

Reviews and Meta-Analysis

Public health and health promotion capacity at national and regional level: a review of conceptual frameworks

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Significance for public health

As the concept of public health capacities is increasingly debated across countries and national/ international organizations, there is no consensus on the main dimensions of public health capacity. This paper therefore provides a rigorous review of currently existing frameworks, which describe public health capacities at the national or regional level. The main objective is to highlight commonalities among these frameworks, and propose a country-level framework which integrates all reoccurring dimensions. Such a comparison can yield vital information on those dimensions for public health capacities, which are common across all frameworks, and hence could be considered indispensable, irrespective of their context or geographic origin. As such, this review and the subsequent presentation of a conceptual framework is targeted at academic researchers and policy makers, who are interested in setting up a capacity mapping process and who are looking for concepts and frameworks on which they can base their work.

Abstract

The concept of capacity building for public health has gained much attention during the last decade. National as well as international organizations increasingly focus their efforts on capacity building to improve performance in the health sector. During the past two decades, a variety of conceptual frameworks have been developed which describe relevant dimensions for public health capacity. Notably, these frameworks differ in design and conceptualization. This paper therefore reviews the existing conceptual frameworks and integrates them into one framework, which contains the most relevant dimensions for public health capacity at the country- or regional level. A comprehensive literature search was performed to identify frameworks addressing public health capacity building at the national or regional level. We content-analysed these frameworks to identify the core dimensions of public health capacity. The dimensions were subsequently synthesized into a set of thematic areas to construct a conceptual framework which describes the most relevant dimensions for capacities at the national- or regional level. The systematic review resulted in the identification of seven core domains for public health capacity: resources, organizational structures, workforce, partnerships, leadership and governance, knowledge development and country specific context. Accordingly, these dimensions were used to construct a framework, which describes these core domains more in detail. Our research shows that although there is no generally agreed-upon model of public health capacity, a number of key domains for public health and health promotion capacity are consistently recurring in existing frameworks, regardless of their geographical location or thematic area. As only little work on the core concepts of public health

capacities has yet taken place, this study adds value to the discourse by identifying these consistencies across existing frameworks and by synthesising them into a new framework. The framework proposed in this paper can act as a theoretical guide for academic researchers and institutions to set up their own public health capacity assessment.

Introduction

In 2012, the Regional Committee of the World Health Organization Regional Office for Europe (WHO/EURO) adapted its European Action Plan for Strengthening Public Health Capacities and Services.¹ The action plan has been referred to as a key pillar for *Health 2020*, WHO/EURO's general strategic framework for the decade to come.² By adopting the Action Plan, the member states of the WHO Regional Office for Europe made an explicit commitment towards strengthening their public health capacities through the implementation and securitization of a set of ten Essential Public Health Operations.² The need and obligation for building public health capacity in Europe has also been addressed by the European Union's (EU) Health Strategy 2008-2013, which identified the need for greater capacity in public health by strengthening training and public health structures in the member states.³ In accordance with this strategy, the European Commission's General Directorate for Health and Consumers (DG SANCO) initiated a review of capacities for public health in its respective Member States.⁴ Capacity building also continues to remain an important item under the new EU Health For Growth Programme (2014-2020), which aims at supporting national efforts to strengthen capacities in various areas of their (public) health systems.⁵

The increased focus on public health capacity strengthening by European institutions and organizations is not surprising, as the concept of capacity building for public health has gained much global attention over the past decade. International organizations, Ministries of Health as well as several research projects increasingly include capacity building in their activities in order to enhance impact and performance in their programmes.⁶ The emergence of the concept coincides with a shift of focus from directly trying to influence the health of the population towards enabling systems and networks to conducting public health actions in a self-determined and sustainable manner. The underlying idea is that enhancing the capacity of a system to prolong and multiply health effects represents an added value to the health outcomes achieved by singular interventions.^{6,7}

This paper provides a rigorous review of currently existing frameworks, to highlight commonalities, and to propose a country-level framework which integrates all reoccurring dimensions.

