

# A framework for measuring health system value

Working paper | June 2022



Strengthening the measurement of outcomes  
and costs in the Saudi health system

## A framework for measuring health system value

**value in health** is a national independent center that exists to enable continuous improvement of value in health and care by sharing knowledge, influencing policy, building capability and enhancing transparency.

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## 01. Introduction

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Saudi Arabia is currently pursuing an ambitious and wide-ranging health system transformation. This extensive initiative, one element within the national Vision 2030 program, aims to deliver better health, better healthcare and at reduced cost. As such, the transformation has the concept of improving value – delivering better outcomes and ensuring the sustainability of health and care services – at its heart. Saudi Arabia is one of many countries now applying the concepts and methods of value-based healthcare to transform the way citizens and patients receive health services and improve their health and care. **Effective value measurement (the quantification of outcomes and resources used) is therefore crucial to the success of the Saudi health system transformation.** Only with reliable and accurate value measurement can the effects of changes to policy and practice be understood and the benefits of the transformation evidenced. Put simply, a shared understanding of the results the health system is delivering and how much it is costing is a necessary requirement for a high-value health system.

How to measure the performance of health systems is a topic that has been of interest to healthcare policymakers and researchers for many years. Several conceptual frameworks have been proposed that describe what needs to be measured and many lessons can be drawn from other health systems that have sought to define and implement stronger value measurement. While Saudi Arabia should draw upon this thinking and evidence, there remain unresolved conceptual, methodological and practical questions. At present, no country can confidently claim to have fully resolved the challenge of value measurement.

In this working paper, we argue that there are now two imperatives for value measurement in the Saudi health system. **The first imperative is to assess current progress and plans against an agreed high-level framework for value measurement to identify priority areas for improvement.** This technical challenge of specifying what and how value should be measured in the Saudi health system would best be addressed by an independent, expert body convened for this task.

Furthermore, experience from other health systems shows that value measurement is both a technical and a change management challenge. **The second imperative for value measurement therefore relates to implementation.** Beyond technical questions of measurement, an independent, expert body can also advise on best practice approaches to implement value measurement. Within the transformation, multiple Saudi organizations and stakeholders are already looking into various aspects of value measurement. What is needed now is a focal point to lead a more coordinated approach.

**value in health** has prepared this working paper **to address the topic of value measurement and prompt input and alignment from key stakeholders on the way forward.** This paper will be of interest to national policymakers involved in the health sector transformation. It will also be relevant for leaders of provider organisations in the public and private sector, and clinical leads responsible for designing and delivering services in Saudi Arabia. This brief paper is not intended as an introduction to the topic of value-based healthcare<sup>1,2</sup>, or to the health system reforms in Saudi Arabia<sup>3,4</sup>. It is also not envisaged as a manual for the implementation of health system performance measurement<sup>5</sup>, although it draws from the extensive literature on this topic. **value in health** intends to engage with health system stakeholders over the coming months to refine the paper's findings, recommendations and conclusions to inform its future activities on this topic.

## 02. A framework for measuring value in the Saudi health sector

### A common framework – benefits and criteria

There are several ways in which it would be beneficial to have a consistent way to describe the measurement requirements of the Saudi health sector. Many stakeholders have an interest in value measurement and various initiatives are in progress or planned. In addition, decisions relating to the data and systems that will underpin future value measurement are being taken now. A common framework will help align stakeholders and their activities, minimizing duplication and ensuring priority gaps are addressed. The absence of such a framework risks a proliferation of competing approaches and measures, and the production of data that cannot be readily compared and analyzed. Informal feedback from stakeholders indicates some lack of clarity about how they are expected to develop value measurement and who is guiding on this topic.

In the context of the Saudi health system transformation, a useful common framework will therefore be one that is **clear, prioritized, and addresses outcomes and costs together**.

