–2002 (5), the European Region (12) and the Western Pacific Region (6) in 2002–2003. A more recent initiative was started in 2013 in the Eastern Mediterranean Region (13). The Americas and Western Pacific regions are in the process of updating their lists and renewing their efforts on EPHFs, often through closer linkages with other priority programmes, such as universal health coverage.

European Region: Delphi study and the later essential public health operations

Key points

- The European Region has developed several versions of its essential public health operations and has been guiding country self-assessments in Member States since 2007.
- Its approach is characterized by an emphasis on population-based services and intersectoral leadership and management strategies, with little explicit focus on increasing access to personal health care services.
- Keys to successful assessments have been a strong sense of ownership among national stakeholders, formal linkage with political and planning processes, and availability of human and technical resources for assessment and policy implementation.

Although the European Region was the first WHO region to work on the EPHFs with its 1998 Delphi study (2), which laid out 9 vertical functions (i.e. groups of services, such as occupational health) that were considered essential for governments to provide, it wasn't until 2007 that this work was followed up with the development of a specific policy tool. This was a self-assessment tool for the essential public health operations—the term functions was replaced with operations in order to avoid confusion between the EPHFs and the health system framework functions introduced in the *World health report 2000* (14). The framework functions were largely integrated into the 2007 list, which resulted in a more balanced approach between horizontal functions, such as financing and workforce development, and traditional vertical functions, such as health protection and disease prevention.

Of special note, the health care component within the concept of universal health coverage is not prominent in the European essential public health operations, largely as a result of the long tradition of social health care schemes (both in the former Communist states of the east as well as in the western half of the region, with social insurance models and nationalized health care).

The tool was commissioned by EURO at the request of the South-Eastern Europe Health Network, which was tackling public health strengthening through a subregional (10 country) initiative. This not only laid the groundwork for evidence-based policy reforms in south-eastern Europe, but also encouraged a larger movement within the wider European Region to assess public health capacities and services in other countries, including Estonia, Russia, Slovakia and elsewhere.

In 2012, the essential public health operations were included as a cornerstone of the *European action plan for strengthening public health capacities and services* (15). As part of the portfolio of policy instruments for implementation of the European action plan, the 2007 version of the self-assessment tool was revised based on technical feedback from Member States, partners and the extended advisory group for the implementation of the European action plan.

The revision, finalized in 2014, organized the essential public health operations on four levels: operations, sections, suboperations and scoring criteria. These criteria are based on specific WHO (or other international) guidelines relevant to the area of work. For example, the first essential public health operation (EPHO 1), "Surveillance of population health and well-being", is divided into four sections: a) health data sources and tools; b) health- and disease-specific surveillance programmes; c) surveillance of health systems performance; and d) data integration, analysis and reporting. These sections are further divided into specific suboperations; for instance, EPHO 1.A.1 deals with the civil registration and vital statistics system, and contains 10 criteria based on the WHO *Rapid assessment of national civil registration and vital statistics systems* (16) (Box 1). Thus, the methodological strategy for developing the assessment criteria is built on evidence-based WHO guidance from across all areas of public health, and the tool itself provides additional references, should assessors wish to consult more detailed information.

The result of this approach is the most comprehensive inventory of public health functions to date. Complementing the paper-based tool, which was published in 2015 (17), a web-based version with multi-user functionalities for collaborative performance of the assessment was launched in 2016 on the EURO website (18).

Assessments using the revised tool have formally been undertaken in the former Yugoslav Republic of Macedonia (2014), Bosnia and Herzegovina (2014–2015), Poland (2014–2015), Cyprus (2015), Armenia (2015–2016), and Slovenia (2015–2016).

Box 1. Suboperation 1.A.1 of the essential public health operations self-assessment tool

1.A.1. Civil registration and vital statistics system

Briefly describe the following elements.ⁱ

Legal framework for civil registration and vital statistics	
Registration infrastructure and resources	
Organization and functioning of the vital statistics system	
Completeness of registration of births and deaths	
Data storage and transmission	
Practices and certification compliant with International Classification of Diseases (ICD) within and outside hospitals	
Practices affecting the quality of cause-of-death data	
ICD coding practices (incorporation of ICD-10-CM ⁱⁱ)	
Coder qualification and training; quality of coding	
Data quality ⁱⁱⁱ	
Score (0–10):	Areas for improvement: G, F, RG, SD

G: governance; F: financing; RG: resource generation; SD: service delivery.

ⁱ Rapid assessment of national civil registration and vital statistics systems. Geneva: World Health Organization; 2010 (<http://apps.who.int/iris/handle/10665/70470>, accessed 26 August 2014).

ⁱⁱ International Classification of Diseases, tenth revision, clinical modification (ICD10-CM) [website]. Atlanta, GA: Centers for Disease Control and Prevention; 2014 (<http://www.cdc.gov/nchs/icd/icd10cm.htm>).

ⁱⁱⁱ Data quality is defined throughout according to the following criteria: accuracy; relevance; timeliness; comparability; access, dissemination and use; and security and privacy.

A recent series of case studies on assessments of essential public health operations completed from 2007 to 2015 evaluated the assessment process itself based on qualitative interviews with key informants from Member States (19). Of the three countries included that used the revised tool (the former Yugoslav Republic of Macedonia [see Box 2], Poland and Cyprus), two explicitly used the assessments to design and inform an ongoing public health reform process. The detailed nature of the assessment required the involvement of dozens of professionals across government ministries, nongovernmental agencies and academic bodies in a clear example of intersectoral collaboration and public health capacity-building. With regard to the time commitment for such a detailed evaluation, respondents were divided on its necessity, with some enthusiastically in favour of the approach, citing the high-quality, evidence-based data it elicited, while others found it overly burdensome and would have preferred a more streamlined tool that focused on priority areas. However, all agreed that the process helped to forge or improve relationships with colleagues in other sectors, departments and organizations, and as a result of the assessment, national leaders came out with a clear idea of what they needed—and from whom—to further advance public health in their countries.

Box 2. Former Yugoslav Republic of Macedonia: translating the findings of the assessment of EPHOs to public health reform through leadership and participation

Building on the positive experience gained in the country's first assessment of essential public health operations (EPHO) in 2007 (within the context of the South-Eastern Europe Health Network), in 2014 the former Yugoslav Republic of Macedonia volunteered to be the first country to evaluate its public health capacities and services using the revised EPHO self-assessment tool. With the support and participation of a strong public health community, the assessment was explicitly conceived to inform the development of a comprehensive public health strategy in line with the WHO European health policy, Health 2020: Together for Health for All. It started with a three-day workshop in the city of Ohrid and was followed by personal consultations with about two dozen governmental, nongovernmental and academic partners. Evaluations of each EPHO were distributed between different multidisciplinary working groups, several of them led by nongovernmental or intersectoral stakeholders; these groups partnered closely with the WHO Country Office to complete the assessment and produce the final report in 4–5 months.

The assessment led to three immediate benefits: it expanded intersectoral professional networks, facilitating linkages at a technical level between ministries and agencies; it mapped current institutional competencies and responsibilities after a series of dynamic institutional changes in the country; and it increased awareness of the need for continuous collaboration between those providing public health services, which resulted in the creation of new institutional mechanisms for collaboration, including focal points across government to continuously monitor progress on operations identified as weak.

The experience not only strengthened the consensus on the need for policies that the Ministry of Health had already envisaged as priorities, such as the control of noncommunicable diseases, but also highlighted new cross-cutting areas for improvement. For example, weaknesses revealed in EPHO 7 prompted a comprehensive evaluation of human resources for health in 2016, which will form the basis of a strategic plan for its improvement in the near future.

Overall, the tool was well accepted, and the Ministry of Health has already had it translated into the national language and incorporated it in a purpose-built software program, which will ensure that Macedonian health professionals have a relevant, user-friendly metric with which to measure system performance and outputs well into the future.

Source: Midterm progress report on implementation of the European Action Plan for Strengthening Public Health Capacities and Services. Information document. WHO Regional Office for Europe; 2016

(http://www.euro.who.int/__data/assets/pdf_file/0008/315863/66wd19e_PublicHealthProgressReport_160568.pdf?ua=1, accessed 11 October 2016).

Keys to a successful assessment, understood as the development and implementation of evidence-based public health reforms, included an explicit link to a reform process, broad-based participation and ownership of national stakeholders, and the availability of technical assistance for both the assessment itself and the subsequent prioritization process needed to make specific policy recommendations (see Fig. 2). Other useful outputs of the assessment process included a mapped description of all public health services and the name of the agency and/or technical professional responsible for their provision (a great asset in countries with new governments or where organizational changes have recently occurred) and solid justification for increased funding for public health during interministerial budget discussions.

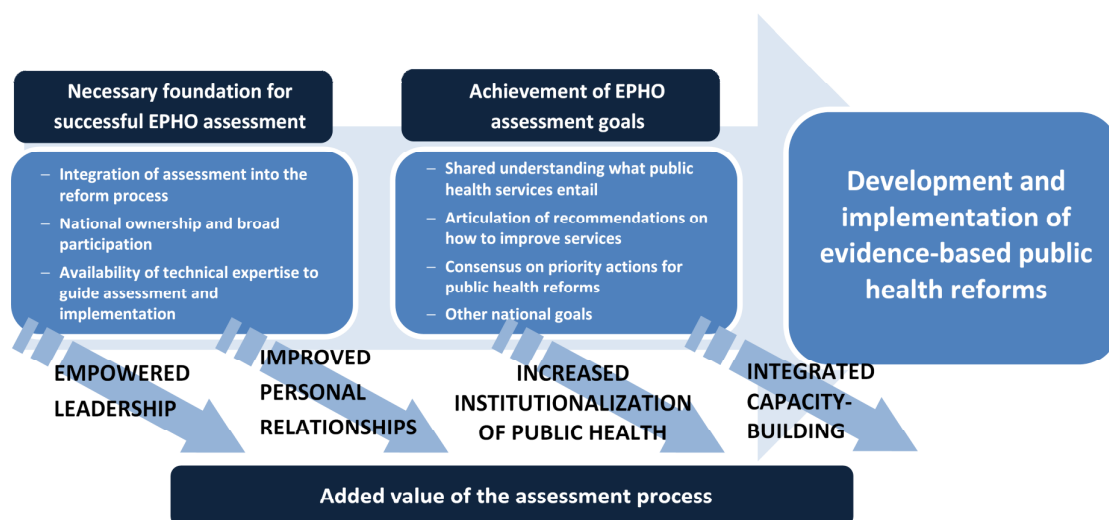


Fig. 2. Characteristics of a successful self-assessment of essential public health operations (EPHO)

(Source: WHO Regional Office for Europe. Midterm progress report on implementation of the European Action Plan for Strengthening Public Health Capacities and Services. Information document (<http://www.euro.who.int/en/about-us/governance/regional-committee-for-europe/66th-session/documentation/working-documents/eurrc6619-midterm-progress-report-on-implementation-of-the-european-action-plan-for-strengthening-public-health-capacities-and-services>, accessed 11 October 2016)

As assessments continue in a number of European Member States, EURO continues to provide additional support to public health authorities and ministries of health, both during the assessments and beyond. Most recently (30–31 January 2017), EURO hosted a workshop for public health experts and partners (20) to start the development of a joint agenda for action to implement the *European action plan for strengthening public health capacities and services*. The priorities of this agenda are the enabling functions, particularly human and financial resources, organization and public health legislation. These priorities also respond directly to the demands of Member States, which will share responsibility for implementing the agenda.

Americas Region: Public Health in the Americas Initiative

Key points

- A high-profile, region-wide experience in EPHFs in 2001–2002 extended understanding of EPHFs, but the accompanying political visibility and implicit comparative approach between countries may have undermined the rigor and uptake of the assessment process.
- Following the regional initiatives, EPHFs have continued to develop at a local/national level, with numerous adaptations to address context-specific concerns.
- PAHO is currently exploring ways to engage Member States in a regional effort based on EPHFs, framing it within the larger context of a regional strategy for universal health and supporting national derivatives of the regional/global EPHF agenda.

PAHO, working in conjunction with the CDC, the Centro Latinoamericano de Investigación en Sistemas de Salud and national institutions, launched the Public Health in the Americas Initiative in 2001. Over the next two years, EPHF assessments were carried out in 41 countries in the region, using a detailed, standardized tool, which covered horizontal functions from a systems

perspective (5). The EPHFs were conceived as activities necessary to improve the health and well-being of the population. The instrument developed aimed to assess the capacity of the national health authority to implement these essential public health actions. According to a key informant in PAHO, one limitation of this approach was that it was a list rather than a conceptual framework. Each EPHF had about five main indicators, with 15–20 subindicators for each measure, all scored on a scale of 0 to 1 based on the indicator's similarities to a "model standard" which described the ideal characteristics of the function. Countries were actively encouraged to use the results of these assessments as a basis for public health reforms at the national level, although this only occurred in some countries. The underlying idea was to strengthen the governance/stewardship of the health systems, with a broad vision of personal and population services.

After George Alleyne, the Director of PAHO during the Public Health in the Americas Initiative, stepped down in 2003, PAHO's commitment to the EPHF approach waned (21). The Organization pursued other strategies and priorities that frequently drew on the EPHF work, such as methodological guidelines for assessing the performance of the steering role of the national health authority (22), or strategic initiatives to strengthen the public health workforce (23), but these generally focused on single functions. Thus, the concerted, pan-American effort that PAHO led in 2001–2002 to build EPHFs across all functions gave way to national initiatives to adapt the EPHFs to country contexts and health authority arrangements. Most notably, Argentina began long-term work with the World Bank to strengthen the EPHFs (see the World Bank subsection), and Brazil adapted the PAHO tool to its decentralized health system, redefining the 11 functions and implementing assessment programmes in several states (24). Colombia, Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Honduras, Panama, Peru, and the states of the Eastern Caribbean Region all continued work on the EPHFs as well (5).

Fifteen years after the conclusion of the Public Health in the Americas Initiative, the EPHFs were used by PAHO and others as a framework for understanding the organization of public health services and capacities in the region, particularly with regard to education (25,26) and to a lesser extent to practice (27). Now that a new strategy on universal health (which encompasses health care access [e.g. geographical, economic, sociocultural factors] and coverage [i.e. organization and financing]) is being fostered in the region, the EPHF approach is being reviewed and renewed for that agenda, and a new list of functions is currently circulating among national partners for consultation. PAHO is also looking for ways to revise its approach to country work to avoid score-based evaluations—which are prone to reporting bias—in favour of indicators that identify future lines of work that are amenable to collaboration between Member States and PAHO, in order to close gaps in capacity rather than simply to identify strengths and weaknesses. PAHO's intention is to create a list of EPHFs that countries can use according to their specific needs, and to provide them with tools to diagnose problems and develop plans to tackle them.

