TOWARDS A HEALTHCARE PERFORMANCE ASSESSMENT FRAMEWORK: A REVIEW

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ABSTRACT

Improving health is the fundamental goal of all health systems, and with an evident gap between the potential of the public health system and its performance, bettering the services that provide care is critical to achieving this goal. This gap creates a need to identify and understand what drives performance so as to be able to assess how the potential can be reached. Thus, this research investigates the key inputs into a performance assessment framework and develops a core set of performance dimensions that is inclusive of all the factors that affect performance.

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1. INTRODUCTION

Due to concerns regarding accountability and quality improvement strategies of health systems, as well as an increasing awareness of patient satisfaction, there has been a growing interest in the assessment of healthcare performance [1], [2]. Performance assessment helps in gaining an understanding of what drives performance, as well as which areas are performing above or below expectations, offering guidance on where to look for potential solutions and possible actions for improvement [3], [4]. It can therefore be used for the evaluation, and subsequent improvement of healthcare, thus initialising quality improvement activities [2], [5]. In the performance assessment process, measurement is a vital and necessary step, as it provides the information required for evaluation and decision making. Measurement allows for the comparison of how health systems or facilities are doing in contrast to the original targets so that opportunities for improvement can be identified [6].

Many frameworks aimed at contributing to the understanding of health systems, as well as the assessment of their performance, exist. In these frameworks, in order to successfully assess performance, indicators to track and measure are put in place to gain information about certain performance dimensions and their level of attainment. These indicators will provide information on how the performance dimensions and different goals are being met.

When constructing a performance assessment framework and deciding on which performance dimensions to include, it is clear that there are various differing views on how performance should be measured, and how a measurement system should be structured. Additionally, each framework defines a different set of dimensions along which to measure performance, adding to confusion on what exactly should be measured. The selection of which performance dimensions to include in a framework is very important, as these will determine the areas in which performance is measured, and thus the information available for assessing performance.

Simply including all the performance dimensions encountered in the literature will only over-burden the data collection process and complicate the assessment of the information gathered. There is already so much unnecessary data being collected, obstructing the proper flow and use of information [7]. The process of collecting all this data required large amounts of costly time and resources [7]. This creates a need to develop a list of only the relevant and necessary performance dimensions that can be used to garner a complete view of performance, while still being concise in order to reduce the burden of data collection. The aim of this paper is therefore to determine what is needed in a performance assessment framework, as well as to determine a core set of performance dimensions to be used.

The rest of this paper reviews various existing health system frameworks. These are then used to garner an understanding of what the ‘health system’ and ‘healthcare system’ is assumed to include. It then goes on to explore the goals of the health system, and what the improvement of their performance aims to achieve and investigates those factors that determine health. Lastly, the different performance dimensions are explored, with a core set being outlined.

2. METHODOLOGY

Documents published on performance frameworks, indicators, and dimensions were examined, along with documents published by or regarding the UK, Canada, Australia, the Commonwealth Fund, the World Health Organisation (WHO), and the Organisation for Economic Cooperation and Development (OECD) regarding their health system frameworks. These documents were gathered using basic strategies such as searching the official websites of the departments, ministries, or agencies of health of each country or organisation; checking the reference lists of selected documents and articles for any relevant articles; and lastly, electronic platforms such as Scopus and Google Scholar were used to identify performance frameworks, as well as doing a generic Internet search using the Google search engine.

Only recent sources regarding performance assessment were explored, especially those that were published after the World Health Report 2000. This is due to the increased interest in and attention given to developing a means to assess health system performance following the publication of this report. Only materials that dealt with the subject of study were included and seeing as the focus of this article is performance, only frameworks dealing with health system performance, and those health system frameworks that had a performance aspect to them were considered for this review.

3. REVIEW OF EXISTING CONCEPTUAL FRAMEWORKS

Many frameworks aimed at contributing to the understanding of health systems, as well as the assessment of their performance exist. There are a variety of different types of frameworks, but most important to this review are the health system and health system performance assessment (HSPA) frameworks. A health system framework aims to offer an overview of the healthcare system and therefore aims to act as a tool to describe it [8]. A HSPA framework assumes a certain health system structure but aims to specifically evaluate performance. Although health system frameworks may also be used for performance assessment, they generally will not clearly have specified how this should be done. In both types of framework, how they are used to conduct evaluation activities depends on the framework itself and how clearly it defines what "good" performance is [3]. As the focus of this paper is on performance, all frameworks with a performance aspect were considered, regardless of the type of framework. An overview of the commonly discussed frameworks is given in this section.

3.1 UK

In the UK, the *Performance Assessment Framework* (PAF) was created for the National Health Service (NHS) as a performance measurement system [9]. This framework was conceptually based on the balanced scorecard approach (BSC), and is aimed at providing a broader view of performance in the NHS [9], [10]. Basing the framework on the BSC approach means moving away from traditional financial performance measures and undertaking a wider range of indicators to represent a balanced view of NHS performance [11].