Principles of capacity building in public health

Hawe *et al.* define capacity building in the health sector as an approach to the *development of sustainable skills, organizational structures, resources and commitment to health improvement in health and other sectors to prolong and multiply health gains many times over*.⁸ As the definition indicates, capacity building is not aimed at directly improving the population's health status, but at ensuring that the conditions are in place to achieve health improvement and to ensure that this can be multiplied and sustained over time, independent of external events.

One of the key principles of capacity building is that it should acknowledge pre-existing capacities, and use well-planned and integrated strategies to respond to context. Any attempt to build public health capacity thus requires a prior analysis to identify which capacities already exist, how well they are developed, and how well they link together as a system. This process, commonly referred to as *capacity mapping*, involves the systematic assessment of existing capacities based on a conceptual framework. Notably, such a capacity mapping process does not provide answers about the performance of a system; it merely contains an evaluation of the system's *ability* to fulfil its specific functions within a set of given resource constraints. Whether the specific objectives of a health system are ultimately achieved needs to be left to conventional health system performance assessments. Further, capacity mapping should also be distinguished from assessing public health *competencies*. While there is a wealth of literature on strengthening *competencies* for public health and health promotion, these efforts are concerned with identifying and describing the knowledge and skills that are required of public health professionals, as a basis to guide professional training.^{9,10} In contrast, public health capacity is a broader concept which looks at the characteristics of the system for public health as a whole.

Strengthening capacities for public health was first acknowledged as an important approach in the late 1990s. An early publication on the issue was an article by Hawe *et al.*, who proposed a set of indicators and checklists for the planning and evaluation of capacity building in health promotion.⁸ The following decade witnessed various attempts to conceptualize and assess capacities for public health and health promotion by scholars based in Europe, North America, Australia, Korea and Japan.¹¹ However, all these initiatives developed their own conceptual frameworks and means of operationalization based on their specific context and content.

Methods

To obtain an overview of current public health capacity frameworks, we performed a comprehensive literature review, which involved a search of the electronic journal databases Pubmed and Science Direct. Both Pubmed and Science Direct were considered appropriate for conducting the review as they both constitute wide-ranging sources of scientific information for public health and health system related research. Using the keywords *public health*, *capacity*, *capacity building*, *capacity framework*, *capacity tool* and *capacity mapping* in different combinations, we were able to acquire a comprehensive overview of the contemporary literature on the issue. We decided not to apply the Pubmed-MeSH term *capacity building* in our search-strategy, as capacity here clearly referred to organizational development at the micro-level. As a result of our search, more than 100 primary and secondary literature publications were retrieved. Reference lists of the identified articles were checked for additional publications, and personal contacts were used as additional information sources to identify further publi-

cations. Relevant publications for this review were selected on the basis of the abstracts or summaries, using the following inclusion criteria: i) the document should describe one or more framework(s) for public health capacity at the national or regional level, ii) the *outcome* of the framework should be public health *capacity*, as distinct from public health *performance* or *competences*, iii) the document should be published or otherwise made publicly available after 1995 and iv) the documents should be published in English. Additional inclusion criteria on geographical scope or the status of a country (*e.g.* being a low-, middle- or high-income country) were not applied. The first two criteria aimed to exclude models and concepts that were only vaguely related to the issue, or that described capacities of individual organizations or local health agencies. The restriction to documents published after 1995 was meant to exclude frameworks or tools that had become out-date or that had been revised. The restriction to published studies available in English only was a practical consideration; however, we acknowledge that the limitation to published studies available in English may have led to the potential exclusion of frameworks in other languages.