A clear framework should act as a more effective engagement tool with stakeholders. A simple approach to explaining what can easily become a highly complicated topic should be more effective in generating stakeholder alignment. In proposing a streamlined value measurement framework, some aspects will necessarily be emphasized and others made less prominent or omitted. This is deliberate. A fully comprehensive, highly granular and detailed model may be required in the future. As a result, it should not be expected that the framework will exhaustively list every possible or required measure of value – only those which are prioritized and would benefit from a more standardized approach.



Finally, a value-based approach requires consideration of meaningful outcomes achieved and resources used.

It is insufficient to deliver good outcomes or higher quality, or to deliver at a more sustainable cost. What needs to be known is the outcomes delivered for the resources invested. Integrated measures of value are needed, beyond the typical emphasis on either outcomes (including clinical outcomes and quality) or costs in existing measurement frameworks.

## The proposed framework

In a rapid review of the relevant literature, it was found that no health system performance management framework was available that offered the required blend of clarity, prioritization and value-focus. However, published measurement frameworks were drawn upon to propose an approach for the Saudi health system. The framework in this working paper can be seen as an adaptation and simplification of OECD’s Health Care Quality Indicators (HCQI) framework<sup>6</sup>. The need to reframe the OECD approach should be expected, as the HCQI framework has different aims (namely, it is designed primarily as a quality framework to enable the comparison of the performance of different health systems, rather than as a value framework to identify gaps

in measurement in a single national health system). Where the HCQI framework has been simplified and refined, this was to give greater emphasis to the separate components that constitute value (outcomes and resources), and to highlight the need for different value measures at different levels within the system. This differentiation of measures at the macro, meso and micro levels is the second main feature of this approach. The result is an easily interpretable table which can readily be used to structure a review of progress, plans and gaps in value measurement in the Saudi health system (Figure 1). The next section applies the proposed framework to this purpose.

Figure 1: Proposed value measurement framework

	Health	Healthcare - performance	Healthcare - design
	Social determinants of health	Outcomes	Resources
			Configuration and transformation
Macro			
Meso			
Micro			
Measured at the population, immediate community and individual levels			

## 03. Priorities to strengthen measurement

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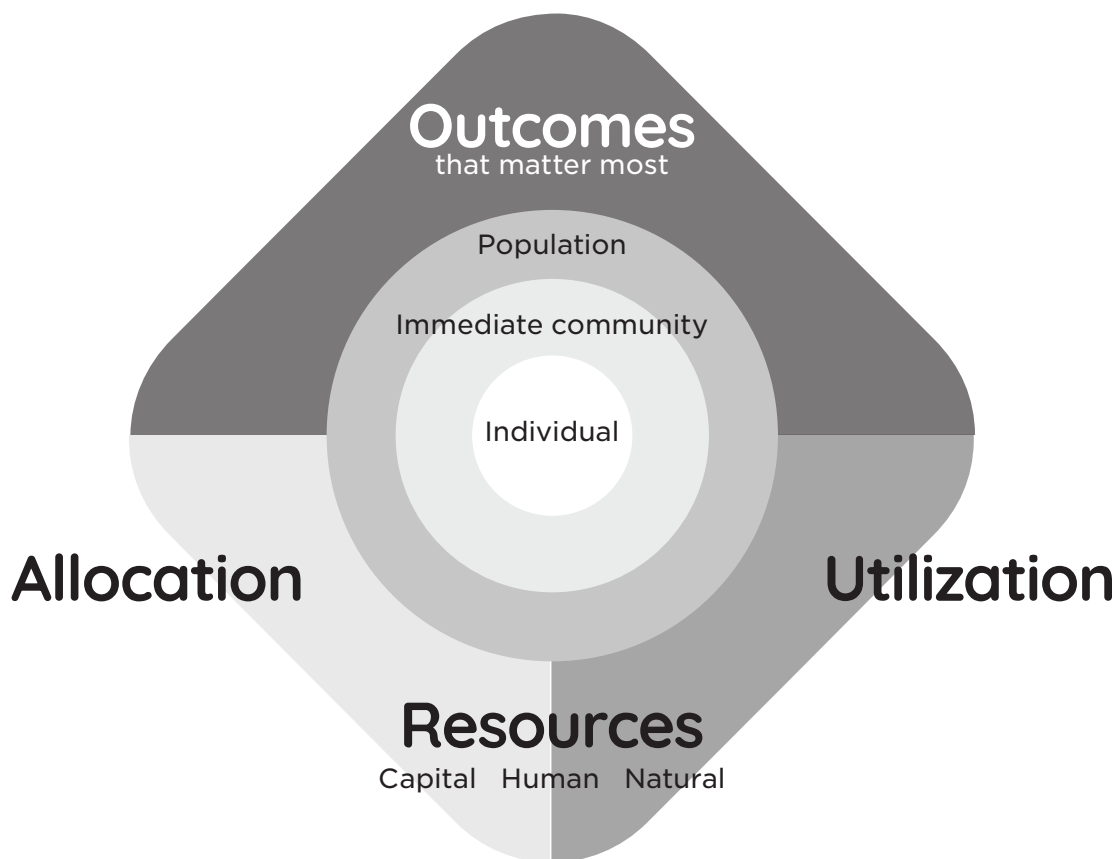
This section identifies the main areas for discussion on value measurement in the Saudi health system. It starts by describing which outcomes and resources are relevant for value measurement, as set out in the definition of **value in health** for Saudi Arabia. Then, by reviewing the value framework, priority domains of measurement are identified. After this discussion of the technical issues of measurement, we note the significant related implementation challenges. Finally, key questions on measurement that now need to be resolved are listed.