The PAF identified six dimensions of performance to achieve this balanced view, namely: (1) health improvement; (2) fair access; (3) effective delivery of appropriate healthcare; (4) efficiency; (5) patient/carer experience; and (6) health outcomes of NHS care [11]. These dimensions are shown in Figure 1, where the circular representation of the areas of performance is aimed at showing their inter-dependence [11].

The two main purposes of the PAF is to: (1) assist the NHS in both improving the health of the population, as well as providing improved care and outcomes for the people who use the health services; and (2) to assess how well the NHS is achieving this objective [11]. The framework was created to support the aspiration toward a high-quality health system. This aim is supported through focusing the framework on the delivery of clinically cost effective, appropriate, and timely health services to meet the needs of the population [11].

In order to provide support and provide ways to monitor the six dimensions of the framework, a set of performance indicators was introduced, called high level performance indicators (HLPI) [9]. The indicator sets, which were chosen based on the aim of each of the dimensions, are there to highlight any issues that may need to be explored or action that needs to be taken, they are not a direct measure of quality [9], [11]. Both the PAF and HLPIs were first published in 1998 and are used to benchmark the performance of local health authorities [11]. As new information and data becomes available the HLPIs are constantly being developed and improved [10].

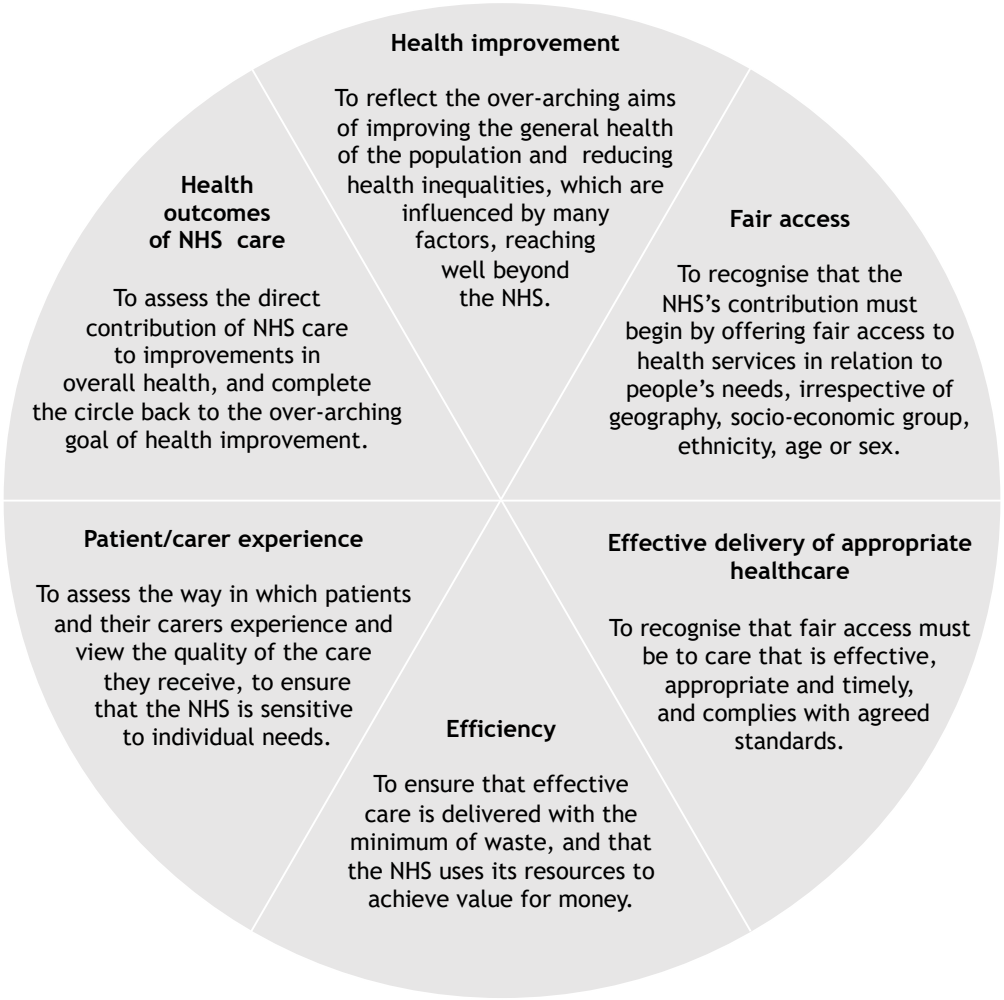

Figure 1 NHS Performance Assessment Framework [11]

3.2 Canada

The Canadian *Health Indicators* project was launched in 1999 and was based off the *Health Information Roadmap Initiative* [12], [13]. While the framework identifies important dimensions of health and health system performance for indicator development, it is important to note that it is not a health systems framework, but rather a framework used for classifying indicators for performance measurement. The goal of the framework is therefore to "identify and report on a set of indicators reflecting the health of Canadians and the health system" [12].