Western Pacific Region

Key points

- Three case studies were undertaken in Fiji, Malaysia and Vietnam in 2003 primarily as an academic exercise to explore the operationalization of EPHFs in the region; none of the case studies was formally linked to a public health reform process.
- The publication of the report on these case studies coincided with the SARS outbreak, which disrupted further research and hindered the impact of the report.
- WPRO may in future relaunch its efforts in EPHFs within the framework of universal health coverage, which is seen as the force binding all health services together, whether individual or population-based.

Around the same time as the Public Health in the Americas Initiative, WPRO also launched an exploratory study to determine how the EPHFs could be operationalized in the region (6). Case studies were undertaken in Fiji, Malaysia and Vietnam, each run by separate country teams that developed their own methodology in cooperation with national health authorities. However, these assessments were largely perceived as academic and lacked linkages to specific policy reform programmes, which probably undermined the uptake of their findings. (Indeed, the findings were never formally integrated into national policy in any of the three countries.) Moreover, publication of the report coincided with the SARS outbreak in 2003, and response to this became the immediate priority of the region, to the detriment of other programmes, including the EPHFs. Thus, while there is at least a historical basis and some collective experience about the EPHFs, no concrete policy changes attributable to the 2003 study were identified.

Today, WPRO is applying some of the underlying ideas of the EPHFs to challenges in Member States of the region. For example, the Regional Office is supporting China to develop the framework of a national health law, and in the Philippines they are undertaking a decentralization process and the need to allocate functions at different levels. However, the EPHFs are not currently used as a framework approach in the region. While WPRO is open to developing and/or adapting its list, the EPHFs are seen to be conceptually placed within the goal of universal health coverage. Indeed, universal health coverage is seen as the cohesive force that brings the different components of health policy together within a wide spectrum that also includes implementation of the IHR and provision of population-based public health services.

Eastern Mediterranean Region

Key points

- The Eastern Mediterranean Region launched its own regional initiative on EPHFs in 2013; pilot assessments in Qatar and Morocco have informed revisions.
- The final version, which fully incorporates other WHO programmes (e.g. IHR, SDGs), is now publicly available.
- Located within the office of the Regional Director, the current EPHF programme is awaiting the strategic direction of the new Regional Director.

In 2013, EMRO commissioned the development of its own list of EPHFs to form the basis of a joint assessment tool between national health authorities and the Regional Office. The EPHF list of the Eastern Mediterranean Region was developed with the participation of the team that revised the European Region tool and there are clear overlaps with this tool (four-level structure with criteria based on existing assessment tools and guidance from WHO and others).

At the same time, the Eastern Mediterranean Region has made a number of adaptations to suit its regional context. First, the assessment tool has been reduced both in length and detail, and it includes a glossary of terms to ensure region-wide harmonization of key public health concepts. It has fully incorporated complementary programmes, including the IHR and its joint external evaluations. There are also clear links with the SDGs and universal health coverage. Unlike the European Region approach, the Eastern Mediterranean Region retains a stronger role for the Regional Office, which shares responsibility for implementing joint assessments (as opposed to self-assessments driven by Member States). Based on feedback after pilot assessments in Qatar and Morocco, the tool was modified (28) and was published on the EMRO website in early 2017.⁴

The future direction of the current EPHF programme (as with all regional initiatives) will depend on the strategic priorities set by the new Regional Director, to be elected in May 2018, following the untimely death in October 2017 of Dr Mahmoud M. Fikri who took office as Regional Director in February 2017.

⁴ http://applications.emro.who.int/dsaf/EMROPub_2017_EN_19354.pdf?ua=1

Major EPHF frameworks outside of WHO

Three major EPHF (or similar) approaches from other actors of international significance were found from: CDC and the CDC Center for Global Health; the World Bank; and an independent report commissioned by the European Commission.

Centers for Disease Control and Prevention and CDC Center for Global Health

Key points

- The United States-based programme for essential public health services (EPHS) has been successfully established as a technical framework for assessing and improving state and county-level public health services.
- Keys to success have been its integration with a range of political, technical and educational bodies, and the leadership of CDC.
- More recently, the CDC Center for Global Health has begun collaborating with low- and middle-income countries to help them build capacity using the EPHS approach; this area of work has excellent potential for collaboration with other global health bodies, particularly WHO.

Of the EPHF initiatives outside WHO, by far the most consolidated and far-reaching is the CDC essential public health services (EPHS); this predates the first WHO Delphi study on EPHFs by four years (3). The approach used by CDC differs from the first WHO EPHFs: the CDC EPHS aimed to build and improve the capacity of existing services within the United States, while the WHO EPHFs aimed to help establish public health priorities and fill gaps for developing countries. The EPHS list is accompanied by many assessment, implementation and monitoring tools, including, most notably, the National Public Health Performance Standards Program (29), which runs state and county-level assessments across the country, and the Mobilizing for Action through Planning and Partnerships programme, which guides communities through the prioritization and planning process for improving public health services (30). Since 2002, well over 1 500 assessments under the National Public Health Performance Standards Program have taken place at state and local levels, and overall, the EPHS concepts and tools are well embedded in the larger health system. While the EPHS approach is strongly rooted in a United States context, it has been adapted to other countries, such as Israel (31).

Much more recently, the CDC Center for Global Health has begun work developing EPHFs to assist low- and middle-income countries in building national public health institutions, often from the ground up. The Center for Global Health is currently developing a more comprehensive tool, the Functions, Operations and Services (FOS) Navigator, as an interactive *PowerPoint* presentation to serve as a discussion guide with nascent public health actors in low- and middle-income countries. This will be complemented by a staged development tool to assist in planning and prioritization (32).

Key points

- Two long-standing World Bank programmes based on the EPHF approach operate in Argentina and Karnataka (India).
- Both have achieved broad improvements in health indicators.
- These long-term experiences and the consequent country-based expertise could help to inform other initiatives in South America, the Indian subcontinent and elsewhere.

In searching the World Bank website, two long-standing projects led by the Bank were identified that are based on the EPHF approach, one in India (specifically Karnataka) (33) and the other in Argentina (34). Both of these projects began in the mid-2000s, as the respective WHO regional initiatives in the Western Pacific and the Americas were coming to a close.

In Argentina, the EPHF approach has been used since 2007 in two consecutive projects carried out through a cooperation between the World Bank and the Ministry of Health of Argentina. The FESP I (from the Spanish Funciones Esenciales de Salud Pública) focused on public goods—particularly control of infectious diseases. The project strengthened the organization of the Ministry of Health through the creation of directorates of chronic noncommunicable diseases and vector-borne diseases at the national level, and health promotion units at the provincial level. Implementation capacity of the national health promotion plan was also enhanced and an output-based financing mechanism for public health, based on achievement by the provinces of agreed results and targets linked to the delivery of certain public health interventions and activities. The follow-up FESP II aimed to strengthen the management and epidemiological surveillance of key programmes on chronic diseases, reinforce the stewardship role of the Ministry of Health, promote healthy behaviours and preventive measures for selected chronic diseases, improve the management of health coverage of disadvantaged populations, and ensure coordination of the federal and provincial levels (35).

In India, the World Bank worked with the Ministry of Health and Social Welfare to assess EPHFs at national, state and district levels, based on a survey adapted from CDC's National Public Health Performance Standards Program and the PAHO tool. Questionnaires were self-administered and completed individually to ensure anonymity. Following publication of the report in 2004 (36), there have been few encouraging initiatives in public health at the national level, and much work is still to be done. However, in Karnataka, the district government partnered with the World Bank to build on the EPHF initiative through the Karnataka Health System Development and Reform Project (33). This programme has been operating since 2006 (projected to expire in March 2017). The two main project components are strengthening existing health services (e.g. immunization, birth attendance) and innovations in service delivery and health financing; a third component deals with project management and monitoring. Overall, the project has been quite successful and is on track to reach all targets by the completion date.

European Commission

Key points

- The project led by the European Commission to assess public health capacities in 25 European Union Member States introduced new methodologies for assessment, including questionnaires for national health authorities and audits of health system data.
- Despite the high profile of the study, its findings have had little tangible effect, perhaps because the Commission lacks a strong political mandate to implement nationally based or EU-wide reforms in public health.

In Europe, the strong advocacy for public health from EURO has been echoed by the European Commission, which in 2009 launched a study to review public health capacity in 25 European Union Member States (37,38). Six horizontal capacity domains were developed, and a questionnaire was devised for completion by national authorities. This approach was complemented by specific case studies and evaluation of routinely collected health systems data.

While the final 2014 report was rigorous and included a number of specific recommendations on building public health capacity in Member States, the application of the recommendations is so far unclear. In part, this may be because of the absence of some of the conditions which were considered crucial for success in other EPHF initiatives, namely ownership of the process by the country in question and integration within a specific reform process.

Country-level frameworks

Key points

- Country-level frameworks are characterized by their heterogeneity and specificity to local concerns.
- Some country-level lists contain mostly horizontal functions, while other frameworks take a service-based (vertical) approach.
- The most successful projects have had the close involvement of policy-makers who helped to develop the lists and establish priority areas for action.

In addition to the EPHF-strengthening exercises described above, there have been a number of initiatives in individual countries, undertaken both with and without sponsorship from global health actors.

Country-specific formulations nearly always have their own particular features. Brazil tailored the list developed by PAHO (3) for the purpose of improving the operation of its decentralized health system. In Australia, the National Public Health Partnership developed a list of EPHFs that included a specific function for improving the health status of Aboriginal and Torres Strait Islanders (39), while New Zealand streamlined their list of essential functions to just five (40). The obligatory public health functions of Indonesia (41) also have a markedly national interpretation of priorities, with functions dedicated to narcotic and substance abuse as well as community nutrition—which are not featured in other lists. In China, the government has periodically revised its own list of essential public health services since at least 2009, and has a national objective of

extending access to these services to the entire Chinese population (42). In Europe, the United Kingdom was the first—in 2001—to introduce a specific function on enhancing intersectoral cooperation (43). Israel specifically recognized the importance of leadership, which is the first function on its list (31). British Columbia takes a wholly different approach, intermingling four different categories, each with its own set of functions set out in a matrix (44).

Most recently, global health consultants from CDC Global Health and Johns Hopkins University have collaborated with public health authorities in Botswana and Mozambique, tailoring the EPHFs and the assessment tools to local priorities and methodological preferences (45). Their approach has more in common with the WHO mission of assuring a minimum level of capacities and services than with the approach used by CDC in the United States context, which is to build and improve the capacity of existing services. At the same time, the list of EPHFs drawn up with these two African countries emphasizes access to and quality of health services (with two functions dedicated to that purpose, numbers 7 and 9; see Annex 2, Table A2.2) in a way that the tool developed by EURO, for example, largely takes for granted.

In general, the likelihood that these initiatives have resulted in tangible public health reforms has largely depended on the priority assigned to them and the ownership felt by the health authorities, which underlines the crucial role of national governance in bringing about policy changes. In Sri Lanka (46) and in Western Australia (47), for instance, studies supported by rigorous methodology and robust assessment results had no apparent effect on policy, probably because they were not led by the relevant health authorities. Case studies from Europe also support this finding, showing that the essential public health operations approach to assessment and policy prioritization functioned best where ministries of health were empowered to pursue major policy agendas, and where national counterparts felt a strong sense of ownership of the process (19). This point was also highlighted by the experience of CDC Global Health in Africa; they reported that the experience of setting one's own priorities for public health activity helped to engage participants' intrinsic motivation for self-improvement (45).

Lessons in applying EPHFs at country and regional levels

The experiences with EPHFs under the leadership of WHO, the CDC, World Bank and others, provide a number of key lessons that countries and regions should keep in mind in order to make the most of EPHF assessments and related policy reforms.

Local ownership

The involvement of and ownership by national leaders and other stakeholders is a key ingredient to success. Political leadership from decision-makers in office is important to bring about specific changes, while engagement with career civil servants, academic partners, nongovernmental organizations and others can help to integrate the EPHFs into the policy-making process in the long term.

At the same time, close involvement of local leaders ensures that their priorities are reflected in the final lists. Some external guidance (e.g. from WHO) may be necessary so that decision-makers take into account international evidence of issues related to public health and health systems strengthening, but this evidence should in turn be applied to solve local problems, with adaptations as needed.

Links to planning and policy

It is essential to tie assessments to explicit priority-setting processes and policy reforms at the outset in order to maximize application of the findings. While there was evidence that some assessments led to limited policy reforms at a subsequent date, only assessments that took place to support planning processes resulted in full use of the findings.

Long-term commitment

Some of the most successful examples of EPHF projects, including in the former Yugoslav Republic of Macedonia, Brazil, Karnataka, India, and the United States, have come about because of a long-term commitment to understanding public health services from the perspective of the EPHFs. This has led to iterative adaptations to fit local needs, full integration with technical and educational bodies, and non-partisan political support.

Technical expertise

Technical support in undertaking assessments and guiding subsequent priority-setting processes is very much needed, particularly in smaller countries with fewer human and financial resources. While consultants based in WHO regional offices may contribute, the biggest roles should be reserved for nationally based experts, whether these are in WHO country offices or serve in national schools of public health, universities, nongovernmental organizations or other local organizations.

4. Content analysis of existing frameworks of essential public health functions

Key points

- The clearest overlapping competencies in different EPHF frameworks have to do with surveillance, governance/financing, health promotion, health protection/legislation, research and human resources.
- Regional frameworks take more heterogeneous approaches to disease prevention, health care, emergency preparedness, social participation and communication.
- The clearest difference in how regions define public health has to do with where health care services are placed within the public health remit, with no obvious path to conceptual reconciliation.

The existing frameworks, summarized in Annex 2, have a number of common elements as well as important differences that reflect regional thinking and priorities. This section describes the main functions covered by the different frameworks and the similarities and differences between the approaches taken worldwide. The content of the EPHF frameworks is divided into two categories: cross-cutting (horizontal) functions, based roughly on the building blocks approach to health systems; and service-based (vertical) functions comprising the traditional public health services provided by modern health systems.

A glossary of terms is also included in section 9 that can serve as a guide for future discussions about these issues to ensure that all stakeholders have the same understanding of the concepts.

Horizontal functions

Governance

While it is possible to identify some specific areas that are covered by all or most of the WHO and other global EPHF frameworks, there are notable differences in how these are organized and articulated in the different lists. The earlier WHO frameworks—developed in EURO (1998), PAHO and WPRO—typically dedicated three functions to governance-related activities: one for public health management, policy and planning; one for quality assurance in health services; and one for regulation and enforcement. This approach is also evident in the core public health functions of Australia, the UK National Health Services framework, the CDC essential public health services framework, and most of the country-level frameworks derived from any of the above (Botswana, Brazil, India, Israel and Mozambique).