### The definition of value in health for Saudi Arabia

In 2020, **value in health** published a definition of value for the Saudi health system, drawn from available best practices and evidence, tailored specifically to the Saudi context and reviewed by global experts and national stakeholders (Figure 2)<sup>7</sup>.



Figure 2: Definition of value in health for Saudi Arabia



Improving Value in Health is achieving the best health outcomes with the optimal and fair allocation and best utilization of resources where “outcomes” relate to benefits delivered for individuals, communities and the population; and, “resources” include all human, capital and natural resources

The document, Definition of Value in Health in Saudi Arabia, Policy Perspective, 2020 is available at **value in health's** website.

[https://cvalue.sa/wp-content/uploads/2021/08/Value-Definition\\_Oct2020\\_web-4.pdf](https://cvalue.sa/wp-content/uploads/2021/08/Value-Definition_Oct2020_web-4.pdf)

One key aspect of this definition was the emphasis placed on considering all types of relevant outcome and resource usage when quantifying value.

- **Outcomes** Clearly, the measurement of clinical outcomes is important. However, the value in value-based healthcare is defined in terms of what matters most to patients. So, patient-reported indicators must also be collected, comprising both measures of patient-reported outcomes and patient experience.

- **Resources** Monetary and non-monetary resources used to deliver healthcare need to be quantified. As in many health systems, the assessment of healthcare expenditure at different levels in Saudi Arabia is challenging and significant work is currently under way to improve the clarity of cost measures across the health system. Non-monetary “costs” must also be considered when determining the value delivered. Examples are the burden of treatment on patients and families and the health system’s use of carbon.



## Priority domains for value measurement

Within the proposed health system value framework for Saudi Arabia, six priority domains of measurement were identified. These are areas of the framework where, in the context of the current progress and plans of the Saudi health system transformation, there appears to be a rationale for early stakeholder alignment around a preferred and standardized approach (Box 1).

### Box 1: Priority domains for review

- a) Outcomes and resources at the macro (national) level
- b) Outcomes and resources at the meso (networks, Model of Care) level
- c) Outcomes and resources at the micro (clinical microsystem) level
- d) Non-healthcare social determinants of health
- e) Configuration and transformation
- f) Periodic and one-off value research

### a) Outcomes and resources at the macro (national) level

High-value health systems should be able to evidence the amount of value they are delivering each year. The main audience for national-level measures of value will be policymakers, supporting their ability to design, select, evaluate and course-correct policies. National measures support international comparisons of performance which contribute to the policymaking process. It is also beneficial to be able to demonstrate to citizens that resources being spent on healthcare are delivering good and improved value.