Publications that met the inclusion criteria were further content-analysed to identify the dimensions of public health and health promotion capacity represented in the existing conceptual frameworks. The analysis of frameworks was primarily guided by an *interpretive synthesis* concept, as outlined by Dixon-Woods *et al.*¹² This mind-frame describes a process of aggregating existing theories, concepts and approaches in the literature to come to a universal outlook. More specifically, we applied a *thematic analysis* in this study as the guiding methodology for the synthesis of documents. This style of analysis is characterized by a clear identification of prominent themes and the subsequent re-organization of existing literature under these themes.¹² Accordingly, the dimensions from each identified framework were retrieved, summarized, and compared with each other to identify recurring dimensions across frameworks. For frameworks that assessed multiple levels of public health capacity (*e.g.* national, regional and local level), only the national and regional dimensions were included in the assessment. This was done in order to adhere to the public health systems-wide perspective of this review. To further integrate the findings, the dimensions from the different models bearing the same content were clustered under a set of thematic areas and were then used to construct a framework for public health capacities that describes the main dimensions at the country-level. This framework was presented and discussed in a focus group meeting on the issue, involving ten public health professionals from universities, international organisations and NGOs. Participants for this focus group were individually selected and invited based on their professional research experience on public health and health-care systems in Europe. The developed framework was presented to the focus group during a half-day meeting, and its members were asked to evaluate the accurateness and theoretical foundation of the framework, based on their personal experience. Any feedback and comments from the focus group members was documented and the framework was adjusted based on the statements provided. The framework was then sent to all focus-group members via email to receive additional commentary and to have participants ultimately validate it. Subsequent feedback on each of the dimensions was again taken up to fine-tune and finalize the framework.

Results

Our literature search enabled us to identify 11 publications which propose conceptual models for public health capacities.^{1,6,13-21} Many of these publications focus on capacities in the field of health promotion,

but some take a broader view and consider public health in general or more specific areas within public health practice (Table 1).^{1,6,13-21}

The presented frameworks have been largely developed in research institutions and public health agencies in Australia and North America, as well as by international organizations, such as WHO and its Regional Offices in South America and Europe. Among the capacity frameworks focusing on health promotion, the New South Wales health promotion capacity model has been applied both in Australia and Europe. It identifies three key action areas: *organisational development*, *workforce development*, and *resource allocation*. The model also identifies *leadership* and *partnerships* as further key elements of context.^{13,22}

Several of these components can also be found in other models. The dimensions of *professional development*, *sustainable financial and human resources*, *leadership* and *partnerships* are included in the health promotion capacity wheel developed by WHO, as well as in the

European Health Promotion Capacity Mapping Initiative.^{15,16} The latter also adds a *policy* and *governance* component, which refers to priority setting for health promotion and the integration of policies via a *joined-up* government. Other components are *program delivery*, *performance monitoring* and *evaluation* through well-established information and knowledge management systems. *National policies*, *sustainable resources* and *structures*, and *knowledge management* are also highlighted in the model of McLean *et al.*¹⁷ and in the HP Source model.¹⁸ The latter also emphasizes the importance of *research*, *graduate level education* and the *role of professional associations*.

The Pan American Health Organisation's model defined a set of eleven Essential Public Health Functions (EPHFs).¹⁹ These functions were defined as the set of conditions that improve public health practice and they include: i) monitoring, evaluation, and analysis of health status; ii) public health surveillance, research, and control of risks and threats to public health; iii) health promotion; iv) social participation

Table 1. Conceptual frameworks for public health and health promotion capacity.