On the other hand, the two most recent WHO frameworks—developed in EURO and EMRO—put these functions under one or two headings. The Eastern Mediterranean Region list has a single function that brings together policy-making, management, institutional collaboration, legislation and financing. The European Region list has one function for governance, including a specific subfunction dedicated to capacity for regulation and enforcement, another dedicated to policy and planning, and another for monitoring and evaluation of programme implementation. Moreover, the European Region list has another function for sustainable organizational structures and financing.

Of note, several frameworks include the concept of “international collaboration”—including donor support—under this function or group of functions. Other capacities include leadership

development, intersectoral cooperation, institutional support, and coordination of regionalization and decentralization processes.

Financing

Financing is dealt with differently in the various WHO frameworks as well as in the other frameworks developed around the world, which is perhaps a reflection of the wide variety of models that exist for health system funding. Interestingly, only the lists of the European and Eastern Mediterranean regions explicitly recognize financing arrangements as a top-tier function (i.e. as part of the EPHF description), although others do make reference to financing: in the European Region framework, the financing operation also covers the establishment of sustainable organizational structures, while the Eastern Mediterranean Region framework includes financing under the same function as governance and institutional support. Similarly, the Americas Region includes financing arrangements under the function that deals with institutional capacity and policy-making. On the other hand, the Western Pacific Region list does not explicitly mention financing at all.

Human resources

The development and management of human resources are also among the core functions in the regional and national EPHF lists, with considerable agreement between lists as to the exact capacities and activities that belong under this function: human resources planning, management, training and development, with considerations for recruitment and retention; educational and licensing features; leadership; and performance evaluation. Thus, human resources is one of the horizontal areas where the most consensus exists among the EPHFs on how it should be articulated.

Health information systems

All EPHF frameworks at a supranational level (along with most developed at the country level) include population health surveillance and monitoring as the first or second function. Some lists distinguish between health situation analysis and disease surveillance (Americas and Western Pacific regions), while others separate routine surveillance activities and specific analyses made in preparation for health emergencies (European and Eastern Mediterranean regions). In any case, the differences are relatively minor, with broad agreement about the basic portfolio of activities within health information systems: civil registration and vital statistics systems, disease registries, health-related surveys, disease-specific surveillance programmes, monitoring of health system workforce and performance, risk assessment, and data reporting and analysis.

Research

All of the WHO frameworks and most of the other major lists have a specific function for public health research; this is usually placed near the end of the list, indicating its role in underpinning both the horizontal and vertical EPHFs. Specific research subfunctions in the lists include: development of a national public health research agenda; generation and allocation of resources for research purposes; ethical safeguards; integration of research activities into public health; capacity-building for innovation; and dissemination and knowledge-brokering to translate research findings into policy and practice.

Social participation and health communication

Social participation, community engagement and/or health communication are explicitly included in most of the main frameworks (WHO frameworks, CDC, World Bank) and their country-level derivatives, although – as with the rest of the horizontal functions – this aspect is not well covered in most of the frameworks developed at a country or subcountry level (British Columbia, China, Indonesia, New Zealand). The American iterations (CDC, PAHO) and the country frameworks based on these models (Brazil, Botswana and Mozambique) include a unique function on the concept of social participation or community partnerships. However, starting with the model developed in WPRO, this element has come under the health promotion function. The tools developed in EURO and EMRO are consistent with the WPRO approach, but they include a new function focusing specifically on public health communication. This change reflects the arrival of new communication technologies and social media platforms for health, as well as the continuing goal to design public health services around people's needs.

Vertical functions

In addition to the cross-cutting themes described above, the existing frameworks also attempt to articulate functions around vertical (health-topic specific) services. A clear distinction can be drawn between how horizontal and vertical functions are conceived in the regions. Differences in horizontal functions between regions and regional frameworks are mostly a matter of placement—i.e. health information systems are recognized as an important function of public health whether they are described under one, two, or more functions. However, the definition of vertical functions indicates how public health is understood in the regions, and in that sense there are important differences that will not be easy to overcome.

This subsection discusses some of the approaches taken worldwide, which illustrate the main perspectives on defining public health competencies.

Health protection

Health protection is well represented in all of the EPHF lists, in as much as it is understood as a function having to do with regulations and legal protections (for workers, patients, consumers, the environment, etc.). Some of the lists use terminology that suggests governance functions (see description earlier); for example, in the lists developed in PAHO and WPRO, the functions for health protection focus on capacity-building for regulation and enforcement, with numerous subfunctions related to capacity for reviewing, enforcing, and developing legislation. This strategy is also apparent in the CDC, World Bank and other lists.

On the other hand, the lists of the European and Eastern Mediterranean regions include one or two subfunctions covering the ministry of health's capacity to develop, enact and enforce legislation in general. At the same time, they have a more detailed function on health protection that covers different vertical areas of action (e.g. environment, occupational health, patient safety, consumer safety and traffic safety) and refer to the strength of the legislative framework and enforcement capacity for each based on evidence-based guidelines.

Health promotion

As with health protection, health promotion is a recognized pillar of public health in all of the lists, whether it stands alone (as in the lists developed in PAHO and EURO) or whether it is paired

with another concept or group of services. The Eastern Mediterranean Region list joins health promotion with disease prevention, while the list of the Western Pacific Region combines it with social participation. A number of themes run through the health promotion function in all of the lists: community and social participation, intersectoral collaboration, measures to address behavioural risk factors (tobacco, alcohol, diet and physical activity) and the social determinants of health, and health education.

Disease prevention

Interestingly, disease prevention is not explicitly covered as such in the lists developed in PAHO and WPRO, while it is a prominent function in the lists developed in EURO and EMRO. The reason for the difference may be in the scope afforded to health care services within the public health remit in these regions, or perhaps it lies in the overall approach to the framework. The Americas Region, for example, sees the EPHFs more as capacities (monitoring and evaluation, research, etc.) and institutional arrangements (health financing, human resources, medicines and technologies, etc.) than services. These functions facilitate the transformation of health care delivery into a people- and community-centred model of care. Thus, the overall emphasis on specific services is reduced and more importance is given to the enablers of these services. In the Western Pacific Region, public health falls under the umbrella of universal health coverage, while in Europe, for example, the opposite is clearly the case. Thus, the European Region (and Eastern Mediterranean Region) defines specific population-based services that are provided within the health care system, mostly in the areas of primary and secondary prevention programmes targeting communicable diseases. Access to these services is mostly taken for granted, although the evaluation tools do include specific questions concerning this.

In contrast, the frameworks developed in PAHO and WPRO include a number of services related to communicable disease control under the same function as surveillance. The subfunctions do not specifically mention personal health services provided within population-based programmes (e.g. for immunization or screening). However, these lists place greater emphasis on access to health care in general.

Health care

The inclusion (or not) of health care stands out as one of the main differences in the approaches to public health in WHO regions and in other countries. At one end of the spectrum, the European Region emphatically excludes most health care services from the public health remit, in order to have specific policy space for population-based services, which are typically underfunded and have low visibility. This approach makes sense given the historical foundations of European health systems and their strong roots in the principles of universal access. The list of EPHFs developed in EMRO shows a similar approach to the question of how health care relates to public health, although the concept of universal health coverage is more specifically tackled.

At the other end of the spectrum, the Americas and Western Pacific regions see universal coverage as the central principle of public health, or as the former Director-General Margaret Chan called it, “the single most powerful concept that public health has to offer” (48). The existing lists reflect this priority to some extent, with specific functions for quality assurance and access, but the interviews held with regional counterparts highlight regional commitments to the universal health coverage agenda, suggesting that universal health coverage is a defining feature

of public health in these regions and will feature prominently in any future iterations of the EPHFs.

Preparedness for public health emergencies

Public health emergencies can be narrowly defined as those related to a single disease, for example an infectious disease outbreak like the Ebola virus or Zika virus. By definition, outbreaks have great potential to cross borders, making them a key target for international collaboration to achieve global health security (i.e. the IHR). The two earlier WHO versions of the EPHFs (developed in PAHO and WPRO) explicitly cover aspects of emergency preparedness in line with this definition, with subfunctions dealing with investigation of outbreaks, rapid response and laboratory infrastructure. However, it is important to note that these frameworks were published several years before the adoption of the IHR, and they also predate the “all-hazard/whole health” approach (49) to public health emergencies. Thus, the frameworks developed in PAHO and WPRO, as related to emergency preparedness, must be considered precursors of the current approaches.

Today, public health emergencies are seen to encompass any sudden, large-scale, negative impact on public health arising from outbreaks, natural disasters, severe weather events, migratory flows, accidents, terrorism, or other environmental or human causes. While the national health authority does not necessarily take the lead role in managing these emergencies, there are important competencies needed within the national health authority for risk assessment and coordinated response. In the frameworks of the European and Eastern Mediterranean regions, these areas are well defined, as are specific areas related to IHR implementation. Other lists also reflect the paradigm shift, showing a general trend to more public health involvement in disaster preparedness and response, depending on the year of publication.

Other vertical functions

It is worth noting that a wide variety of specific vertical functions are given importance in different country lists. In part, this reflects an overall approach to developing frameworks that list essential *services* rather than broader functions per se. At the same time, the vertical functions chosen reflect national priorities: China includes a function on managing traditional Chinese medicine, Indonesia on preventing and managing narcotics and substance abuse, and Australia on improving the health of Aboriginal and Torres Strait Islanders. These approaches represent an adaptation of the EPHF concept for national purposes and priorities, highlighting the applicability of the approach in different settings.

5. Developing conceptual clarity on essential public health functions in WHO

Key points

- Pursuing a global meta-framework of EPHFs has some potential advantages, including raising visibility and political support for public health investments and reform.
- There are also risks: it may not be possible to reconcile regional differences about the public health remit, and a global list may also undermine the potential to engage local leaders and decision-makers.
- The Charter of the World Federation of Public Health Associations does not currently have the support of WHO regions because of perceived shortcomings of the framework and perhaps the lack of consultation during its development.

The development or adoption of a unified list of WHO-wide EPHFs has clear advantages. It offers the opportunity to reach a global consensus that defines public health once and for all, and to catalyse the high-level visibility and support needed for meaningful public health investments that ensure global health security, universal health coverage and greater health equity worldwide. Specifically, it should be able to better embed the IHR requirements and basic conditions of universal health coverage in the EPHFs.

At the same time, there is a certain tension between pursuing this kind of global public health strategy and stimulating the national leadership and ownership of the programmes needed to achieve context-specific objectives. Moreover, there are important differences in how regions and countries understand public health; these respond to regional/local needs and structures and trying to reconcile all of them is risky, at best. Indeed, there is considerable potential to expend time and energy debating the semantics of public health rather than pursuing the objectives around which there is much agreement.

This section explores both these perspectives as well as the conceptual and operational suitability of the WHPHA's Global Charter for the Public's Health (50) and the related implementation tool, the system framework for healthy policy (10), to serve as the uniting framework for EPHFs.

Charter of the World Federation of Public Health Associations

The Global Charter for the Public's Health and the System Framework for Healthy Policy arose as a direct result of the WHO Director-General's request to the WFPHA to work on developing a global response to today's public health challenges. One component of this response was to address the problem of defining public health, in view of the lack of global consensus on exactly what activities fall under its remit.

During 2014–2015, the WFPHA carried out a review of existing frameworks, developed an initial list and gathered feedback from the health systems cluster at WHO headquarters in Geneva as well as from professionals from other major global health actors (CDC, the World Bank, the International Association of Public Health Institutes, the Department for International Development [DFID], the Faculty of Public Health [UK], Public Health England, the Department of

Health [UK], the Public Health Association of Australia, the American Public Health Association and the European Association of Public Health Associations).

The final list was published in 2016 (10). The components are shown in Table 1 and Fig. 3.

Table 1. A systems framework for healthy policy: World Federation of Public Health Associations (10)

1	Governance: public health legislation; policy; strategy; financing; organisation; quality assurance; transparency, accountability and audit
2	Knowledge: surveillance, monitoring and evaluation; research and evidence; risk and innovation; dissemination and uptake
3	Protection: international health regulation (IHR) and co-ordination; communicable disease control; emergency preparedness; environmental health; climate change and sustainability
4	Promotion: inequalities; environmental determinants; social and economic determinants; resilience; behaviour and health literacy; life course; healthy settings
5	Prevention: primary prevention: vaccination; secondary prevention: screening; tertiary prevention: rehabilitation, healthcare management and planning
6	People-centred care: primary healthcare; secondary healthcare; tertiary healthcare; rehabilitation
7	Advocacy: leadership and ethics; community engagement and empowerment; communications; sustainable development
8	Capacity: workforce development for public health workers, health workers and wider workforce; workforce planning: numbers, resources and infrastructure; standards, curriculum and accreditation; capabilities, teaching and training

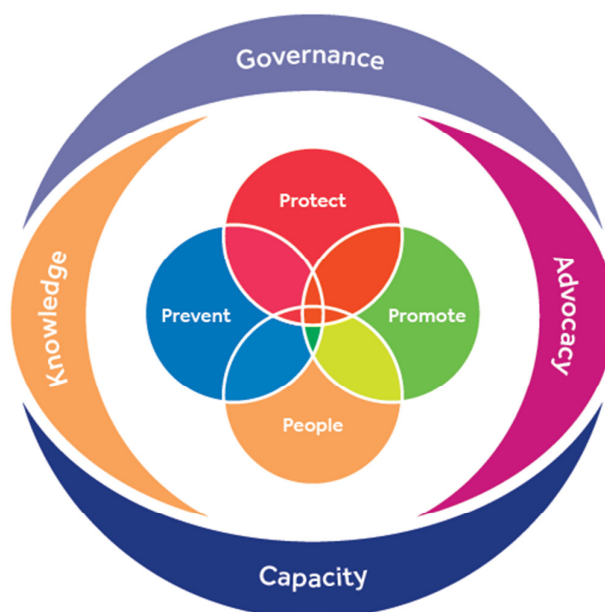


Fig. 3. A systems framework for healthy policy: © Commonwealth Secretariat (10)

Compatibility of the WFPHA framework with other WHO lists: regional feedback

During the development of the present report, feedback on the WFPHA framework was sought from WHO regional offices and other global health actors. Oral discussions took place with WHO regional offices (PAHO, WPRO, SEARO, EMRO) and CDC Global Health, and written input was received from EURO.

While all respondents appreciated receiving the materials provided and were open to the idea of exploring global collaborations on the EPHFs, the WFPHA framework did not elicit great enthusiasm from regional counterparts. In part, this may be because of a general lack of understanding of the scope of the framework—whether it encompasses health systems, public health, health care systems or some combination of the above.