A range of measures are available at a national level in the Saudi health sector. The Ministry of Health (MoH) produces a range of annual statistics on outputs, processes, and resources

in its facilities, as well as those in other government sectors and the private sector<sup>8</sup>. Data to compare the Saudi health sector with those of other countries is periodically reported through international bodies<sup>9</sup>. Health data measurement in Saudi Arabia is evolving rapidly. One important development was the initiation of measurement of patient experience in MoH facilities in 2018<sup>10</sup>.

Limitations are apparent in the current approach to measurement and reporting of outcomes and resources at the national level, including those that relate primarily to scope and co-ordination. Although there are some commonalities, what is measured (and how it is measured) in MoH can differ from other government sectors and the private sector, so it is not simple to draw sector-wide

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conclusions about value delivery. While there are numerous cost, resource, output and quality measures collected, there are evident gaps in the measurement of clinical and patient outcomes. The future scope and scale of patient-reported indicator measurement (i.e., patient-reported outcomes measures and patient experience measurement) and its associated delivering model is a specific topic that will need to be discussed.

Given these issues, a step forward would be to confirm a minimal set of national indicators, a “value dashboard”

collected on a timely basis and reported periodically, to demonstrate the total value being delivered by the health system over time. The aspiration should be for these measures to be reported across all sectors (MoH, other government sector and private) and cover all relevant aspects of outcomes and costs. In particular, there can be expected to be challenges in determining which patient-reported outcome measures can be reported nationally (potentially, a selection of generic measures and specific measures for tracer conditions) and agreeing the basis to report costs and resource usage.

## b) Outcomes and resources at the meso (networks, Model of Care) level

Leaders in healthcare payers and providers require good visibility of value measures to be able to set their strategies and manage the performance of their organizations. In addition, health systems which are seeking to implement a population health management approach require the ability to analyze measures collated at the population segment level (to understand costs and outcomes for a particular geographic area or patient group, for instance).

There is some evidence that individual healthcare providers and payers in all sectors in Saudi Arabia are seeking to strengthen their value measurement. One example is the work to strengthen the performance management and data reporting of public sector providers being led by the National Health Insurance Center, the initiative within the Saudi health transformation that is establishing a national public payer organization. Another example is the deployment of patient-reported outcome measures at the private provider International Medical Center in Jeddah<sup>11</sup>.

While gaps in value measurement at the organizational level are being addressed, there remains a clear gap at the population segment level. A central component of the Saudi health system transformation is the development of services into six models of care.

In the planned future state, care will be provided to meet defined health needs across organisational and geographical boundaries, organized around these models of care.

This high-level segmentation of health sector needs and activities now needs to be further detailed and specific measures defined to determine the value being delivered in each segment. Segments should be prioritized for review depending on the expected level of benefit to be gained from standardization. Such an approach, combining elements of population health management and program budgeting, will be a critical enabler to policies to enhance delivery of each model of care. If direction is not set nationally, there is a risk that different and non-comparable approaches could be taken. A key decision will be to select what global best practices to draw upon (including the work of ICHOM<sup>12</sup> and PROMIS<sup>13</sup> among others) in designing the models of care/population segment-level measures. Additional, cross-geography and cross-segment measures should be reported to prompt comparison and identify opportunities for improvement. An Atlas of Variation approach to highlighting and investigating unwarranted variation in performance and outcomes, like that taken in other health systems, is likely to prove fruitful in pursuing this objective<sup>14,15</sup>.