The *Health Indicator Framework* has four interconnected tiers representing the factors which have an influence on health, it is important to note that the tiers do not represent a hierarchy, but rather shows the relationship between the tiers and the impact each has on each other [12]. Dimensions along which indicators should be developed is suggested for each of the tiers. The tiers are as follows:

1) *Health status:* this tier represents the health and well-being of the Canadian population. The 4 ways in which health status can be measured, specified by this framework, include: well-being, health conditions, human function, and deaths [12];

2) *Non-medical determinants of health*: this reflects those factors that have an influence on the health of the population that isn't a result of the medical field, as well as, in some cases, when and how healthcare is used. These factors include: health behaviours, living and working conditions, personal resources, as well as environmental factors [12];
3) *Health system performance*: indicators in this tier measure various aspects in how well a health system is performing, and eight performance dimensions are defined: acceptability, accessibility, appropriateness, competence, continuity, effectiveness, efficiency, and safety [12];
4) *Community and health system characteristics*: this tier acknowledges the measures that provide useful contextual information but are not direct measures of health status or the quality of care. This includes the community, health system, and resources [12].

The final performance dimension identified is equity. Equity is not the listed in the health system performance tier and this is due to the fact that it is considered to span all dimensions of the framework, and is therefore included as an aspect the spans across all 4 of the tiers [14].

3.3 Australia

In February 2000, the National Health Performance Committee (NHPC) of Australia began to develop a new Australian health performance framework. The committee reviewed various existing frameworks for national reporting including Australian Institute of Health and Welfare conceptual framework for health, the United States' *Healthy People 2010*, the United Kingdom quality framework, and the Canadian Institute of Health Information framework. Following this review, it was decided that the framework developed by the Canadian Institute for Health Information (CIHI) as part of the Canadian Roadmap Initiative established in 1999 was to be used as a basis for the development of the Australian health performance framework [15].

It is important to note that the resulting framework is not a framework to model the health system, but rather one to provide structure as to how assess performance of the health system [15]. The framework was developed so it could be used to benchmark health system improvement, as well as provide information on the performance of the national health system [15].

As with the Canadian framework, the Australian framework consists of tiers, but only three tiers are represented in this framework:

1) *Health status and outcomes*: this tier proposed the following dimensions: health conditions, human function, life expectancy and wellbeing, and deaths. These dimensions aim to garner an understanding on the health of the population, and more specifically answer the following questions: "How healthy are Australians? Is it the same for everyone? Where is the most opportunity for improvement?" [15].
2) *Determinants of health*: the following factors are proposed as those that have an impact on the health status of the population: environmental factors, socioeconomic factors, community capacity, health behaviours, and person-related factors [15].
3) *Health system performance*: this tier encompasses the nine dimensions aimed at providing a better understanding on the performance of the health system. These dimensions are whether the health system is: effective, appropriate, efficient, responsive, accessible, safe, continuous, capable, and sustainable [15].

These three tiers represent the factors which have an influence on health, showing the relationship between the tiers and the impact each has on each other, and therefore the tiers do not represent a hierarchy. For each of the tiers, a number of dimensions are suggested along which indicators should be developed in order assess the performance of that tier to gain an understanding on the performance of a given tier. For each tier a question is posed, and the aim of the indicators developed for the dimensions should be to answer those questions, so a better understanding of the health system's performance can be gathered [15]. In this framework, one indicator may provide information for more than one of these dimensions [15].

Equity is also considered a measure of health system performance. In this framework it is integral to all three of the tiers, and therefore included as a dimension that spans across them using the question "is it the same for everyone?". [15]

3.4 The Commonwealth Fund

The Commonwealth Fund is a private foundation based in the United States, and was established in 1918 with the aim to "enhance the common good" [3], [16]. In trying to improve the performance of the healthcare system in the US, the Commission on a High Performance Health System was established [17]. The goal of this commission is to "promote a high performing healthcare system that achieves better access, improved quality, and greater efficiency, particularly for society's most vulnerable, including low-income people, the uninsured, minority Americans, young children, and elderly adults" [16].

In realising that the level of performance of the US healthcare system is not where it should be, the commission created the Framework for a High Performance Health System for the United States. This framework states that the goal of a healthcare system is "to help everyone, to the extent possible, lead long, healthy, and productive lives" [16].

In this framework, shown in Figure 2, four core goals are outlined:

1) High quality, safe care;
2) access to care for all people;
3) efficiency, high value care; and
4) system capacity to improve [16].

Each of these goals is made up of criteria that can be used to map indicators [3]. The commission defines what a high performance health system is, and sets targets to be tracked over time, as well as identifying and analysing any public policy or practice changes that need to be made on order to meet the targets that have been set [17].