Source	Title of framework	Components of capacity
Public health capacity at the national or regional level		
NSW Health Department (2001) ¹³	A framework for building capacity to improve health	Organisational development, workforce development, resource allocation, partnerships, leadership
La Fond <i>et al.</i> (2002) ⁶	Mapping capacity in the health sector: a conceptual framework	Health system level capacity (inputs): public/private composition and infrastructure, organizational structure of the public sector, health related laws, regulations and policies, information/communication systems, human resources, financial resources, history and culture, external environmental factors
Ontario Capacity Review Committee (2005) ¹⁴	Ontario's public health capacity	Health governance and structure, funding, system accountabilities, human resources, research and knowledge transfer and exchange
PAHO/WHO (2007) ¹⁹	Public health capacity in Latin America and the Caribbean	Workforce, information systems, financial resources, institutional and organizational capacity, technologies
WHO-EURO (2012) ¹	European action plan for strengthening public health capacities and services	Surveillance of population health and well-being, monitoring and response to health hazards and emergencies, health protection, health promotion, disease prevention, assuring governance for health, assuring a sufficient and competent workforce, assuring sustainable organizational structures and financing, advocacy, communication and social mobilization, public health research
Health promotion capacity at the national or regional level		
IUHPE (2002) ¹⁸	HP Source. IUHPE. HP-Source: the health promotion discovery tool.	Policy, tackling health inequalities, governance and accountability, local strategies, research and development, capacity of health promotion/public health function
Catford (2005) ¹⁵	Health promotion capacity wheel	National leadership, joined up government, program delivery, national partnerships, professional development, performance monitoring, sustainable financing, national policies and plans
McLean <i>et al.</i> (2005) ¹⁷	Action for learning - learning from action	Environmental level: political will, public opinion, supportive organizations, ideas and other resources
WHO – EURO (2005) ¹⁶	European health promotion capacity mapping initiative	Policy integration, strategies and partnership, actions matching social and economic conditions, national, regional and local resources (human, technical and financial), development of civil society entities relevant to health, information and knowledge management systems, multidisciplinary research and know-how development Other specific areas of public health
Alwan <i>et al.</i> (2001) ²¹	Assessment of national capacity for non-communicable disease prevention and control	Health indicators, policies and operational plans, legislation, information systems and statistics, structure and financing of prevention and treatment activities, availability of national guidelines, nature of available services, human resources, role of NGOs, capacity for monitoring and evaluating, drug availability
Hu <i>et al.</i> (2006) ²⁰	Public health emergency response capacity	Systems level: policy, laws and regulations, management and accountability, resources, processes

in health; v) development of policies and institutional capacity for planning and management in public health; vi) strengthening of institutional capacity for regulation and enforcement in public health; vii) evaluation and promotion of equitable access to necessary health services; viii) human resources development and training in public health; ix) quality assurance, personal and population-based health services; x) public health research; and xi) reducing the impact of emergencies and disasters in health.¹⁹ Similarly, WHO/EURO's 10 essential public health operations (EPHOs) also highlight ten essential capacity-areas that should be addressed at the national level.¹ These European Essential Public Health *Operations* largely coincide with PAHO's Essential Public Health *Functions*, which indicates trans-organisational networking and learning with regards to capacities for public health.

In addition to the more holistic models, some conceptual capacity frameworks focus on specific areas of public health, such as emergency response or prevention and control of non-communicable diseases.^{20,21} Despite their specificity, these frameworks largely reflect the same capacity dimensions as presented in the broader models, including *policies and political climate, workforce development, organisational development, infrastructure, resources, leadership, partnerships as well as intelligence, project management quality, and community development*. As the above review indicates, several dimensions of public health capacity are recurrent across the various models proposed in the literature. Most frameworks showed a large degree of overlap in six areas, which included i) capacities for adequate information and monitoring systems, ii) a knowledgeable and skilled public health workforce, iii) capacity for research and development, iv) sufficient resources and infrastructures, v) collaboration between various actors, vi) adequate policy, planning and management systems, and vii) country specific context. However, the conceptual and operational definitions of these components differed and their applications had not been consistent across the different frameworks. A clustering of the dimensions with similar content yielded seven key domains of public health capacity (Table 2).

The seven domains can be represented in a framework, showing their joint contribution to public health capacity (Figure 1). As the fig-

ure shows, each of the domains can be further broken down into a number of sub-components for public health capacity, which were also identified as recurring elements in the identified frameworks and the literature. These sub-components have widely been used in the existing frameworks as starting points to reflect on the public health capacity in a given country. As such, they provide more in depth insights into the different dimensions.