Differing opinions between respondents arose about the role of health care within the framework, with European respondents understanding that the inclusion of curative services within the framework signalled that it was more a “health systems” framework, i.e. encompassing two parallel streams of work on both universal health coverage and public health. Likewise, CDC Global Health perceived an over-emphasis on health care delivery, at least for the purposes they are pursuing in country work. On the other hand, the respondent from WPRO supported the placement of the EPHFs on a spectrum of services whose ultimate goal and overarching principle is universal health coverage. PAHO is also seeking to position the EPHFs within universal health coverage.

Specific aspects of the WFPHA framework also attracted some criticism. For example, two respondents questioned why, in the visual presentation of the framework, “people” was not in the centre of the figure (i.e. the central component running through prevention, protection and promotion; see Fig. 3), but was rather an independent element that specifically had to do with health care. In fact, the term “care” would have been more appropriate (if less alliterative) than “people” to capture the intended meaning and complement the other functions in the cluster (protect, prevent and promote). One respondent also pointed out a lack of coherence in the framework overall, particularly in terms of the classification used for the specific items. For example, the lack of clarity about whether the list details functions or services was brought up, while others noted that some of the primary elements in the framework were neither functions nor services (e.g. knowledge, capacity).

None of the respondents believed that the list, in its current form, was adequate for their region’s or organization’s needs. On the other hand, most were open to a potential global framework or list of meta-functions, as long as this could be adapted at a regional and/or country level. The respondent from EMRO suggested that any attempt to produce a harmonized list of EPHFs should take as a starting point the functions that already have agreement in the regions.

Harmony between WFPHA and WHO approaches: analysis

The research suggests that there are both semantic and substantive differences in regional lists, often because of context-specific realities that cannot be easily reconciled. The respondent from SEARO, a region that has never developed an EPHF framework, questioned – not unreasonably – whether the development of a global framework would actually translate to any tangible progress in improving public health. On this question, in the research for this report, the evidence for implementing the EPHFs suggests that the process may be just as important as the product.

That is, EPHFs may be understood above all as a *method* to achieve public health goals rather than just a framework of analysis. The first step in this process would be to define the forms of the list among different stakeholders (whether at the local, national, regional or global level) according to their priorities. This consultation period is usually followed by an assessment and a policy dialogue to develop a strategy for action. However, bringing the principal stakeholders to the table in order to establish criteria (i.e. the EPHF list) for local- or country-based assessment helps to instil a sense of ownership among decision-makers; therefore outsourcing the process to an external body is not necessarily advisable.

In view of this, and irrespective of the merits of the WFPHA framework, it has an important process-based weakness in that none of the professionals working in WHO to develop the EPHFs were familiar with it.

With regard to content, there are also considerable discrepancies between the WHO and WFPHA frameworks. For example, the WHO lists explicitly highlight the importance of both surveillance and research, but these are merged – and arguably diluted – in the WFPHA framework under the knowledge function. Likewise, capacity in the WFPHA framework includes human resources development and organizational/institutional capacity, both of which generally have a function of their own in the WHO frameworks. As discussed earlier, the inclusion of health care as a separate public health function is also controversial at a global level.

Other differences have more to do with placement in one area or another. For example, the WFPHA governance function includes public health legislation, as in the earlier lists from the American and Western Pacific regions. However, the European and Eastern Mediterranean regions both see the public health regulatory framework as part of the protection function. Likewise, the WFPHA advocacy function includes public health leadership, which WHO lists typically include under governance functions.

Based on feedback from key informants and our own content analysis of the various lists around the world, the WFPHA framework, as currently formulated, will not attract sufficient global support to serve as a WHO-wide framework for understanding public health. On the other hand, it could serve as one source of input in developing a joint list of meta-functions that all regions can agree on, should the WHO governing bodies decide to pursue this agenda.

6. Cross-cutting WHO work – links to other programmes

Key points

- The SDGs are a global call to action to tackle fundamental social and economic development conditions, including health. They are a cornerstone of the vision of intersectorality and health in all policies.
- The SDG agenda implies proper assessment and action at the country level to advance universal health coverage and improve health security including adopting an intersectoral approach. The current EPHF frameworks can and should be adapted to these challenges.
- The IHR are at the heart of the global health security agenda, and aim to prevent, protect against, control and provide a response to public health threats. This is done through improved surveillance, reporting and international cooperation, and the EPHFs may offer the most useful frameworks to articulate the assessment and guidance for action in the field.
- Noncommunicable diseases represent a key challenge for public health in the world. Certain exposures such as tobacco, alcohol, physical inactivity and unhealthy diet are major risk factors where interventions can be effectively focused. EPHF frameworks have been useful in delivering programmes tailored to the prevention and control of noncommunicable diseases.
- Other WHO initiatives are clearly related to the EPHFs. An effort should be made to check any agreed framework proposal with the established programme within WHO.

Sustainable Development Goals

In public health, prerequisites for health have been well characterized at least since the Ottawa Charter in 1986 (51). The fundamental conditions and resources for health are a matter of wide consensus: peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice, and equity. In fact, improvement in health requires a secure foundation in these basic prerequisites.

The SDGs are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. The current Agenda 2030 for Sustainable Development⁵ adopted by the United Nations General Assembly has 17 objectives and 169 targets for eradicating poverty, reducing inequity and fighting climate change over the next 15 years. It is an ambitious agenda for the global community and is very much in line with the public health mission and responsibilities.

Unlike the previous Millennium Development Goals, none of the SDGs mentions a specific medical condition, and only one (SDG 3) is explicitly focused on health. However, together, they provide a broad framework for addressing public health problems more holistically, recognizing the evidence that we cannot separate ill health from climate change, adequate housing, gender issues and economic hardship. Even peace, whose absence has driven millions to abandon their homes in the past several years, falls within the SDGs as a way to improve population health. From this perspective, the SDGs can be considered a cornerstone of the vision of intersectoral action and health in all policies. In fact, the SDGs constitute an agenda for public health—to

⁵ http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E

create the conditions in which people can achieve and maintain their health. This supports the dimensions related to intersectoral collaboration, health in all policies and the whole-of-government/whole-of-society approaches. The current EPHF frameworks can and should be adapted to these challenges.

Specifically, and aligning the priorities for action to the explicit targets of the SDGs, the public health vision promoted by the EPHF approach actually articulates the assessment and recommendation of measures aimed to: reduce the maternal mortality ratio and neonatal mortality; combat AIDS, tuberculosis, malaria and neglected tropical diseases; combat hepatitis, waterborne diseases and other communicable diseases; reduce NCDs and promote mental health and well-being; strengthen the prevention and treatment of substance abuse; prevent injuries from road traffic crashes; ensure universal access to sexual and reproductive health care services; promote the conditions to achieve universal health coverage; reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination; ensure the implementation of the Framework Convention on Tobacco Control; support the research and development of vaccines and medicines for the communicable and noncommunicable diseases that primarily affect developing countries; promote a well prepared health workforce; and strengthen the capacity for early warning, risk reduction and management of national and global health risks. The specific items set forth as related public health functions or operations are also in line with WHO programmes. In fact, the SDG health-related targets closely reflect the main priorities in WHO's programme of work for 2014–2019 (52). The WHO stated that “many of these targets have already been agreed by Member States in the World Health Assembly. For example, the global voluntary targets for the prevention and control of NCDs set in 2013 are closely linked to SDG Target 3.4, to reduce premature NCD mortality by one third by 2030. The WHO governing bodies will have a critical role in follow-up and review of implementation of the health-related SDGs ⁶.

In a nutshell, any of the EPHF work that requires assessment and action at the country level to advance universal health coverage and improve health security, including adopting an intersectoral approach, takes place within the SDG agenda.

International Health Regulations (2005)

If we talk about what concerns normal people about public health, we will see that there is a widespread preoccupation with different hazards and threats, and in particular with emerging or re-emerging infectious diseases that threaten to break out of established patterns of prevalence or virulence into new areas and new victims. Such episodes are described as outbreaks, epidemics or pandemics depending on their severity, temporal or geographic reach, or their ability to capture our attention (or frighten us).

In the face of these threats, a health protection response from the public health authorities is expected. Regardless of the different definitions, health protection is one dimension of public health that is well recognized and accepted. Within this function is the unavoidable responsibility of the health authorities to alert, respond to and control the health risks that may arise from health emergencies. In short, everything that falls under emergency preparedness and health security. Thus, this dimension is fundamental to any public health framework, and the

⁶ <http://www.who.int/mediacentre/news/releases/2015/mdg-sdg-report/en/>

expectations and visibility associated with it make any weaknesses stand out, attracting the attention of the public and the criticism of the media and other observers.

Recent global health crises, including H1N1 influenza (2009), Ebola (2014) and Zika (2016) have led to questions about the ability of the national and international public health community to deal with such threats. WHO has not been immune from this criticism, with reports alternating between denouncement of its exaggerated response and its slow reaction.

To formulate an appropriate response to any of these challenges, it is necessary to draw on the IHR, which have been at the heart of global health security since 1969. These regulations aim to prevent, protect against, control and provide a response to public health threats through improved surveillance, reporting and international cooperation, and to do so in ways which avoid unnecessary interference with international traffic and trade.

There is a clear requirement to integrate or embed the actions taken to implement the IHR in health systems, as an inherent component of health systems and not as something imposed externally. From this perspective, it is not only feasible, but imperative that EPHF frameworks incorporate the key elements of the IHR and ensure their effectiveness—as envisaged in the multisectoral and health system schemes proposed by the joint external evaluation tool, which includes elements of the WHO health systems framework (leadership and governance; health financing; health workforce; health information systems; medical products, vaccines and health technology; and service delivery).

In one way or another, any proposed EPHF framework must be in line with the WHO programmes in the field, aligning efforts with WHO's work on preparedness, alert, response and building IHR core capacities.

Noncommunicable diseases and mental health initiatives

Unlike the acute and very visible threat of communicable diseases, NCDs tend to go undetected initially, but persist to become chronic. The main types of NCDs are cardiovascular diseases (heart attacks and stroke), cancers, chronic respiratory diseases (chronic obstructive pulmonary disease and asthma) and diabetes.

NCDs are the result of a combination of genetic, physiological, environmental and behavioural factors; as such, public health interventions can be used to minimize the NCD burden. Particularly important are interventions on common risk factors such as tobacco use, harmful alcohol consumption, physical inactivity and unhealthy diet. Underlying those risk factors are the social determinants of health. From that perspective, the link between the EPHF frameworks and programmes related to the prevention and control of NCDs is clear. The implementation of NCD strategies promoted by WHO is integral to health promotion and disease prevention activities. In the most recent formulations of the EPHF frameworks, the efforts of WHO in the global strategy and action plan for the prevention and control of NCDs are well reflected (53). Although there is always room for improvement, NCDs are well covered in the available frameworks.

Specific WHO programmes/clusters that should be consulted/involved are: chronic diseases and health promotion; mental health and substance abuse; prevention of NCDs; nutrition for health and development; tobacco free initiative; and violence and injury prevention and disability.

Other WHO programmes

Many activities and WHO initiatives are intrinsically linked with the EPHFs, and an effort should be made to check any agreed proposal with the established programme within WHO, such as:

- Health and sustainable development
- Health systems
- Health workforce
- Primary health care
- Social determinants of health
- Water sanitation and health
- Universal health coverage
- Health financing for universal coverage
- Gender, equity, human rights
- Family, women's and children's health
- HIV/AIDS, TB, malaria and neglected tropical diseases.

EPHFs do not sit naturally above or below other global frameworks such as universal health coverage/SDGs. Developing capacity in EPHFs is a valuable goal in its own right and an obvious contributor to these global aspirations, including IHR implementation. Public health has requirements reaching beyond the responsibility of the ministry of health or the health sector, for example requirements in industrial and environmental domains. Guided by the recent resolution (WHA 69.1), it is important to consider how approaches to health systems strengthening can be used to support countries to develop their portfolios of public health functions.

Universal health coverage encompasses the full spectrum of health activities, including prevention and promotion. Effective, comprehensive public health systems support universal health coverage by: a) building resilience through prevention and detection of health emergencies (health protection, surveillance, emergencies functions); b) enabling effective governance, management and workforce planning (governance and workforce functions); c) promoting the development of context-specific evidence-based health care (research function); and d) strengthening the financial position of health services by implementing upstream public health interventions (promotion and health protection functions).

In reality, EPHF programmes are often ignored when listing health and disease programmes during planning exercises, particularly those that encompass multisectoral work. The health systems framework can support (analyse, plan, etc.) all types of health programmes including those focused on EPHFs.

Finally, it should be emphasized that the lists of both the European and Eastern Mediterranean regions, for example, base many of the assessment areas on existing WHO tools, and new tools related to the above agendas can incorporate or inform the underlying operations in the EPHFs to ensure coherence across WHO efforts and links between programmes.

7. Next steps for the agenda on essential public health functions: options for WHO leadership

Key points

- Based on the findings of this report, there is no clear “right” way to move forward on the EPHF agenda, rather there are several possibilities, each with its own advantages and risks.
- Option 1: relaunch the consensus-building process with greater participation from regional counterparts, building on past lists in order to agree on a unified list of meta-EPHFs.
- Option 2: explicitly support different national and regional approaches to EPHFs, focusing on the process-based advantages of engaging with national decision-makers in setting reform priorities.
- Option 3: reformulate the EPHFs into a different policy instrument (for example public health targets based on the EPHFs) in order to attract support for advancing public health while allowing countries to design their own approach to meeting objectives.

Today, the different regional offices and actors involved in advancing the EPHFs worldwide do not consider that the WFPHA framework provides sufficient conceptual clarity for a global framework. Apart from the specific weaknesses mentioned earlier, another possible important reason why the expert informants consulted do not currently support the WFPHA framework is that they were not involved or consulted during its development. This lack of participation translates to a lack of representation for regional perspectives, objectives and priorities.

More generally, the intended goal of the WFPHA—to arrive at a global consensus about how public health is defined and delineated—was ambitious. One of the important ongoing debates in this field is the extent to which the concept of public health should encompass health care and other services outside the health sector. On the one hand, some strong proponents of public health see the EPHFs as part of a holistic approach to strengthen health systems and universal health coverage, understanding that all health care services are public health services. Others, equally committed to pursuing a public health mission, see this approach as counterproductive because it dilutes the emphasis on population-based services and functions. Instead, they see the need to identify specific public health services within both health care and other government and social sectors in order to concentrate the public health remit on health protection and promotion as well as disease prevention. This does not mean that public health and health care services are separate—both are within the health system and need to work hand in hand to deliver public health services (e.g. vaccination, screening, health promotion). However, this approach to public health is less concerned with some of the main challenges of the EPHFs related to universal health coverage (e.g. financing) and more with developing mechanisms for shared decision-making and collaboration between different governmental and nongovernmental sectors. Given the great variety of health systems and approaches to achieving universal health coverage in the world, the tension between these two perspectives on public health may be inevitable and to some extent irreconcilable. Any global framework will have to recognize these differences and also build a conceptual bridge between them.