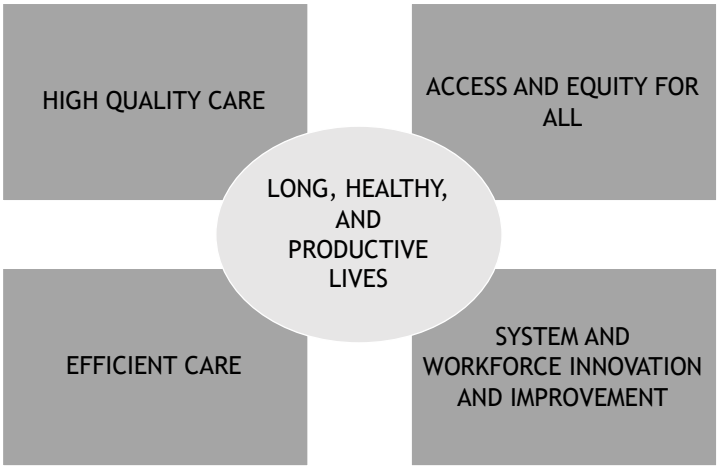

Figure 2 Framework for a High Performance Health System for the United States [16]

3.5 World Health Organisation

The WHO's framework assesses health system performance by relating the health system goals to its functions. By conceptualising performance in this way, the framework aims to aid in assessing performance, understanding the factors that contribute to and improve it, and as a result, allow better response to the needs and expectations of the people the health system serves [3], [7]. The framework for assessing health system performance was developed by Murray and Frenk, and subsequently used in the World Health Report 2000 to structure the statistical annexes [3], [18].

The framework begins by defining a health system and its boundaries. A 'health system' is defined as "comprising all the organisations, institutions and resources that are devoted to producing health actions", where 'health action' is defined as "any effort, whether personal healthcare, public health services or through intersectoral

initiatives, whose primary purpose is to improve health" [7]. Therefore, any organisation with the primary objective being to contribute to health is included in this definition, while actions that may have an impact on health but does not have health-related primary objective is excluded [3].

The framework then explores the goals of a health system. While improving health is identified as the main objective of a health system, the WHO goes further by defining three intrinsic goals. The framework states that in addition to the defining goal, the other two goals common to all systems is *responsiveness* of the system to the expectations of the population, and *fairness* in the financial contribution required to make the system work [18]. Explicitly stated, the three main goals for the health system are: health improvement, responsiveness, and fairness in financial contribution. These goals form the basis for assessing the performance of a health system, and the progress towards achieving them depends on how the functions of the health system are being carried out [7], [18].

For both health attainment and responsiveness, the average level of achievement as well as the inequalities in the distribution across different groups are considered, whereas for the third intrinsic goal, only distribution is considered [3], [18]. It is worth taking note that efficiency and equity are not explicitly mentioned in the list of intrinsic goals, however they are considered to be present amongst the goals. Efficiency is how well the goals are being achieved, and is therefore taken into account in the average attainment of each goal, while their distributions represents total equity of the health system[3], [18].

Once the goals had been identified, the functions of a health systems are defined in order to relate them to the goals, so that performance can be measured. The framework identifies four basic functions: financing, service provision, resource generation, and stewardship [7].

3.6 Organisation for Economic Cooperation and Development

The OECD's Health Care Quality Indicator (HCQI) Project was undertaken with the goal of developing a common set of indicators that can be used to assess the quality of healthcare being provided by any of the OECD member countries [10]. The authors of this framework use same definition of a health system as defined by the WHO, the framework therefore not only considers healthcare, but also includes all activities that "have a primary purpose of promoting, restoring or maintaining health" [3].

Although the framework (Figure 3) captures a broad perspective on all the factors influencing health, the specific focus of the HCQI project is on the quality of care, this focus is shown by the shaded area [10]. The framework is heavily based on the Institute of Medicine's national healthcare quality indicator framework developed in the USA, as well as the Canadian Health Indicator Framework [10]. The HCQI Framework has the 4 interconnected tiers, each influencing each other, with the causal pathways being represented in the figure by the arrows between them.