Discussion

Although the presented framework is relatively straightforward, some points should be further explored and discussed. Firstly, the interaction between the different domains and their relative contribution to capacity is not yet known. As pointed out by Bagley and Lin, some key concepts (*e.g.*, workforce) are likely to have a higher impact on the overall capacity than others.²³ While all frameworks suggested separate dimensions for public health capacity, they are in reality highly interrelated and mutually influential. For instance, strong *governance* and *resource* capacities for public health are likely to strengthen all other dimensions as well. While it would certainly be important to know more about the dynamic interaction between the different dimensions, this was beyond the scope of this review. A further testing of the dimensions and exploring their linkages as well as investigating the *weight* of each dimension with regards to its significance for the whole system would certainly be very useful. Secondly, it should be noted that this framework was primarily intended to assess the capacity for public health at national or regional level. Several scholars have suggested that the capacities of local communities should also be considered to evaluate national public health capacity.^{7,21} This argument is very relevant, as much of the provision of services plays out at the local level, and mapping capacities at this level should not be neglected. Nevertheless, it is also to a large extent the capacities at the systems-level that determine local provision - and this study focussed in particular on these macro-level aspects.

Table 2. Clustering of public health capacity dimensions.

Theme	Description	Exact wordings from frameworks
Organisational structure	The infrastructural ability of the system to contribute to goals of public health	Organizational capacity; program delivery structures; system infrastructure; processes
Resources	The allocation and provision of human and financial resources necessary to carry out public health activities	Financial resources; sustainable financing; resourcing; creating resources
Partnerships	Collaboration between organisations for effective public health practice	Partnerships; networks, joined-up government
Workforce	Qualified human resources with sufficient skills and knowledge; this also includes the availability of training options	Workforce development; professional development, individual knowledge and skills; human resources; knowledge transfer
Knowledge development	The knowledge base that provides information on the health of the population and that supports evidence-based public health policy and interventions at all levels	Performance monitoring; intelligence; ideas; research; education; knowledge development
Leadership and governance	The ability and willingness of governments to improve public health by developing and implementing effective public health policies and by expressing qualities in leaderships and strategic thinking	Leadership; governance; stewardship; commitment; strategic vision; policies; national policies and plans; joined up government; political climate; legislation; regulations; administrative capacity
Country specific context with relevance for public health	The political context and other characteristics of a country that may have an influence on public health policies and capacity building efforts.	External environment; specific national context; national structures

Research limitations

This research also had some limitations, which might have impacted on the quality of the presented findings. Firstly, the authors' decision to drop some of the items if they did not relate to the regional or national *systems* level should be discussed. Items were also dropped if we found them not to be reoccurring across frameworks. It is clear that by dropping these items, some potentially relevant elements may have been omitted in the final framework. Nevertheless, since a decision was made to develop a model that receives its strength and reliability from synthesizing recurring aspects, we decided to leave these items out. Another potential limitation can be attributed to the fact that some of the identified conceptual frameworks were likely influenced by each other during development. For instance, the presented frameworks of PAHO and WHO/EURO showed a large degree of similarity, and it is very likely that the PAHO framework has been used as a foundation for the development of the WHO/EURO framework. Our study did not consider these mutual influencing factors in the analysis – despite the

potential bias of having dimensions reoccur in different frameworks not because researchers have developed them but because researchers and policy makers copied them from each other. It also naturally follows from this, that many of the frameworks are guided by certain values or lenses, which are important drivers for the presentation of certain dimensions or not. The underlying values of the different frameworks have also not been considered by this assessment.