The scope of the public health definition determines the strategies and tactics needed. If the goal is to increase the attention and emphasis given to population-based services of protection, prevention and promotion, it would be important to concentrate public health efforts in these

areas without also trying to cover health care and its financing. In this context, universal health coverage would be pursued in parallel, as a complementary and compatible objective, and together universal health coverage and public health would offer a comprehensive and coherent vision for health systems. On the other hand, in some regions these two concepts have been merged into a single model, and separating one (population access to quality health care) from the other (population-based services) is not feasible.

With the above in mind, three courses of action are proposed for advancing the EPHF agenda worldwide, in line with the roadmap for conceptualization and implementation of EPHFs in Annex 1.

Option 1: Develop consensus-based EPHF meta-functions

The first option for pursuing a global understanding of public health is to involve the main stakeholders in each region in an exchange of opinions in order to develop a list of common meta-functions and definitions. In this effort, the WFPHA framework could be used as one input to be considered along with other EPHF frameworks developed around the world. All stakeholders would need to be involved in order to achieve a legitimate outcome, including the different WHO regional offices, CDC, the World Bank, and the WFPHA.

As proposed by EMRO, a reasonable place to start developing a unified list would be with the elements that feature in all or most of the lists. According to the content analysis in this research, these include surveillance, governance/financing, health promotion, health protection/legislation, research and human resources. Disease prevention, health care, emergency preparedness, social participation and communication are areas that might attract more debate. Such an endeavour has both potential benefits and risks (Table 2).

Table 2. Potential benefits and risks of developing a unified list of essential public health functions (EPHFs) (option 1)

Potential benefits	Potential risks
- Fosters communication, ownership and awareness of EPHFs, including in research - Brings visibility to public health issues, potentially making it easier to act through international consensus - Makes it easier to engage with national policy-makers, with a clear list of needs and priorities - Allows for better coordination with other health initiatives, including the SDGs, IHR and universal health coverage - Promotes healthy competition between countries to improve national health systems - Provides opportunities to engage regions, such as South-East Asia and Africa regions, which have so far not pursued any systematic and region-wide initiatives on EPHFs, as well as the WFPHA, CDC and World Bank	- Undermines local ownership in nationally based initiatives related to EPHFs - Without strong leadership in the consensus-building process, results in disagreements on specific EPHFs that may not be resolved, leading to conceptual stalemate despite common goals - Wastes energy developing a common framework rather than supporting local and regional initiatives that may be better adapted to specific country needs

Option 2: Promote EPHFs as a method rather than a product for improving population health

In the research for this report, numerous different examples were found of how countries and regions have used the EPHF process to advance public health reform. The tiered format of the EPHF frameworks—with general titles of functions that are easily understood by non-specialists giving way to increasingly detailed descriptions of specific aspects of public health competencies—has proven to be a flexible and multipurpose vehicle for effecting change. However, a key aspect of the EPHF approach is its ability to allow local and regional actors to develop their own versions. This process directly engages national policy-makers in an effort to define public health in their own setting, which necessitates their close involvement and results in more personal investment to programme goals. For WHO, this option represents an implicit recognition that public health is not understood in the same way throughout the world and respects the fact that national and regional particularities are intrinsic to actions that respond to local goals. Thus, advancing the EPHF agenda would imply promoting a specific policy-making process, similar to, for example, a national cancer control plan, rather than pursuing a common global agenda in public health.

The potential benefits and risks of this approach are shown in Table 3.

Table 3. Potential benefits and risks of promoting regional and national adaptations of essential public health functions (EPHF) (option 2)

Potential benefits	Potential risks
- Increases flexibility and adaptability at a national/regional level - Fosters local ownership of public health priorities within a well-developed format for planning comprehensive reforms - Respects diversity of opinions in defining public health, allowing efforts to be spent on pursuing common policy goals	- Fails to attract the participation of countries or regions that have not yet developed an EPHF framework - Leads to fragmented progress between different regions, unless paired with explicit efforts to document EPHF processes in peer-reviewed literature - Complicates understanding and global initiatives on public health, because of the absence of a consensus definition of the public health remit

Option 3: Reformulate EPHFs as a complementary policy tool or mechanism

A third avenue, which could potentially overcome the disadvantages of the previous two options while keeping many of their benefits (albeit bringing other risks), is to reformulate the EPHFs through a different mechanism, such as a list of global targets for public health. These could draw from the EPHFs but retain only minimal organization in order to allow countries and regions the freedom to organize policies and strategies in line with their health systems. The natural means to achieve the targets would be the EPHF process, but ultimately this would be left to individual actors.

One possibility for developing global public health targets would be to model the initiative on previous or current global initiatives, such as the Millennium Development Goals or their successor, the SDGs. These have been very successful in focusing global attention on development issues and have led to highly encouraging and tangible improvements for populations across the globe (54). While the SDGs include issues related to health, this is not the specific focus. Rallying the global development community around public health targets, then, could send a powerful signal to countries on the intersectionality between population health and other development issues.

However, for such an effort to be directly relevant to all countries, the targets would have to be tiered to allow for different levels of development, with the understanding that countries should first focus on areas with the largest marginal utility, before expanding the scope of interventions that will have increasingly diminishing returns. For example, in the area of maternal and infant health, it makes sense to first ensure that all births are attended by a skilled birth attendant, before investing in prenatal screening programmes that will only benefit a fraction of the population (e.g. amniocentesis). Likewise, if not all mothers have access to skilled birth attendants, governments should probably not devote limited resources to expensive and complex public health interventions in other areas, no matter how desirable these may be (e.g. population-based breast cancer screening). Clearly, this option has important shortcomings and requires complex value judgements as well as solid economic analyses of numerous areas of health policy. Moreover, as disease burdens are not the same even across countries in the same income bracket, there is no one-size-fits-all solution to health systems strengthening. On the other hand, this option also has the potential to map a general course of health systems development—however imprecise—that is lacking today, and it could help to guide countries in deciding which programmes to start, which to scale up and which to put on hold.

As with the previous two options, this course of action also has potential benefits and risks (Table 4).

Table 4. Potential benefits and risks of developing global public health targets (options 3A and 3B)

Option 3A: Development of a single list of public health targets based on the essential public health functions (EPHFs)	
Potential benefits	Potential risks
• Circumvents semantic debate on defining public health and focuses attention on establishing and meeting common goals • Allows countries and regions to develop their own strategies to achieve goals, in line with their circumstances and realities • Attracts high-level political support, including within the United Nations governing bodies, framing public health as a key pillar of global development	• Fails to engage high-income countries that meet basic health systems targets but where public health is still a relatively neglected area of action • Targets do not provide a means to implement improvements, so countries would require considerable policy guidance on EPHFs • Detracts from the EPHF agenda unless explicitly tied to it, for example through the name (e.g. Essential Public Health Function Targets)
Option 3B: Development of a tiered list of public health targets based on the EPHFs	
Potential benefits	Potential risks
<i>All of the above, plus:</i> • Engages all WHO Member States in efforts to improve public health based on the EPHFs • Charts a general course for health systems strengthening across different areas of public health, based on expert consensus (tiered priorities for programme development) and economic analysis (maximizing marginal utility)	<i>Second and third risks from above, plus:</i> • Requires complex value judgements in terms of which targets pertain to which tiers • Economic analyses across contexts and countries are imprecise, with limited generalizability • Member States and citizens are reluctant to accept divisions in service levels if they perceive these to divide countries into “first” and “second” class

8. Conclusions

No matter how WHO chooses to proceed in this effort, its leadership in advancing the EPHF agenda—and tying it to other global health programmes—is crucial. In fact, working towards a global strategy is an ethical imperative and one of the functions of WHO as the leader in global health matters. WHO leadership in headquarters should establish the basis and the objectives for action, while the regional offices should present their visions based on country and regional experiences, reflecting also the perspectives of the WHO country offices. The level of participation in this process can be understood as a proxy for the level of support that the final product will receive, and only if country and regional-level actors have the opportunity to help shape the final strategy and/or list of EPHFs, will it be a true reflection of national and regional contexts, needs and goals.

9. Glossary

Accountability: the result of the process which ensures that health actors take responsibility for what they are obliged to do and are made answerable for their actions (55).

Antenatal care coverage: percentage of women who utilized antenatal care provided by skilled health personnel for reasons related to pregnancy at least once during pregnancy as a percentage of live births in a given time period (56).

Assessment: a systematic or non-systematic way of gathering relevant information, and analysing and making judgment on the basis of the available information (57).

Burden of disease: a measurement of the gap between a population's current health and the optimal state where all people attain full life expectancy without suffering major ill-health (14).

Capacity building: The development of knowledge, skills, commitment, structures, systems and leadership to enable effective public health/health promotion (58).

Civil registration and vital statistics (CRVS): a well-functioning CRVS system registers all births and deaths, issues birth and death certificates, and compiles and disseminates vital statistics, including cause of death information. It may also record marriages and divorces (59).

Cluster (in the context of statistics): a number of individuals grouped together; a significant subset within a population.

Cluster (in the context of humanitarian reform): a group of agencies, organizations and/or institutions interconnected by their respective mandates, which work together towards common objectives. The purpose of the cluster is to foster timeliness, effectiveness and predictability while improving accountability and leadership (57).

Commitment: firm promises of the government made in policy statements (55).

Communicable diseases: diseases caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi; the diseases can spread directly or indirectly from one person to another (60).

Community health needs assessment: the ongoing process of evaluating the health needs of a community. It usually facilitates prioritization of needs and a strategy to address them (61).

Contingency planning: the process of establishing programme objectives, approaches and procedures to respond to situations or events that are likely to occur, including identifying those events and developing likely scenarios and appropriate plans to prepare and respond to them in an effective manner (57).

Continuing education: the formal education obtained by a health professional after completing his/her degree and full-time postgraduate training (61).

Contraceptive prevalence rate: the proportion of women of reproductive age who are using (or whose partner is using) a contraceptive method at a given point in time (62).

Counselling: an interaction offering an opportunity for a person to explore, discover and clarify ways of living with greater well-being, usually in a one-to-one discussion with a trained counsellor (61).

Crisis: an event or series of events representing a critical threat to the health, safety, security or well-being of a community, usually over a wide area. Armed conflicts, epidemics, famine, natural disasters, environmental emergencies and other major harmful events may involve or lead to a humanitarian crisis (49).

Curative care: the medical treatment and care that cures a disease or relieves pain and promotes recovery (61).

Data: facts and figures as raw material, not analysed (55).

Demographic and Health Survey (DHS): these are nationally-representative household surveys that provide data on a wide range of monitoring and impact evaluation indicators in the areas of population,

health, and nutrition. A mix of survey tools are used to conduct DHS: questionnaires, biomarkers and geographic information. A DHS is conducted by an in-country institution, typically the national statistics office. A key aim of DHSs is to provide quality data for policy development and programme planning, monitoring and evaluation (63).

Disaster: any occurrence that causes damage, ecological disruption, loss of human life or deterioration of health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area (64).

Disease outbreak: the occurrence of cases of disease in excess of what would normally be expected in a defined community, geographical area or season. An outbreak may occur in a restricted geographical area or may extend over several countries. It may last for a few days or weeks, or several years (65).

Early warning alert and response system: a communicable disease surveillance and response system designed to detect as early as possible any departure from the usual or normally-observed frequency or phenomenon (57).

Effectiveness: the extent to which a specific intervention, procedure, regimen or service, when deployed in the field in routine circumstances, does what it is intended to do for a specified population (55).

Emergency: a sudden occurrence demanding immediate action which may be due to: epidemics, natural disasters, technological catastrophes, conflict or other man-made causes (66).

Emergency preparedness: the actions taken in anticipation of an emergency to facilitate rapid, effective and appropriate response to the situation. A programme of long-term activities whose goals are to strengthen the overall capacity and capability of a country or a community to manage efficiently all types of emergencies and bring about an orderly transition from relief through to recovery, and back to sustained development. It requires emergency plans to be developed, personnel at all levels and in all sectors to be trained, and communities at risk to be educated, and that these measures be monitored and evaluated regularly (64).

Environment: all that which is external to the individual, including physical, biological, social, cultural and other factors (61).

Environmental health: all the physical, chemical and biological factors external to a person and all the related behaviour that can affect health. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating health-supportive environments (67).

Essential medicines: medicines that satisfy the priority health care needs of the population. They are selected based on public health relevance, evidence on efficacy and safety, and comparative cost-effectiveness (68).

Evaluation: the systematic and objective assessment of the relevance, adequacy, progress, efficiency, effectiveness and impact of a course of actions, in relation to objectives, taking into account the resources and facilities that have been deployed (55).

Evidence: any form of knowledge, including, but not confined to research, of sufficient quality to inform decisions (55).

Evidence-informed health policy-making: an approach to policy decisions that aims to ensure that decision-making is well-informed by the best available research evidence. It is characterized by the systematic and transparent access to, and appraisal of, evidence as an input into the policy-making process (69).

Food safety: actions aimed at ensuring that all food is as safe as possible. Food safety policies and actions need to cover the entire food chain, from production to consumption (70).

Global health: the transnational impacts of globalization upon health determinants and health problems which are beyond the control of individual nations (58).

Global adult tobacco survey (GATS): a nationally representative household survey, launched in February 2007, as a new component of the ongoing Global Tobacco Surveillance System (GTSS). The GATS enables

countries to collect data on adult tobacco use and key tobacco control measures. Results from the GATS assist countries in the formulation, tracking and implementation of effective tobacco control interventions, and countries are able to compare results of their survey with results from other countries. Topics covered in GATS include: tobacco use prevalence (smoking and smokeless tobacco products); second-hand tobacco smoke exposure and policies; cessation; knowledge, attitudes and perceptions; exposure to media; and economics (71).

Global Outbreak Alert and Response Network (GOARN): a technical collaboration of existing institutions and networks that pool human and technical resources for the rapid identification, confirmation and response to outbreaks of international importance. The Network provides an operational framework to link this expertise and skill to keep the international community constantly alert to the threat of outbreaks and ready to respond. GOARN contributes towards global health security by: combating the international spread of outbreaks, ensuring that appropriate technical assistance reaches affected states rapidly, and contributing to long-term epidemic preparedness and capacity building (72).