## c) Outcomes and resources at the micro (clinical microsystem) level

There is a long history of clinician interest in understanding and comparing the outcomes of their practice. More recently, clinician interest has been noted in better understanding costs of care at the individual level<sup>16</sup>. Globally, there has been significant interest and progress about the measuring and reporting of outcomes and resources at the microsystem level, including the assessment of the effectiveness of using patient-reported outcomes to assist in the clinical management of patients<sup>17</sup>, and the application of time-driven activity-based costing to resource use<sup>18</sup>. Such a detailed understanding of clinical outcomes and resources is increasingly necessary for successful clinical improvement initiatives at the microsystem level. In the Saudi health system, as greater autonomy is given to provider organisations, clinical leads and individual frontline clinicians, greater visibility of

performance will be needed to make effective use of this autonomy. While there, it is evident that increasing attention is being given to developing cost estimation at the microsystem level as part of the system transformation, there is limited evidence that such granular data is currently widely available to healthcare organizations in Saudi Arabia. Related processes and capabilities for value measurement at the microsystem level will need to be further developed. An important consideration at this level will be the need to balance the benefits of more standardized measurement against the possible risks of reducing innovation. It is an open question whether, beyond a defined set of critical standardized measures, it may be better to encourage local leaders and clinicians to adopt their own approaches and share their learning.

## d) Non-healthcare social determinants of health

Much of the health of the population is driven by factors outside the direct control of the health care system. Any health measurement framework would be incomplete without consideration of non-healthcare social determinants of health<sup>19</sup>.

Much relevant data is measured in Saudi Arabia, and cross-sectoral collaboration has been pursued as a policy objective for several years as part of a push for “health in all policies”. Paradoxically, by strengthening measures of value in health relating to the Saudi healthcare system, there is a risk of losing

attention and focus on measurement of non-healthcare factors that impact on population health. An integrated approach is recommended, where organizations within healthcare and other sectors become more practiced in using a broader range of measures (both outcomes and resources) to drive decisions. The population health management approach envisaged in the health transformation will necessitate stakeholders to share data and discuss decisions jointly in this way to improve health.

## e) Configuration and transformation

It would be expected in a high-value health system that measures on how the system is configured (e.g., resource levels, how they are connected) would be tracked and reported. Such measures are particularly important in nations undergoing significant health system transformation, as is the case in Saudi Arabia. There are numerous changes within the health transformation program, ongoing or forthcoming, where it will be helpful if not essential to agree and track standardized measures to evidence positive changes and benefits realized (e.g., measures to track increases in integrated care, use of digital healthcare, workforce changes etc).

## f) Non-routine, periodic, and one-off research

Ongoing measures of outcomes and resources can be time-consuming and expensive to put in place and it may be the case that not all measures will need to be mandated and permanently “hard-wired” into the health system. Each new measure drives an increase in complexity and risks a loss of clarity and insight. As Berwick noted, “intemperate measurement is as unwise and irresponsible as is intemperate health care”<sup>20</sup>.

This indicates that, in addition to the ongoing value measures discussed above, a coordinated approach to non-routine, periodic, one-off, project and survey-type measures of value should be considered to provide useful insights on specific issues in the Saudi health system. One example is the Patient Reported Indicators Study (PaRIS)<sup>21</sup>, the delivery of which is being led by value in health for Saudi Arabia. An integrated program of similar system-wide health measurement studies would be most efficient and maximize opportunities for learning.

## Beyond the technical challenge: change management

Much of the international evidence and debate on value measurement focuses on technical aspects of measurement: what measures should be chosen and how they should be gathered and reported to ensure validity, relevance and accuracy. The experiences of different health systems suggest that related change management challenges are at least as significant as this technical challenge. Health systems can be slow to introduce new value measures and initiatives often meet substantial resistance in practice. Measurement should be viewed as part of an overall performance improvement cycle. For the Saudi health system to realize the benefits of stronger value measurement, it must be ensured that the right roles and skills are in place to analyze the data and respond to the insights generated by this data.

Clearly, much healthcare data is already measured and reported in Saudi Arabia and there are numerous initiatives working to improve measurement. Coordinated and sustained change management efforts will be needed to turn such plans into reality. Sharing good practices and case studies in value measurement within Saudi Arabia may be a powerful lever for change. Clear governance should be established, and roles allocated to identified organizations to specify, gather, analyze and report standardized measures. Training interventions will be required to build individual and system capability to work with and respond to new value measurements. Independence and expertise are likely to be key requirements needed within organizations taking on value measurement responsibilities.