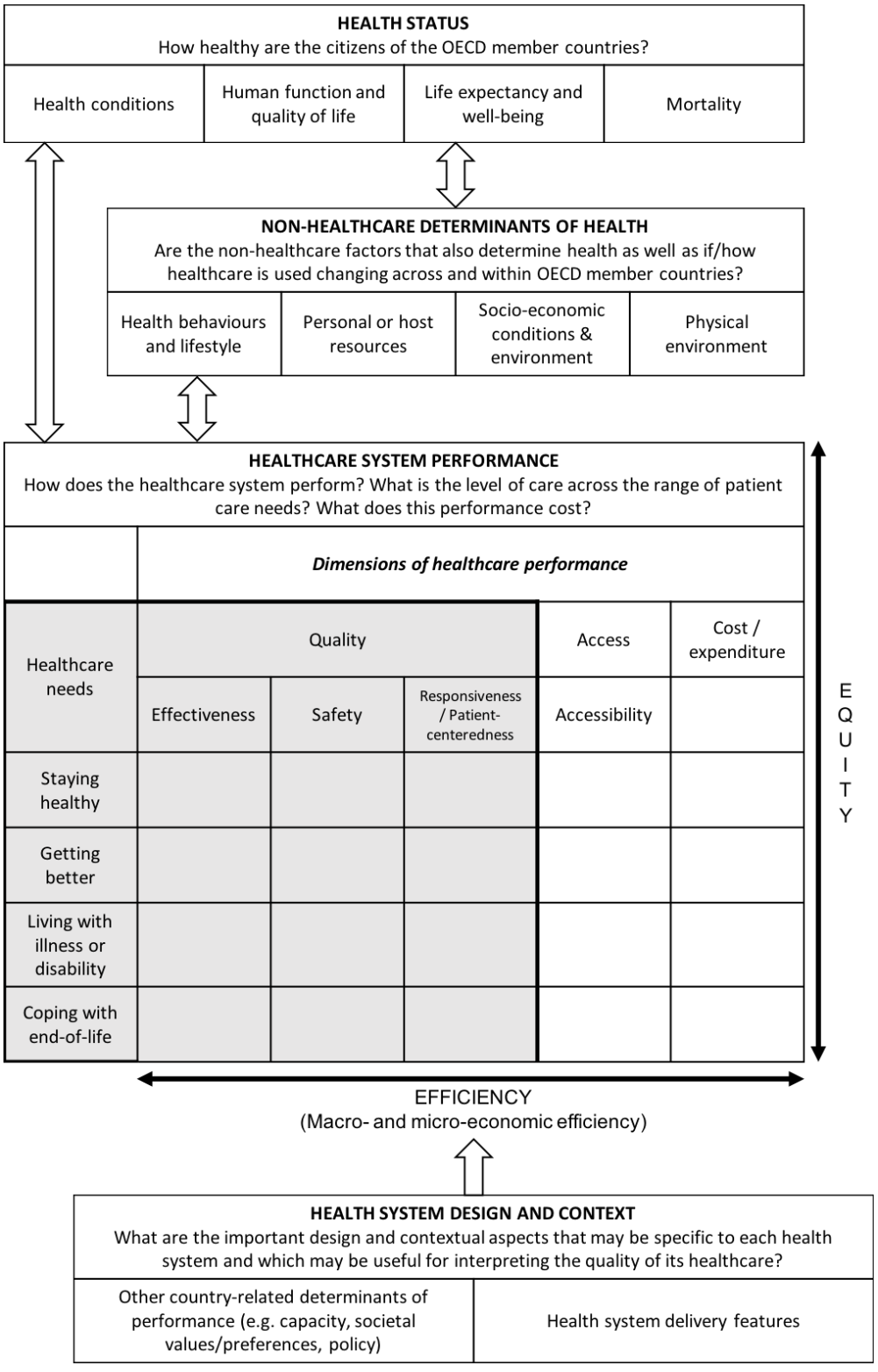

Figure 3 Conceptual framework for OECD HCQI Project [10]

The tiers are as follows:

1) *Health:* this tier represents the health of the population and is influenced by the two succeeding tiers, both non-medical determinants of health and health system performance [10];
2) *Non-medical determinants of health:* this tier reflects those factors that have an effect on the health of the population but aren't as a result of the medical field [10];
3) *Health system performance:* it is recognised that this tier may sometimes not only influence the health status of the population, but also the non-healthcare determinants of health; and is aimed at capturing the inputs, processes, and outcomes of the healthcare system as well as its efficiency and equity [10];
4) *Health system design and context*: this tier recognises the policy, responsibility, and structural differences between healthcare systems in managing the healthcare and non-healthcare determinants of health [10].

The third tier, health system performance, is illustrated using a matrix, where the columns represent the performance dimensions, and the rows represent the healthcare needs [10]. The OECD therefore defines the following performance dimensions: effectiveness, safety, responsiveness/patient-centeredness, access, and cost/expenditure. Seeing as the focus of this framework is on quality, the areas of effectiveness, safety, and responsiveness/patient-centeredness are grouped into the quality dimension. As can be seen in Figure 3, efficiency is considered across all dimensions, and equity across all tiers and healthcare needs. Macroeconomic efficiency is about finding the right level of health expenditure, and microeconomic efficiency is concerned with maximising the value for money [10]. Equity focuses on both health being distributed fairly across populations, as well as fairness in the payment for healthcare [10].

4. DISCUSSION

This section aims to determine the necessary elements for the development of a performance assessment framework by offering a discussion on the frameworks outlined in Section 3. Along with a brief look at the determinants of health, specific aspects from the frameworks are highlighted, namely: how they define health or healthcare systems and their boundaries; the overall and instrumental goals trying to be achieved; as well as which performance dimensions are defined in each framework. The performance dimensions are then critically analysed in order to define a core set of performance dimensions that will address all the areas considered to play a part in performance of a health system, while making the list as concise as possible to reduce the burden of data collection.

4.1 Health systems

Crucial to developing a framework for performance measurement is to define the boundaries of the system for which it is created. To gain an understanding of the context in which the frameworks are placed, how they define a health system is first explored. Multiple definitions exist for health systems, and where the boundaries should be drawn is an often-debated topic. In its World Health Report 2000, the WHO [7] defines health systems as: "comprising all the organisations, institutions and resources that are devoted to producing health actions", where 'health action' is defined as "any effort, whether personal healthcare, public health services or through intersectoral initiatives, whose primary purpose is to improve health". The OECD [10] states that "a health system includes all activities and structures whose primary purpose is to influence health in its broadest sense", thus adopting the same idea as the WHO. Similarly, the Canadian framework adopts the same definition, therefore including services provided to both individuals and groups, as well as public health services and policies [12]. The Australian national framework does not explicitly state which boundaries of the health system are used, but after their previous framework that focused specifically on the care provided by the hospital sector, it was decided to take on a broader view of health systems for the current framework [15].