Global youth tobacco survey (GYTS): a school-based survey designed to enhance the capacity of countries to monitor tobacco use among youth and to guide the implementation and evaluation of tobacco prevention and control programmes. It uses a standard methodology for constructing the sampling frame, selecting schools and classes, preparing questionnaires, following consistent field procedures, and using consistent data management procedures for data processing and analysis. The information generated from the GYTS can be used to stimulate the development of tobacco control programmes and can serve as a means to assess progress in meeting programme goals. In addition, GYTS data can be used to monitor seven Articles in the WHO Framework Convention on Tobacco Control (73).

Hazard: any phenomenon that has the potential to cause disruption or damage to people and their environment (66).

Health accounts (national): a process through which countries monitor the flow of money in their health sector. It delivers the means to learn retrospectively from past expenditure, improving planning and allocation of resources and increasing systems accountability. This aims to help Member States protect their people from catastrophic health bills, reduce inequities in health and make definitive progress towards universal health coverage (74).

Health communication: exchange of information with the public or communities about health issues with the objective of reducing health risks and improving health status.

Health determinants: the factors that combined together affect the health of individuals and/or communities. A number of factors have considerable impact on health; for example where we live, the state of the environment, genetics, income and education level, and relationships with friends and family. Health determinants include the: social and economic environment; physical environment; and person's individual characteristics and behaviours (75).

Health development: the continuous, progressive improvement of the health status of individuals and groups in a population.

Health financing: how financial resources are generated, allocated and used in health systems. Health financing policy focuses on how to move closer to universal coverage with issues related to: how and from where to raise sufficient funds for health; how to overcome financial barriers that exclude many poor from accessing health services; and how to provide an equitable and efficient mix of health services (76).

Health governance: the wide range of steering and rule-making related functions carried out by governments/decisions-makers as they seek to achieve national health policy objectives that are conducive to universal health coverage. Governance is a political process that balances competing influences and demands. It includes: maintaining the strategic direction of policy development and implementation; detecting and correcting undesirable trends and distortions; articulating the case for health in national development; regulating the behaviour of a wide range of actors, from health care financiers to health care providers; and establishing transparent and effective accountability mechanisms (77).

Health impact assessment: the combination of procedures, methods and tools by which a policy, programme, product or service can be judged about its effects on the health of the population (58).

Health in all policies (HiAP): an approach to public policies across sectors that systematically takes into account the implications for health and health systems of decisions, seeks collaborations, and avoids harmful health impacts in order to improve population health and health equity. An HiAP approach is founded on health-related rights and obligations. It emphasizes the effect of public policies on health determinants, and aims to improve the accountability of policy-makers for the effects on health of all levels of policy-making (78).

Health inequity: the avoidable inequalities in health between groups of people within countries and between countries. These inequities arise from inequalities within and between societies. They are attributable to the external environment and conditions mainly outside the control of the individuals concerned. Social and economic conditions and their effects on people's lives determine their risk of illness and the actions taken to prevent them becoming ill or to treat illness when it occurs. It represents the differences in health status or in the distribution of health resources between different population groups arising from the social conditions in which people are born, grow, live, work and age. Health inequities are unfair and could be reduced by the right mix of government policies (79).

Health needs: the objectively determined deficiencies in health that require health care, from promotion to palliation. Perceived health needs: the need for health services as experienced by the individual and which he/she is prepared to acknowledge; the perceived need may or may not coincide with professionally defined or scientifically confirmed needs. Professionally defined health needs: the need for health services as recognized by health professionals from the point of view of the benefit obtainable from advice, preventive measures, management or specific therapy; professionally defined needs may or may not coincide with perceived or scientifically confirmed needs. Scientifically confirmed health needs: the need confirmed by objective measures of biological, anthropometric or psychological factors, expert opinion or the passage of time; it is generally considered to correspond to those conditions that can be classified in accordance with the International Classification of Diseases (55).

Health promotion: the process of enabling people to increase control over, and improve, their health. It goes beyond a focus on individual behaviour to a wide range of social and environmental interventions (80).

Health sector plan: an agreed set of arrangements for responding to, and recovering from, emergencies, including the description of responsibilities, management structures, and resource and information management strategies (81).

Health service: any service (i.e. not limited to medical or clinical services) aimed at contributing to improved health or to the diagnosis, treatment and rehabilitation of sick people (55).

Health system performance: the level of achievement of the health system relative to resources; the degree to which a health system carries out its functions – service provision, resource generation, financing and stewardship – to achieve its goals (82).

Health systems governance: the process of defining, leading and implementing policies in health service delivery, health financing and resource generation, in line with health priorities and own goals and values (83).

Health technology assessment: the systematic evaluation of properties, effects, and/or impacts of health technology. Its main purpose is to inform technology-related policy-making in health care, and thus improve the uptake by the health system of new cost-effective technologies and prevent the uptake of technologies that are of doubtful value (84).

Health workers: all people engaged in actions whose primary intent is to enhance health (85).

Health workforce: those who provide health services such as doctors and nurses, and those who support the health services such as hospital managers and ambulance drivers (86).

Impact: the total, direct and indirect, effects of a programme, service or institution on a health status and overall health and socioeconomic development; the degree of achievement of an ultimate health objective (55).

International Classification of Diseases (ICD): the standard diagnostic tool for epidemiology, health management and clinical purposes. This includes the analysis of the general health situation of population

groups. It is used to monitor the incidence and prevalence of diseases and other health problems. It is used by countries for decision-making on reimbursement and resource allocation (87).

International Health Regulations (2005) (IHR 2005): an international legal instrument that is binding for 194 countries across the globe, including all WHO Member States. Their aim is to help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide (88).

Intervention: an activity or set of activities aimed at modifying a process, course of action or sequence of events in order to change one or several of their characteristics such as performance or expected outcome (55).

Knowledge, attitudes and practices (KAP) survey: a representative study of a specific population to collect information on what is known, believed and done in relation to a particular topic. In most KAP surveys, data are collected orally by an interviewer using a structured, standardized questionnaire (89).

Knowledge brokering: a strategy to close the know-do gap and foster greater use of research findings and evidence in policy-making. It focuses on organizing the interactive process between the producers and users of knowledge so that they can coproduce feasible and research-informed policy options (90).

Maternal health: the health of women during pregnancy, childbirth and the postpartum period (91).

Mental health: a broad array of activities directly or indirectly related to the mental well-being component included in WHO's definition of health which is, "A state of complete physical, mental and social well-being, and not merely the absence of disease". It is related to the promotion of well-being, the prevention of mental disorders, and the treatment and rehabilitation of people affected by mental disorders (92).

Millennium Development Goals (MDGs): eight goals that all 191 Member States of the United Nations agreed to try to achieve by the year 2015. They are related to combatting poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women (93).

Monitoring: the continuous oversight of an activity to assist in its supervision and to see that it proceeds according to plan. Monitoring involves the specification of methods to measure activity, use of resources and response to services against agreed criteria (55).

Morbidity: the measure of disease incidence or prevalence in a given population.

Mortality: the measure of deaths in a given population.

Multiple indicator cluster survey (MICS): an international household survey initiative coordinated by UNICEF to assist countries in collecting and analysing data in order to fill data gaps for monitoring the situation of children and women. The MICS has enabled many countries to produce statistically sound and internationally comparable estimates of a range of indicators in the areas of health, education, child protection and HIV/AIDS (94).

National public health institutes (NPHIs): science-based governmental organizations that serve as a focal point for a country's public health efforts, as well as a critical component of global disease prevention and response systems. Typical core functions of NPHIs include surveillance of diseases and injuries, as well as risk factors; epidemiologic investigations of health problems; public health research; and response to public health emergencies (95).

Nutrition: the intake of food, considered in relation to the body's dietary needs (96).

Objective: a statement of a desired future state, condition, or purpose, which an institution, a project, a service or a programme seeks to achieve (55).

Occupational health: all aspects of health and safety in the workplace. It has a strong focus on primary prevention of hazards (97).

Operational plan: the effective management of resources with a short-term framework, converting objectives into targets and activities, and arrangements for monitoring implementation and use of resources (55).

Oral health: a state of being free of chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) diseases, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity (98).

Outcome: aspects of health that result from the interventions provided by the health system, the facilities and personnel that recommend them and the actions of those who are the targets of the interventions (55).

Personal health services: health services targeted at the individual. These include, among others, health promotion, timely disease prevention, diagnosis and treatment, rehabilitation, palliative care, acute care, and long-term care services (55).

Physical activity: any bodily movement produced by skeletal muscles that requires energy expenditure. Physical inactivity has been identified as the fourth leading risk factor for global mortality (99).

Prevention/mitigation: regulatory and physical measures to ensure that emergencies are prevented, or their effects mitigated (81).

Primary care: the part of a health services system that assures person-focused care over time to a defined population, accessibility to facilitate receipt of care when it is first needed, comprehensiveness of care in the sense that only rare or unusual manifestations of ill health are referred elsewhere, and coordination of care such that all facets of care (wherever received) are integrated. Quality features of primary care include effectiveness, safety, people-centeredness, comprehensiveness, continuity and integration (55).

Public health: all organized measures (whether public or private) to prevent disease, promote health and prolong life among the population as a whole. Its activities aim to provide conditions in which people can be healthy and they focus on entire populations, not on individual patients or diseases. Thus, public health is concerned with the total system and not only the eradication of a particular disease. The three main public health functions are to: assess and monitor the health of communities and populations at risk to identify health problems and priorities; formulate public policies designed to solve identified local and national health problems and priorities; and assure that all populations have access to appropriate and cost-effective care, including health promotion and disease prevention services (100).

Public health laboratory: a governmental reference laboratory that protects the public against diseases and other health hazards.

Public health legislation: the laws, ordinances, directives, regulations and other similar legislative instruments that deal with all aspects of health protection and promotion, disease prevention, and delivery of health care (101).

Public health services: health services targeted at the population as a whole. These include, among others, health situation analysis, health surveillance, health promotion and prevention services, infectious disease control, environmental protection and sanitation, disaster preparedness and response, and occupational health (55).

Recovery: reconstruction of the physical infrastructure and restoration of emotional, social, economic and physical well-being after an emergency (81).

Regulation: imposition of external constraints upon the behaviour of an individual or an organization to force a change from preferred or spontaneous behaviour (102).

Reproductive health: the reproductive processes, functions and system at all stages of life. It therefore implies that people are able to have a responsible, satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so (103).

Research for health: research that seeks to perform the functions of: understanding the impact on health of policies, programmes, processes, actions or events originating in any sector; assisting in developing interventions that will help to prevent or mitigate that impact; and contributing to the achievement of the MDGs, health equity and better health for all (Global Forum for Health Research). It reflects the fact that improving health outcomes requires the involvement of many sectors and disciplines (104).

Resources: inputs required to make health systems work (human and financial resources, drugs, supplies and equipment, and infrastructure (55).

Resource planning: estimation of resource inputs (human resources, medical devices, medical equipment, pharmaceuticals and facilities) necessary to provide expected services (55).

Response: actions taken in anticipation of, during, and immediately after an emergency to ensure that its effects are minimized (81).

Risk factors: any attribute, characteristic, or exposure of an individual that increases the likelihood of developing a disease or injury (105).

Risk reduction: measures designed either to prevent hazards from creating risks or to lessen the distribution, intensity or severity of hazards. These measures include flood mitigation works and appropriate land-use planning. They also include vulnerability reduction measures such as awareness-raising, improving community health security, and relocation or protection of vulnerable populations or structures (106).

Service availability and readiness assessment (SARA): a health facility assessment tool designed to assess and monitor the service availability and readiness of the health sector and to generate evidence to support the planning and managing of a health system. SARA is a systematic survey to generate a set of tracer indicators of service availability and readiness. The survey objective is to generate reliable and regular information on: service delivery (such as the availability of key human and infrastructure resources), the availability of basic equipment, basic amenities, essential medicines, and diagnostic capacities; and the readiness of health facilities to provide basic health care interventions relating to family planning, child health services, basic and comprehensive emergency obstetric care, HIV/AIDS, tuberculosis, malaria, and noncommunicable diseases (107).

Social determinants of health: the conditions and circumstances in which people are born, grow up in, live, work and age; and the systems put in place to deal with illness. These circumstances are shaped by a wider set of forces such as the distribution of money, power and resources at global, national and local levels (108,109).

Stakeholder: an individual, group or organization that has an interest in the organization and delivery of health care (55).

Standard: an established, accepted and evidence-based technical specification or basis for comparison (110).

STEPwise approach to surveillance (STEPS): a simple, standardized method for collecting, analysing and disseminating data in WHO member countries. By using the same standardized questions and protocols, all countries can use STEPS information to monitor within-country trends and make comparisons across countries. The approach encourages the collection of small amounts of useful information on a regular and continuing basis (111).

Strategy: a series of broad lines of action intended to achieve a set of goals and targets set out within a policy or programme (112).

Substance abuse: the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs (113).

Surveillance: the continuous, systematic collection, analysis and interpretation of health-related data needed for the planning, implementation and evaluation of public health practice. Such surveillance can: serve as an early warning system for impending public health emergencies; document the impact of an intervention, or track progress towards specified goals; and monitor and clarify the epidemiology of health problems, to allow priorities to be set and inform public health policy and strategies (114).

Tobacco products: products made entirely or partly of leaf tobacco as a raw material, which are intended to be smoked, sucked, chewed or snuffed. All contain the highly addictive psychoactive ingredient, nicotine. Tobacco use is one of the main risk factors for a number of chronic diseases, including cancer, lung diseases and cardiovascular diseases (115).

Total health expenditure: sum of public and private health expenditure. It covers the provision of health services (preventive and curative), family planning activities, nutrition activities, and emergency aid designated for health but does not include provision of water and sanitation.

Unique patient identifier: a single, universal identifier for an individual's health information that ensures availability of all data associated with that particular patient.

Utilization (of health services): experience of people of their receipt of health care services of different types (55).

Vaccine: biological preparation that improves immunity to a particular disease (116).

Violence: intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, which either results in or has a high likelihood of causing injury, death, psychological harm, mal-development or deprivation (117).

Vulnerability assessment: a procedure for identifying hazards and determining their possible effects on a community, activity, or organization. It provides information essential for: sustainable development, emergency prevention, mitigation, preparedness, response and recovery (81).

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Annex 1. Roadmap for essential public health functions: conceptualization and implementation

The WHO internal meeting in Copenhagen (15–16 March 2016) articulated clear linkages between health systems strengthening, essential public health functions (EPHFs) and core capacities strengthening of the International Health Regulations (2005) (IHR). There was a recommendation to develop a roadmap to set out options for actions based on the Executive Board resolution 138.R5 (adopted in May 2016 as WHA69.1) and to advance integrated work with health security and health systems strengthening.