## Summary: questions now to be addressed

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- What measures should be included in a national “value dashboard”?
- What scope is there to standardize outcome and cost measurement across MoH, other government sectors and the private sector?
- What will be the preferred delivery model for patient-reported outcomes measures and patient experience measurement in the Saudi health system?
- Which models of care (or population segments) should be prioritized for standardized value measurement?
- Which global best practices in value measurement should be adopted or localized for the Saudi health system?
- What is the scale of improvement opportunities that might be identified through a Saudi Atlas of Variation?
- What would be the right balance between standardization and local innovation for value measurement in clinical microsystems?
- Which measures of social determinants of health should be routinely reported to health system stakeholders?
- What are the most critical measures of configuration and transformation that should be tracked and reported?
- What would be included in an annual program of national value measurement research?
- What are the most critical change management issues that can be expected and how would these best be addressed?
- What governance arrangements should be put in place for value measurement?
- Which organizations should be responsible for i) specification ii) data gathering iii) data analysis iv) data reporting?
- What capability-building training interventions will be needed? How will these be scoped and delivered?

## 4. Recommendations

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**value in health** proposes the following provisional recommendations for discussion and further refinement with health system stakeholders.

- a) The health sector should align around a common overarching framework for value measurement.
- b) An independent, expert group should be convened to advise on which value measures to use, what tools to adopt/develop, and how they should be implemented. This entity should systematically review the questions in each measurement domain, understand what is in place, what is planned and what decisions and actions now need to be taken. The initial focus should be on determining:
  - a. The contents of a national level value dashboard.
  - b. Priority models of care or population segments and sets of meso-level value measures for these priority areas.
  - c. Priority opportunities to improve patient management through microsystem value measures
  - d. Next steps on patient-reported indicators.
- c) The overall approach should be to work step-by-step on priority areas, implement and evaluation, rather than waiting until everything is resolved before starting and to drive standardisation where needed and encourage innovation where appropriate.
- d) Communications efforts should commence to promote measurement to build interest and commitment to the topic, showcasing good practice within Saudi Arabia.

This paper aims to propose a practical diagnosis and treatment for the issues relating to measurement in the Saudi health system. During 2022, **value in health** will engage with Saudi stakeholders and global experts to refine the views in this paper, then will then advocate for agreed changes with relevant decision-makers. Additionally, **value in health** continues its work on specific aspects of value measurement in 2022. A Working Paper on patient-reported indicators will shortly be published, building on the approach and questions outlined in this paper. A work plan for a Saudi Atlas of Variation is being prepared. Training curricula for value measurement are also currently in development.



## 5. Conclusions

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This paper highlights the key issues for value measurement in the Saudi health system. It is hoped that this discussion will prompt key decision-makers raise measurement up their agendas, debate the topics and advance actions to move this forward in a coordinated way. The health system transformation in Saudi Arabia is highly ambitious in its aspirations. When fully realized, the health system it seeks to put in place will be a world leader in the delivery of value-based healthcare. Better value measurement is both an enabler of the new system and the mechanism by which its benefits will be evidenced. It is timely for stakeholders to now come together to strengthen value measurement.

## 6. Providing your feedback

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This Working Paper proposes an approach to defining and applying a common framework for value measurement in the Saudi health system. It also proposes the key next questions to be addressed to strengthen value measurement.

**value in health** welcomes comments and suggestions from stakeholders on this document by Sunday 4th September 2022. Feedback received by this date will be considered in guiding value in health's ongoing work program. Comments should be emailed to [valueinhealth@phap.sa](mailto:valueinhealth@phap.sa)

We thank you in advance for your valued contributions to this important topic. Stakeholders on this document by Sunday 4th September 2022. Feedback received by this date will be considered in guiding **value in health's** ongoing work program.

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