Many boundaries to separate the health system from elements outside of it have been proposed, showing that all boundary definitions are arbitrary, but to assess health system performance an operational boundary must be proposed [18]. It is also important to note the difference between frameworks developed to assess the performance of the health system as a whole, and those specifically for the healthcare system. The healthcare system is part of the overall health system, but refers specifically to the provision of, and investment in, health services [7]. The health system encompasses a much broader scope than the healthcare system, and the healthcare system is limited to personal healthcare services, including preventive, curative and palliative

interventions [7]. Although most frameworks focus on the healthcare system, they often refer to the health system and even include elements from the wider set of factors [3].

The Framework for a High Performance Health System for the United States is an example of a framework developed for measuring the performance of the healthcare system. In this framework the Commonwealth Fund [16] defines a healthcare system as: "the ways in which healthcare services are financed, organised, and delivered to meet societal goals for health. It includes the people, institutions, and organisations that interact to meet the goals, as well as the processes and structures that guide these interactions".

From different definitions, it is often unclear as to where public health and health promotion activities lie. But nevertheless, a framework's function as an HSPA tool is influenced by how narrowly or broadly the boundaries are set. If the boundaries are too wide it becomes difficult to identify the influence each factor has on performance, however, narrowing the boundaries can exclude actions that have a great impact on health [3].

It is important in practice to align the definition of health system a closely as possible to the actors responsible for improving health. While additionally acknowledging the greater setting in which the system operates improves the understanding of how the system interacts with the wider economic, political and social surroundings [3]. Regardless of how narrow or broad the boundaries are defined, it should be made clear which activities are included in these boundaries [3].

4.2 Goals

Performance is the achievement of desired goals and objectives according to specific standards and guidelines [1], [19]. It must therefore be defined in relation to specific goals that reflect the values of all the stakeholders involved, such as patients, professions, insurers, etc. [6]. Consequently, it is of vital importance to realise the goals of the system being improved, as the shared goal unites the interests and activities of all the stakeholders [20]. In something as complex as a health system there will inevitably be a countless number of goals, and they will often be conflicting [20]. Through reviewing both the frameworks discussed in this paper and various literature it is clear that the overarching goal of a health system is to improve the health of the population it serves [7]. While the main objective is to better health, it is not the only one. Additionally there are many intermediate measures of both processes and outcomes [6].

Murray and Frenk [18] discussed the difference between intrinsic and instrumental goals. Intrinsic goals are those valued in themselves, whereas instrumental goals are there for the purpose of achieving something else. According to Murray and Frenk [18], intrinsic goals fulfil two criteria, any goals that do not satisfy both the criteria are most likely instrumental. For a goal to be intrinsic:

1) It is partially independent of the other intrinsic goals, in that the level of attainment of the goal can be raised while the other ones are kept constant; and
2) It is desired to increasing the level of achievement of the goal [18].

According to the World Health Report 2000 the objective of good health itself is twofold: goodness and fairness. Goodness refers to achieving the best attainable average level of health, meaning that the health system responds well to the expectations of the people it serves. Fairness aims to achieve the smallest feasible differences among individuals and groups, meaning it responds equally well to everyone, without discrimination [7]. The concept of performance in the WHO framework is therefore focused on three fundamental goals: "improving health, enhancing responsiveness to the expectations of the population, and assuring fairness of financial contribution. Improving health means both increasing the average health status and reducing health inequalities." [18].

The OECD framework identifies the following three goals of health policy: (1) improving health; (2) efficiency; and (3) equity [10]. For the goal of efficiency, the OECD subdivided it into (i) macroeconomic efficiency or sustainability; and (ii) microeconomic efficiency or value for money. Macroeconomic efficiency is especially important for public health expenditure, as macroeconomic efficiency entails setting the right level for health expenditure [21]. For the goal of equity, this applied to both fair financing and fair access of health across the population [10].

The Commonwealth Fund [16] states the goal of the healthcare system is "to help everyone, to the extent possible, lead long, healthy, and productive lives", with four core goals of a high performance health system

being identified as (1) high quality, safe care; (2) access to care for all people; (3) efficient, high value care; and (4) system capacity to improve.

The PAF for the NHS was created to aid in assessing the attainment of the goal of improving the health of the population, as well as providing improved care and outcomes for the people who use the health services. In order to improve health the PAF states that it must be ensured that "everyone with healthcare needs (fair access) receives appropriate and effective care (effective delivery) offering good value for money for services (efficiency) as sensitive and convenient as possible (user/carer experience) so that good clinical outcomes are achieved (health outcome of NHS care), to maximise the contribution to improved health (back to health improvement)" [11].

Deciding on the goals of the system is an important initial step creating a performance assessment framework, defining the goals of a system allows for them to be measured, thus allowing the concept of performance and the key factors that influence it to be explored [18].