The roadmap serves to take forward WHO's position on EPHFs, including integration with complementary work on health systems and health security. This roadmap addresses WHO's normative, coordination, operational and monitoring roles across all three levels of the organization, and is intended as an outline of priority requirements rather than an aspirational, exhaustive list of potential work on this topic.

GOALS

To enable a harmonized WHO approach to EPHFs in line with resolution WHA69.1, ensuring close links with related work on health security and universal health coverage

WHO's FUNCTIONS in EPHFs (reflecting requests to the Director-General in resolution WHA69.1)

Normative + Technical guidance

- To develop and disseminate technical guidance on the application of EPHFs, taking into account WHO regional definitions, as part of the initiatives for the strengthening of health systems and achieving universal health coverage

Implementation + Operation

- To facilitate international cooperation and to continue and enhance support to Member States upon request in their efforts to build the necessary institutional administrative and scientific capacity, by providing technical support on EPHFs and health systems strengthening, including prevention, detection and assessment of and response to public health events, and on integrated and multisectoral approaches to universal health coverage; and to develop facilitating tools in this regard.

Directing + Coordinating

- To take the lead role, facilitate international cooperation and foster coordination in global health at all levels, particularly in relation to health systems strengthening, multisectoral approaches and universal health coverage, including EPHFs, to support the achievement of the health-related sustainable development goals and targets.

Monitoring

- To report to the World Health Assembly on the implementation of this resolution as a contribution to the achievement of health-related targets in the 2030 Agenda for Sustainable Development.

OBJECTIVES FOR ACTION (note: draft outputs and timelines to be adjusted as necessary)

1. REACH AGREEMENT ON A HARMONIZED WHO APPROACH TAKING CONSIDERATION OF REGIONAL AND COUNTRY CONTEXTS

Issue statement	There is a demand from the three levels of the Organization to develop a common understanding of EPHFs, including constituent functions & a unified approach to public health taking consideration of local/regional contexts. Institutional understanding of EPHFs should be based on the experience of practical application of the relevant tools and frameworks in Member States.
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Expected outcome(s)	Systematic high-level engagement in, review of and commitment to EPHFs and associated priorities at all three levels of WHO and with relevant partners.
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Key activities and milestones	Timeline
Develop the reference document <i>Essential public health functions, health systems, and health security: developing conceptual clarity</i> and a WHO roadmap for action	to be determined once funding is in place
Complete consultation with regional offices on the document and take on board their feedback	to be determined once funding is in place
Release the report to relevant stakeholders and consideration of peer-review paper	to be determined once funding is in place
Provide support to the Alliance for Health Policy and Systems Research project on EPHFs and health systems performance	to be determined once funding is in place

2. IDENTIFY AND DEVELOP TOOLS AND RESOURCES TO SUPPORT MEMBER STATES TO PLAN AND DELIVER ESSENTIAL PUBLIC HEALTH FUNCTIONS

Issue statement	Development of public health capacity within Member States requires that conceptual understanding of EPHFs is translated into practical tools and resources that can be used to put this into practice across a range of settings.
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Expected outcome(s)	Development of tools and resources to support building public health capacity within Member States, with common, consensus-based EPHF meta-functions complemented by context-specific functions.
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Key activities and milestones	Timeline
Assess available EPHF and related tools and resources, and survey 5–10 Member States on the support they need from WHO	to be determined once funding is in place
Revise the EPHF roadmap and work plan based on the assessment results and available resources, focusing on providing support to Member States as outlined in resolution WHA69.1	to be determined once funding is in place
Develop options for consideration of EPHFs in post-mission country support on related work streams such as National Quality Policy and Strategy and the integration of health systems strengthening and health security	to be determined once funding is in place

3. COLLABORATE WITH RELEVANT WHO DEPARTMENTS LINKED WITH IHR AND HEALTH SYSTEMS STRENGTHENING ACTIVITIES

Issue statement	Consensus, cross-stakeholder need identified in order to align and integrate WHO work on health security, EPHFs and health systems strengthening, particularly for ongoing work on the joint external evaluation process and costed country action plans.
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Expected outcome(s)	Projects and partnership to trial integrated work at the country level to develop strengthened health systems with resilience to sustain essential health services during and between emergencies. Development of standard resources on health systems/EPHFs/health security, including lessons learned from existing work on preparedness in relation to health systems.
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Key activities and milestones	Timeline
Co-develop a project-based work programme with IHR Capacity Assessment, Development and Maintenance unit	to be determined once funding is in place
Agree terms of reference for health systems representation on selected global health security agenda/joint external evaluation assessments	to be determined once funding is in place
Identify suitable partners and donor organizations and consult on priority countries in critical need of health systems strengthening and IHR capacity-building	to be determined once funding is in place
Establish operational and technical arrangements with relevant partner agencies to negotiate operational capacities to take forward identified priorities at regional and country levels	to be determined once funding is in place
Develop and disseminate lessons learned from country missions on health systems preparedness	to be determined once funding is in place

4. OPERATIONALIZE JOINT WORKING AT REGIONAL TO COUNTRY LEVELS THAT REFLECT LOCAL PRIORITIES AND CONTEXT

Issue statement	EPHF work will need to take place within the wider agenda of the Sustainable Development Goals, which requires action at the country level to advance universal health coverage and improve health security, including adopting an intersectoral and whole of society approach.
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Expected outcome(s)	Projects at the country level with participation of relevant WHO departments across the three levels of the Organization that demonstrate the benefits (efficiency, effectiveness and sustainability) of integration of health systems strengthening, EPHFs and health security and local stakeholder ownership
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Key activities and milestones	Timeline
Establish partnership and stakeholder engagement in the project (its implementation and anticipated outcomes)	to be determined once funding is in place
The project and associated products are planned and reviewed on an ongoing basis to: ensure that joint programmes of work are framed within the wider agenda of universal health coverage 2030; develop communications products outlining the value of integration; and ensure cross-WHO consultation on proposed country level work	to be determined once funding is in place

5. SECURE ADEQUATE RESOURCES

Issue statement	EPHF is currently incorporated into existing WHO work at a conceptual level to varying degrees, and operationally there is a large agenda of work to be done and an opportunity to advance this. However, to do this will require a substantial and stable flow of resources, which are currently absent.
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Expected outcome(s)	Optimum numbers of staff with the appropriate range of skills at the three levels of the Organization to properly implement EPHF priorities and associated work
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Key activities and milestones	Timeline
Establish possible scenarios with different resource levels (do nothing, cost-neutral, basic and optimum)	to be determined once funding is in place
Work for EPHFs to be included in existing programme budget to kick start the work	to be determined once funding is in place
Target and liaise with interested contributors to finance EPHF work. This could include influencing other key actors in EPHF (i.e. WFPHA) to align their efforts with the new WHO approach and shared objectives	to be determined once funding is in place

6. DEVELOP A MONITORING & EVALUATION STRATEGY FOR EPHF PROGRAMME AND COUNTRY SUPPORT

Issue statement	An M&E framework is essential for organizing and reporting on activities supporting EPHF work across all levels of the Organization. This can be linked to existing mechanisms of reporting on the biennial programme budget and to other broad M&E efforts at the global level.
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Expected outcome(s)	Agreed mechanism to review the delivery of the EPHF programme and its impact at regional and country levels and inform existing and future work planning
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Key activities and milestones	Timeline
Review existing assessments and M&E frameworks and arrangements for their feasibility for EPHFs	to be determined once funding is in place
Identify a mechanism to review the headquarters' operation and the impact of integrated EPHF activities, including examples of projects	to be determined once funding is in place
Update and refine the ongoing and further work programme in light of M&E findings	to be determined once funding is in place

STRATEGY – DELIVERY OF THE ROADMAP WILL BE BASED ON THE FOLLOWING PRINCIPLES

1. EXPEDITED CONSENSUS ON GOAL AND OBJECTIVES WITH RELEVANT DEPARTMENTS ACROSS THE ORGANIZATION
2. SHARED OWNERSHIP OF THE PROJECT AND OUTPUTS
3. IMPLEMENTATION-FOCUSED PROGRAMME DEVELOPMENT FOLLOWING A PHASED APPROACH FOR DELIVERY OF OUTPUTS
4. STABILITY IN FUNDING AND RESOURCE MOBILIZATION
5. FLEXIBILITY TO ADAPT TO EXTERNAL FACTORS AND FUNDING CONSTRAINTS WHILST CONTRIBUTING TO THE MOST IMPORTANT PRIORITIES

APPRAISAL OF DIFFERENT SCENARIOS FOR RESOURCES

Options	Outcome
i) Do nothing – maintain the status quo	No organizational centre to harness experiences and drive the EPHF work forward; No linkage of current practices within and outside of WHO
ii) Cost-neutral – re-purposing 1 or 2 existing staff	Limited coordination across the three levels of WHO with limited support at the region and country levels; Integration of EPHFs within relevant complementary work streams; Endorse external work
iii) Basic resources – 3 full-time staff at headquarters and allocation of a proportion of staff time on EPHFs at the regional and country offices of priority countries. Basic non-staff resources for administration, travel, translation, publication and meetings.	Active participation and support to implement EPHF work; Partnerships established and promoted; Meetings attended and input provided to consultations and guidance documents; Communication and publication
iv) Optimum resources – 3 full-time staff at headquarters and allocation of health systems staff on EPHFs at regional offices and country offices of priority countries. Basic non-staff resources as above, with additional funding for advanced stakeholder management, conference attendance and external consultancy for country missions and production of standard guidance documents	All of iii) above and Predictable and organized regional and country office support and coordination; Fully integrated work programme; WHO coordination in EPHFs, health systems strengthening and IHR activities

Table A.1. Risks analyses of the EPHF roadmap

Potential risks	Possible reason	Management/mitigation	Responsibility
Limited participation of stakeholders inside and outside of WHO	Other competing priorities, funding limitations and lack of steering by senior management	Early engagement with needed partners and co-ownership of priorities; priorities should be included in partners' routine work programme; successful collaboration with IHR capacity assessment, development and maintenance and preparedness team; secure senior management involvement.	to be determined once funding is in place
Health security could dominate the EPHF agenda and discourse	IHR and Global Health Security Agenda have secured strong political involvement	Co-develop work programme with the IHR group; participate in joint external evaluation missions; influence health systems input to relevant discussions at all three levels of WHO.	to be determined once funding is in place
Limited resources	EPHF has failed to secure programme budget or external funding/ partnerships	Inclusion of EPHF in programme budget; piggyback on funded complementary programmes; secure external funding by creating budget space.	to be determined once funding is in place

Annex 2. Main features of the essential public health functions lists worldwide

Table A2.1. Essential public health functions in regions of the World Health Organization

Essential public health functions, WHO (European Region, 1998)	Essential public health functions, CDC, CLAISS and PAHO (Americas Region, 2001)	Essential public health functions, WHO (Western Pacific Region, 2000) ^a	Essential public health functions, WHO (Eastern Mediterranean Region, 2013)	Essential public health operations, WHO (European Region, 2007–2014)
1. Assessment, analysis, and communication of population health needs and community expectations 2. Protection of the environment (safe water, food quality and safety, sewerage, drainage, waste disposal, hazardous substance control) 3. Health promotion (community involvement in health, information and education for health and life skill enhancement) 4. Prevention, surveillance and control of communicable diseases (immunization, disease outbreak control, disease surveillance) 5. Legislation and regulations related to public health 6. Occupational health 7. Public health services (including school health, laboratory services, emergency disaster services) 8. Public health management (international collaboration, health policy, planning and management, use of scientific evidence, research) 9. Care of vulnerable and high-risk populations (maternal health care, family planning, infant and child care)	1. Health situation monitoring and analysis 2. Surveillance, research and control of the risks and threats to public health 3. Health promotion 4. Social participation in health 5. Development of policies and institutional capacity for public health planning and management 6. Strengthening of public health regulation and enforcement capacity 7. Evaluation and promotion of equitable access to necessary health services 8. Human resources development and training in public health 9. Quality assurance in personal and population-based health services 10. Research in public health 11. Reduction of the impact of emergencies and disasters on health	1. Health situation monitoring and analysis 2. Epidemiological surveillance/disease prevention and control 3. Development of policies and planning in public health 4. Strategic management of health systems and services for population health gain 5. Regulation and enforcement to protect public health 6. Human resources development and planning in public health 7. Health promotion, social participation and empowerment 8. Quality assurance in personal and population-based health services 9. Research, development and implementation of innovative public health solutions	1. Surveillance of population health and well-being 2. Preparedness and public health response to disease outbreaks, natural disasters and other emergencies 3. Health protection, including management of environmental, food, toxicological and occupational safety 4. Health promotion and disease prevention through population-based interventions, including action to address social determinants and health inequity 5. Effective health governance, public health legislation, financing and institutional support 6. Sufficient and competent workforce for effective public health delivery 7. Communication and social mobilization for health 8. Public health research to inform and influence policy and practice	1. Monitoring, evaluation and analysis of health status 2. Monitoring and response to health hazards and emergencies 3. Health protection, including environmental, occupational, food safety and others 4. Health promotion, including action to address social determinants and health inequity 5. Disease prevention, including early detection of illness 6. Governance for health and well-being 7. Sufficient and competent public health workforce 8. Sustainable organizational structures and financing 9. Information, communication and social mobilization for health 10. Public health research to inform policy and practice

^aThe list of the Western Pacific region was also used as a basis for Sri Lanka's formulation of the essential public health functions, although this country added a tenth function for emergency preparedness. CDC: Centers for Disease Control and Prevention; CLAISS: Centro Latinoamericano de Investigación en Sistemas de Salud; PAHO: Pan American Health Organization; WHO: World Health Organization.