Conclusions

Developing strategies to strengthen public health capacity is not different from developing capacity building strategies in any other sector. The first step is to perform a mapping of the existing situation, upon which a plan or strategy can build. This means identifying which capacities already exist, how well they are developed, and how well they link together as a system. To perform such capacity mappings, international organizations and research institutions have developed

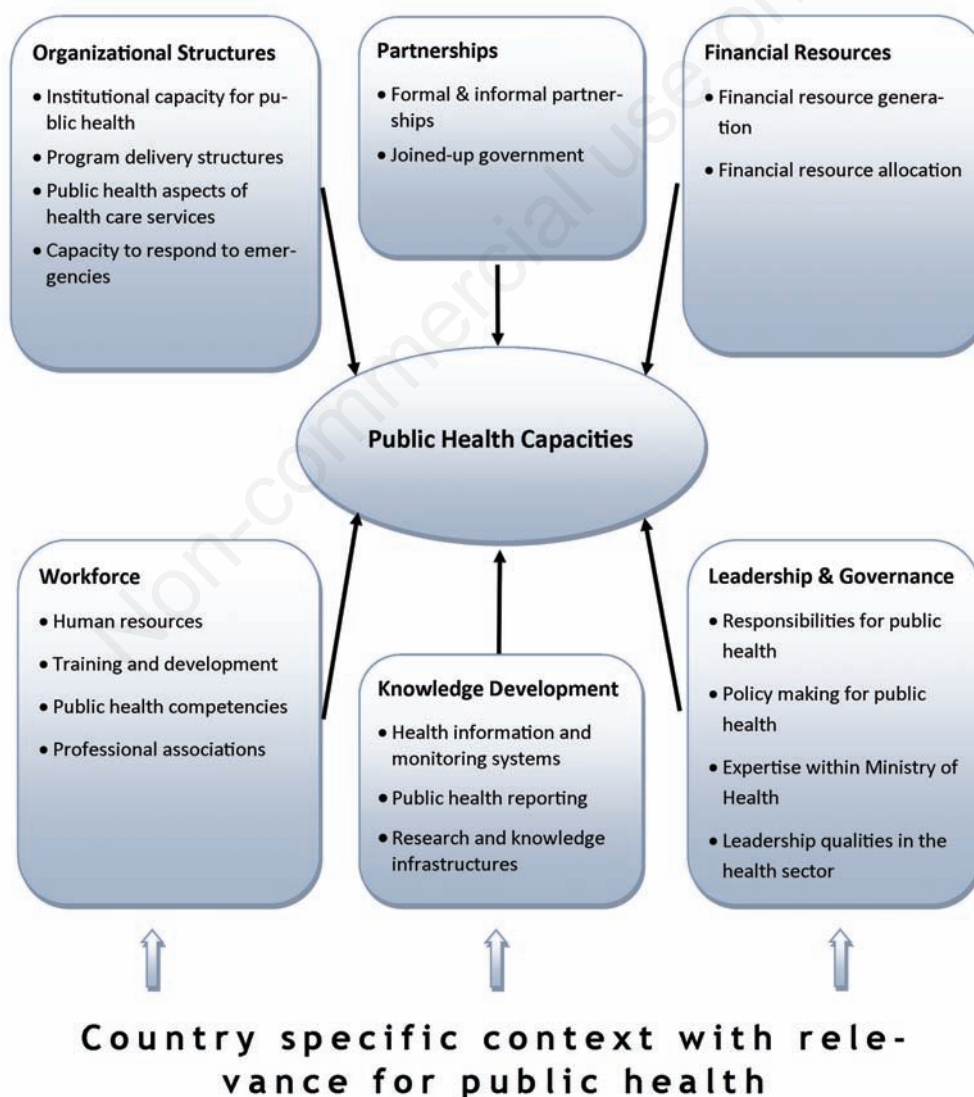


Figure 1. Country- level framework for public health capacities.

assessments of their own, based on conceptual frameworks suitable for their particular context. The present review brought these different theoretical approaches to public health capacity together and provided insights into their commonalities. The seven dimensions presented in this paper allow for an overall appraisal of the public health capacity at the national or regional-level in any given country. Despite some limitations of this research, we are convinced that the model proposed in this paper captures the main elements of public health and health promotion capacity and that it adds value to the discourse by highlighting those indispensable dimensions on which future public health capacity assessments could build.

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