4.3 Determinants of health

In recognising that the overall goal of health systems is to improve health, and performance measurement aids in determining the extent to which goals are being met, it is crucial to recognise those elements that play a part in the health of a population. Health determinants, as defined by the National Health Performance Committee [22] are: "those factors that either have a positive or negative influence on health at the individual or population level". It would be a gross oversimplification to purely attribute improved health to better performing healthcare system. Health is determined by a large number of factors, and while healthcare is one way to maintain and improve health, it is important to realise the other factors that also determine the health of a population, many of which lie outside the health system [18], [23], [24].

McKeown [25] identifies three main fields that have an impact on health: environment, personal behaviour, and healthcare. Personal behaviour includes activities that the individual has a large influence on, such as smoking, the misuse of drugs or alcohol, diet, exercise, and other habits [25], [26]. The environment, conversely, refers to the physical and social environment that the individual can do little to control, these can include things such as contamination of drinking water, air pollution, and the effect of rapid social change on mental and physical health [26].

While all three of these categories are recognised as having an impact on the health of people, McKeown believes that a lot of emphasis is put on developing and improving healthcare, when personal behaviour and the environment are actually the primary determinants of health. There is no argument, however, that healthcare does indeed have an impact on health [25], [26].

4.4 Performance dimensions

In order to select the indicators required to measure performance, the dimensions of healthcare performance along which it will be measured needs to be established. The Joint Commission on Accreditation of Healthcare Organisations [27] defines a dimension of healthcare performance as "an attribute that is definable and preferably measurable, and related to the system's functioning to maintain, restore, or improve health".

There are many existing frameworks for performance measurement, each taking a different set of dimensions into account. For this paper, when deciding on the dimensions that will be used, the frameworks discussed in Section 3 were used. By considering existing conceptual frameworks for their performance dimensions, it allows a framework to build on the experience of previous studies. An initial list of all existing performance dimensions was gathered and tabulated in Table 1. As a consequence of the sheer number of dimensions presented in the various frameworks, some overlap and redundancy between the dimensions are inevitable [10].

Table 1 gives an overview of the most commonly used performance dimensions in the considered frameworks.

Table 1: Dimensions of healthcare performance

Dimensions	*UK*	*Canada*	*Australia*	*Commonwealth Fund*	*WHO*	*OECD*	*Count*
Acceptability		X		X			2
Accessibility	X	X	X	X		X	5
Appropriateness	X	X	X	X			4
Capability			X				1
Competence		X					1
Continuity		X	X	X			3
Effectiveness	X	X	X	X	X	X	6
Efficiency	X	X			X	X	4
Equity	X	X	X		X	X	5
Expenditure or cost					X	X	2
Patient-centeredness/ Responsiveness	X		X		X	X	3
Safety		X	X				2
Sustainability			X				1
Timeliness	X						1

To reduce this list, the definitions of all these concepts must first be explored. Donabedian [28] defines acceptability as the "conformity to the realistic wishes, desires and expectation of healthcare users and their families", accessibility as "the ease with which health services are reached. Access can be physical, financial, or psychological and requires that health services are a priori available" and defines appropriateness as "the degree to which provided healthcare is relevant to the clinical needs, given the current best evidence". Competence and capability deal with the same concept, which is having the knowledge and ability to appropriately provide care [15], [29]. And according to Donabedian [28]: "continuity addresses the extent to which healthcare for specified uses, over time, is coordinated across providers and institutions".

Further, effectiveness is the degree to which attainable and desirable outcomes or objectives are achieved [23], seeing as improved health is often the objective of a health system, any dimension with clinical focus or aiming to improve health was included in this category. Whereas efficiency involves the optimal use of available resources to achieve the maximum benefits or results (i.e. maximising the outputs to inputs ratio) [4], [5], [10], [23].

Equity defines the degree to which a system fairly benefits those who use it [10], [23]. In the health context, equity deals with how fairly healthcare is distributed among people, as well as the distribution of the burden of paying for it [7], [10], [23]. While safety encapsulates the degree to which the structures, as well as processes of the healthcare system prevent harm or any adverse outcomes to the users of the system and the environment in which healthcare is delivered [4], [5], [15].

Responsiveness refers to how the needs and expectations of people are met [7]. With the WHO [4] stating that responsive governance "embraces the extent to which the hospital relates to community health needs, ensuring the continuity of care and the provision of health services irrespective of ethnical group, physical, cultural, social, demographic or economic characteristics". Similarly, a patient-centered system delivers care that is responsive and respective to the preferences, needs, and values of the people being served, and one whose clinical decisions are guided by these values [30]. It is clear from the definition of patient-centeredness that it is often considered to be synonymous with responsiveness, and therefore why they are included in the same category in Table 1.

The National Health Performance Committee [15] defines sustainability as the "system or organisation's capacity to provide infrastructure such as workforce, facilities and equipment, and be innovative and respond to emerging needs". And timeliness involves providing care in a time window that is most beneficial to both those who receive care and those who deliver care, reducing waiting time and therefore harmful delays [10], [30].