Table A2.2. Formulations of essential public health functions (or similar) from other global actors and individual countries

Essential public health services, CDC (USA, 1994)	Core public health functions, NPHP (Australia, 2000)	Scope of modern public health system, National Health Service (UK, 2001)	Essential public health functions, World Bank (India, 2004)
1. Monitoring, evaluation, and analysis of health status 2. Diagnosing and investigating health problems and health hazards in the community 3. Informing, educating, and empowering people about health issues 4. Mobilizing community partnerships to identify and solve health problems 5. Developing policies and plans that support individual and community health efforts 6. Enforcing laws and regulations that protect health and ensure safety 7. Linking people to needed personal health services and assure the provision of health care when otherwise unavailable 8. Assuring a competent public and personal health care workforce 9. Evaluating effectiveness, accessibility, and quality of personal and population-based health services 10. Searching for new insights and innovative solutions to health problems	1. Health surveillance, monitoring, and analysis 2. Preventing and controlling communicable and noncommunicable diseases and injuries through risk factor reduction, education, screening, immunization, and other interventions 3. Promoting and supporting healthy lifestyles and behaviours among individuals, families, communities, and the wider society 4. Promoting, developing, and supporting healthy public policy, including legislation, regulation, and fiscal measures 5. Planning, funding, managing, and evaluating health gain and capacity building programs designed to achieve measurable improvements in health status and to strengthen skills, competencies, systems, and infrastructure 6. Strengthening communities and building social capital through consultation, participation, and empowerment 7. Promoting, developing, supporting, and initiating actions that ensure safe and healthy environments 8. Promoting, developing, and supporting healthy growth and development throughout all life stages 9. Promoting, developing, and supporting actions to improve the health status of Aboriginal and Torres Strait Islanders	1. Health surveillance, monitoring, and analysis 2. Investigating disease outbreaks, epidemics, and risks to health 3. Establishing, designing, and managing health promotion and disease prevention programs 4. Enabling and empowering communities and citizens to promote health and reduce inequalities 5. Creating and sustaining cross-governmental and intersectoral partnerships to improve health and reduce inequalities 6. Ensuring compliance with regulations and laws to protect and promote health 7. Developing and maintaining a well-educated and trained, multidisciplinary public health workforce 8. Ensuring the effective performance of NHS services to meet goals in improving health, preventing disease, and reducing inequalities 9. Researching, developing, evaluating, and innovating 10. Ensuring the quality of the public health function	1. Health situation monitoring and analysis 2. Epidemiological surveillance/disease prevention and control 3. Health promotion 4. Regulation and enforcement in public health 5. Social participation and empowerment 6. Development of policies and planning in public health and steering role of the Ministry of Health and Family Welfare 7. Evaluation and promotion of equitable access to health services 8. Human resource development and training in public health 9. Quality assurance in personal and population-based health services 10. Research, development, and implementation of innovative public health solutions 11. Management capacity to organize health systems and services in public health 12. Reduction of the impact of emergencies and disasters on health

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Table A2.2. Formulations of essential public health functions (or similar) from other global actors and individual countries *(continued)*

Obligatory public health functions, Ministry of Health (Indonesia, 2004)	Core functions framework, Ministry of Health (British Columbia, 2005)	Essential public health functions, Sistema Único de Saúde (Brazil, 2006)	Core public health functions, Public Health Clinical Network (New Zealand, 2011)
1. Basic health services 2. Community nutrition 3. Referral and supporting services 4. Communicable disease control 5. Environmental health and sanitation 6. Health promotion 7. Prevention and management of narcotics and substance abuse	Core programmes 1. Health improvement 2. Disease, injury and disability prevention 3. Environmental health 4. Health emergency management Public health strategies 1. Health promotion 2. Health protection 3. Preventive interventions 4. Health assessment and disease surveillance Systems capacity 1. Health information system 2. Quality management capacity Lenses 1. Population lens 2. Inequality lens	1. Monitoring, analysis, and evaluation of health situation in the state 2. Surveillance, investigation and control of risks and harms to health 3. Health promotion 4. Social participation in health 5. Policy development and institutional capacity for planning and public management of health 6. Capacity for regulation, oversight, control and audit in health 7. Promotion and guarantee of universal and equitable access to health services 8. Human resources management, development and formation 9. Promotion and guarantee of quality in health services 10. Research and technology incorporation in health 11. Coordination of the regionalization and decentralization process in health	1. Surveillance and assessment of the population's health and of health hazards in the community 2. Public health capacity development: ensuring the effectiveness and efficiency of the services 3. Health promotion: enabling people to increase control over and improve their health 4. Health protection: protecting communities against public health hazards 5. Preventive interventions: population programmes delivered to individuals

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Table A2.2. Formulations of essential public health functions (or similar) from other global actors and individual countries (*concluded*)

Essential functions of public health, Israeli Association of Public Health Physicians (Israel, 2012)	Essential public health functions in Mozambique and Botswana (CDC Global Health, 2012)	Domains of public health capacity, European Commission (Europe, 2014)	Essential public health services, Government of China (2015) ^a
1. Leadership in public health policy and management 2. Monitoring and evaluation of population health 3. Evaluation of efficiency, effectiveness and quality of health services 4. Environmental health protection 5. Research 6. Health promotion and disease prevention 7. Preparedness for and mitigation of public health emergencies 8. Development and training of public health workforce 9. Partnerships to promote knowledge, coordination and optimal use of resources 10. Public health legislation, control and enforcement	1. Monitoring health status to identify community health problems 2. Diagnose and investigate health problems and health hazards in the community 3. Inform, educate and empower people about health issues 4. Enforce laws and regulations that protect health and ensure safety 5. Mobilize community partnerships to identify and solve health problems 6. Develop policies and plans that support individual and community health efforts 7. Link people to personal health services 8. Assure a competent health workforce 9. Evaluate and assure effectiveness, accessibility and quality of preventive health services 10. Research for new insights and innovative solutions to health problems 11. Disaster preparedness	1. Leadership and governance 2. Organizational structures 3. Financial resources 4. Workforce 5. Partnerships 6. Knowledge development	1. Establishment of health records for all citizens 2. Health education 3. Children's health management (0–6 years old) 4. Maternal health management 5. Vaccination 6. Reporting and handling of infectious diseases and public health emergencies 7. Health management for elderly people 8. Health management for patients with hypertension 9. Health management for patients with type 2 diabetes 10. Management for patients with severe mental illness 11. Health supervision and management 12. Traditional Chinese medicine management 13. Tuberculosis management

^aLatest revision (prior lists date from 2011, 2009 and pre-2009).

CDC: Centers for Disease Control and Prevention; NPHP: National Public Health Partnership; UK: United Kingdom; USA: United States of America.

Table A2.3. Key features of selected assessment tools based on essential public health functions, operations and services

	Essential public health services, CDC (USA)	Essential public health functions, CDC, CLAISS, and PAHO (Latin America, Caribbean)	Core public health functions, NPHP (Australia)	Essential public health functions, WHO Western Pacific Region
Assessment tools based on framework (period of assessment)	National Public Health Performance Standards (3 versions from 2002 to present)	Instrument for Performance Measurement of Essential Public Health Functions (2000–2007)	Australian Core Functions of Public Health Survey (2004)	Case-study assessment tool (2000–2003, 2006)
Description of analytical and methodological approach	Performance standards; state/county conferences between relevant public health partners, who discuss performance of EPHS according to the assessment instrument and provide consensus responses	Questionnaire covering horizontal functions and capacities, but not vertical programmes. Multiple assessments carried out by country teams, including national and subnational governments and partners as well as international facilitators, who formulate consensus responses	Cross-sectional surveys and semistructured key informant interviews with public health practitioners, around public health practices described in NPHP document. Assessment carried out only once by an ad-hoc team	Structured, descriptive, case-study approach, carried out by a WHO country team in collaboration with national and regional health authorities to provide consensus responses. Each country devised its own methodological approach
Geographical scope	State and local public health systems and public health governing entities	Member States of PAHO Region, with adaptations for national, state and local health departments	Subnational, rural region	Member States of Western Pacific Region
Number and description of items and/or subitems	Both local and state tools are divided by EPHS, with 2–4 model standards each. Assessment tool includes discussion questions, a limited number (2–3) of scoring prompts, and discussion and summary notes. The governance tool contains definitions of the EPHS and a limited number of scoring prompts	Approximately 5 main indicators per EPHF, with 15–25 measures and submeasures corresponding to each indicator	A total of 79 items divided by 9 core functions	51 component tasks, divided by EPHF. Each task is broken down into items and subitems, including: description of service and system responsibilities, workforce and practice resources, and organizational issues (linkages and relationships). Using this basic template, country teams devised their own assessment methodology and questionnaires
Scoring system	5 scores: no activity, minimal, moderate, significant, optimal	Questions on measures and submeasures elicit a score of 1 (yes) or 0 (no); final score for each indicator is the average corresponding to the measures	4 possible scores: 2 (practice is always or usually carried out), 1 (sometimes undertaken), 0 (never or seldom performed), and ? (unable to answer due to lack of information). Respondents' individual score assignments are calculated as an average for final score	Fiji: Likert scale 1–5; Malaysia: scale of 1–10; Vietnam: no formal scoring system; Sri Lanka: scale of 0–5
Locations where tool has been applied	1 500 + assessments across the United States	41 countries and subnational regions pertaining to PAHO	21 rural health services in Western Australia	Fiji, Malaysia, Vietnam (in the main study period) and Sri Lanka (2006)

	Essential public health services, CDC (USA)	Essential public health functions, CDC, CLAISS, and PAHO (Latin America, Caribbean)	Core public health functions, NPHP (Australia)	Essential public health functions, WHO Western Pacific Region
Formal linkages and applications in other policy or non-policy settings (educational, regulatory, etc.)	Linked with national strategy on strengthening public health infrastructure (Healthy People 2020), Public Health Department Accreditation Board, state legislation and workforce development (through the Core Competencies for Public Health Professionals)	Linked to national health strategies and workforce development to varying degrees throughout the region	None; tool was created ad hoc for one study	No significant linkages identified
Description of supportive and/or follow-up resources	Wide variety of resources, including training resources for evaluators, implementation guides, and policy and planning tools	Some resources for implementing the assessment tool from PAHO; also used as a basis for a World Bank e-course	None	None

(continued on next page)

Table A2.3. Key features of selected assessment tools based on essential public health functions, operations and services (concluded)

	Essential public health functions, World Bank (India)	Essential public health functions, CDC (Mozambique and Botswana)	Essential public health functions, WHO Eastern Mediterranean Region	Essential public health operations, WHO European Region	Domains of public health capacity, European Commission (Europe)
Assessment tools based on framework (period)	Indian Public Health System Assessment (2004)	Essential Public Health Functions District Level Assessment (2012)	WHO-guided assessment: Essential public health functions for the Eastern Mediterranean Region (2013–present)	WHO self-assessment of the essential public health operations, 2007–present (3 versions)	Public Health Capacity Assessment Tool (2013–2014)
Description of analytical and methodological approach	Adaptation of questionnaire from PAHO, US and Western Pacific models, to include 12 EPHF plus a section on organization. 2–4 questionnaires per geographical level, eliciting quantitative and qualitative responses from key informants in different professional categories	Self-audit and feedback approach. CDC-funded pilot project, in conjunction with Johns Hopkins University and Johns Hopkins Program in Education in Gynecology and Obstetrics, to adapt EPHF approach to low- and middle-income country context. Global health actors guided national ministries of health in designing EPHF list and tool, in a context of health system decentralization, to assist district health officers in improving local services.	In-depth, qualitative questionnaire on both horizontal and vertical aspects of public health practice; items based on recommendations from WHO guidelines and topic-specific sources. Assessment carried out in coordination with national health authorities, WHO team, and international consultants, in policy workshops with key stakeholders	Highly detailed questionnaire on both horizontal and vertical aspects of public health practice, with items based on WHO guidelines and topic-specific sources. Self-assessment by national health authorities, with some support from WHO consultants. Recommended methodology is an assessment lasting several months, with an oversight committee made up of key partners, a core secretariat to coordinate work and specialized working teams to cover each operation. Web-based tool available	EU-funded study to map public health capacity in member states. Questionnaire based on conceptual framework; one key expert was identified for each country to lead national assessments with support of literature and 6–10-person focus groups. Survey results analysed by main research team using descriptive statistics and country-aggregated data, then validated by national policy-makers and experts
Geographical scope	National, state, and district level	District level	Member states of Eastern Mediterranean Region	Member states of European Region	EU member states
Number and description of items and/or subitems	Each section of the questionnaire includes ~3–6 main indicators, with a varying number (~4–8) of subitems	4 level questionnaire (full document not available), requiring 90–140 minutes for completion	4 level questionnaire: Level 1, 8 EPHF; Level 2, 2–4 sections per EPHF; Level 3, 2–6 subitems per section; Level 4, detailed table eliciting specific quantitative and qualitative data	4 level questionnaire: Level 1, 10 EPHO; Level 2, 2–4 sections per EPHO; Level 3, 5–10 subitems per section; Level 4, detailed tables eliciting specific quantitative and qualitative data	3 level questionnaire: Level 1, domains of public health capacity; Level 2, 1–5 items per domain (21 subdomains); Level 3, 5–10 indicators per subdomain (128 total)
Scoring system	Questions on items and subitems elicit a score of 1 (yes) or 0 (no); final score for each indicator is the average score from all respondents' answers to subitems,	Score on the extent to which the function was being performed: 0 (not at all), 1 (partially), 2 (fully)	None, descriptive analysis	Ad-hoc 0–10 scoring system based on level of EPHO performance: 0 (unable to evaluate), 1 (no activity), 2 (rudimentary work), 3 (policy commitment to improve, but no practical developments), 4 (some	1–6 Likert scale

	Essential public health functions, World Bank (India)	Essential public health functions, CDC (Mozambique and Botswana)	Essential public health functions, WHO Eastern Mediterranean Region	Essential public health operations, WHO European Region	Domains of public health capacity, European Commission (Europe)
	expressed as a decimal (e.g., 0.57)			antecedents for policy improvements), 5 (existing conceptual framework), 6 (specific experience and evidence on how to improve performance), 7 (reasonably acceptable level), 8 (solid and well-developed operation), 9 (particularly effective), 10 (excellent, best practice)	
Locations where tool has been applied	At the national level in India, and at state and community levels in Karnataka	Mozambique and Botswana	Qatar and Morocco, with other WHO member states in the Eastern Mediterranean also showing interest	Since 2007, some version of the EPHO tool used in at least 20 countries in South East Europe and Central Asia	25 EU member states
Formal linkages and applications in other policy or non-policy settings (educational, regulatory, etc.)	Assessment informed a World Bank initiative, the Karnataka Health Systems Project, aimed at improving EPHF throughout the state	None identified	None identified	Well-integrated into WHO Regional Office's policy documents and guidelines, particularly the European Action Plan on Public Health Capacities and Services. Also a key source for work on developing a European Public Health Curriculum (ASPHER)	None identified
Description of supportive and/or follow-up resources	Technical assistance from World Bank health policy team; over US\$ 200 million in credits provided to state health system		Subitems within questionnaire contain links to WHO policy guides, making the assessment tool a kind of clearing house for WHO resources	A variety of tools have been created in the last decade, including toolkits for implementation, and other WHO guidelines are integrated as references within the questionnaire itself. A web-based tool has been planned to allow customized partial assessments	None identified

ASPHER: Association of Schools of Public Health in the European Region; CDC: Centers for Disease Control and Prevention; CLAISS: Centro Latinoamericano de Investigación en Sistemas de Salud; EPHF: essential public health functions; EPHO: essential public health operations; EPHS: essential public health services; EU: European Union; NPHP: National Public Health Partnership; PAHO: Pan American Health Organization; USA: United States of America; WHO: World Health Organization.



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