From the Table 1 it can be seen that the most commonly occurring dimensions were: accessibility, appropriateness, effectiveness, efficiency, equity, and patient-centeredness/responsiveness. Not including some of the dimensions does not mean they are disregarded or ignored, but rather most of them can be absorbed into the scope of the other dimensions. Cost, for example, can be included as a part of effectiveness. In the UK PAF effectiveness includes both clinical and cost effectiveness, and the OECD includes it as a part of efficiency [10]. Further, timeliness can be reflected in both accessibility or responsiveness by including the promptness of care [10]. Similarly, accessibility and equity are closely related and both deal with how fair and available the access is to health services [10]. Continuity, as well as acceptability can be subsumed in the dimension of responsiveness due to the fact that it can be measured from the perspective of the patient. In the Canadian framework acceptability is presented as a part of patient-centeredness [10].

Although responsiveness was not necessarily included in a lot of the frameworks, it will be included in this core list due to the other dimensions it can represent. The only dimension that was included in all 6 of the frameworks considered is effectiveness, highlighting the importance of including this dimension. Following this discussion, the core dimensions for measuring and assessing performance identified in this paper include: appropriateness, effectiveness, efficiency, equity, and responsiveness.

5. CONCLUSION

In the synthesis of the various frameworks reviewed in this chapter, the necessary elements to be included in a performance assessment framework has been determined and illustrated in Figure 4 below. As per the figure, when developing such a framework one should begin by first defining the boundaries of the system it aims to assess. The act of separating the health system from the elements outside of it acknowledges the greater setting in which it operates. By not just separating, but also classifying where different activities lie within the health and healthcare system, as well as outside of it, it improves the understanding of how the system interacts with its wider surroundings.

Secondly, both the intrinsic and instrumental goals must be clearly articulated in order for the framework to measure their level of attainment. Thirdly, it is clear that a broader view of health that acknowledges all the factors that may play a part in its improvement must be adopted. By stating both the healthcare and non-healthcare determinants of health the framework recognises that any changes in health status cannot solely be attributed to the changes in performance of the health system.

Lastly, the specific dimensions that are understood to impact the performance of the system being assessed must be determined. Following this review, a core set of performance indicators including: appropriateness, effectiveness, efficiency, equity, and responsiveness were realised.

The arrows in the figure represent the relationship between an improving health system and the healthcare it provides, as well as the goals it aims to achieve. Improving health system performance in the specified dimensions should be bringing the health system closer to achieving its stated goals, as well as improving the healthcare it provides. Additionally, the goals of, and healthcare provided by, the health system impact the performance of the health system. It is clear that identifying these dimensions and linking them in a comprehensive and structured way is what is needed for developing a performance assessment framework.

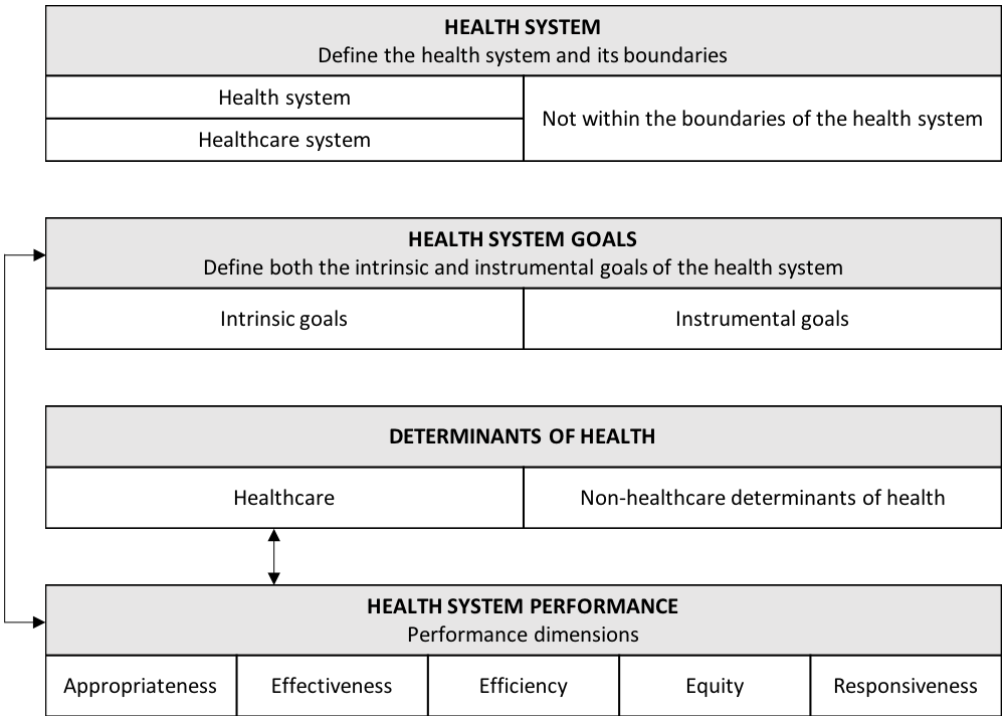

Figure 4 Outline for a health system performance assessment framework

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