3rd International Conference on Public Policy (ICPP3)
June 28-30, 2017 – Singapore

T02P36 - Innovation, Governance and Reform: Lessons from the Developing World

Contractual Health Services Performance Agreements for Responsive Health Systems: From Conception to Implementation in the Case of Qatar

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Date of presentation

June 30th 2017

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Abstract

Strategy-based performance management is limited in the Eastern Mediterranean Region. The process of developing and implementing national hospital performance measurement was published from Lebanon but limited information is available on its development and impact in regulating the health sector and enhancing accountability. This paper discusses the selection, development, and implementation of standardized indicators across all healthcare providers and lessons learned for national scale-up of performance measurement activities. The study used mixed-methods guided by the performance management cycle. This paper presents the methods and results of a performance management initiative from Qatar and discusses valuable lessons of this approach.

Keywords: Performance Agreements, Performance Measurement, Performance Management, Indicators, Eastern Mediterranean Region, Qatar,

I. Introduction

Over the past years, research has suggested that the use of strategy-based performance management tools that link strategy, performance measurement and accountability can result in improvements in health outcomes and cost-effectiveness [Mutale et al. 2014; Veillard et al. 2010; Kaplan and Norton 2005; Jha et al. 2003; Inamdar et al. 2002]. Strategy-based performance management tools are increasingly being used worldwide. For example, the Ministry of Health and Long Term Care in Ontario developed a health system performance management framework for developing an accountability policy for local health authorities [Veillard et al. 2010]. England introduced public services agreements as an incentive to

implement performance measurement and used a set of measures for health authorities and National Health Service trusts to report on national priorities [WHO EURO 2016]. Experience on the process of developing and implementing performance management initiatives is limited in countries from the Eastern Mediterranean Region (EMR). In the United Arab Emirates, the Health Authority- Abu Dhabi (HAAD) launched mandatory quality indicators aimed at improving the quality of healthcare services such as standardized mortality ratio, patient experience, waiting time, hospital readmission rates as well as adverse and sentinel events [HAAD 2014; HAAD 2015]. HAAD is in the process of developing this quality framework and limited information has been published on the approach used to develop and implement it [HAAD 2014; HAAD 2015]. Experience on the process of developing and implementing national hospital performance measurement was published from Lebanon. However, limited information is available on the evolution and the impact of this initiative in regulating the health sector and enhancing accountability [El-Jardali et al. 2015].

Qatar healthcare system performance measurement and regulation

In recent years, the State of Qatar has witnessed massive improvements in its socioeconomic development and intensified efforts to reform its health system through implementing key national projects such as national health insurance, licensing, and accreditation [WHO 2007; Qatar NHS 2011]. In line with these efforts, there is a need to further improve the capacity of the health system for coordination and standardization of healthcare, through measuring and reporting accurate and standardized quality metrics and benchmarking performance with other nations [El-Jardali et al. 2015; Qatar NHS 2011]. Furthermore, as the majority of acute care is provided in the public sector, driving healthy competition among public and private providers becomes critical for improving healthcare quality, choice, and efficiency. Against

this backdrop, there is agreement in the Ministry of Public Health, the regulator, that the healthcare system needs a robust policy and regulatory framework to ensure quality and accountability [Qatar NHS 2011]. The MOPH is seeking to address these multiple goals through mandating contractual performance agreements, namely Health Service Performance Agreements (HSPAs), with public, private, and semi-governmental healthcare providers that aim to link performance outcomes to accountabilities. HSPAs serve two main objectives: Firstly, HSPAs aim to enable providers to use a common framework for measurement and assessment of the healthcare system. Secondly, HSPAs aim to provide the regulator- the MOPH- with access to accurate and comprehensive performance data that can be used to improve the quality of healthcare services, monitor the overall performance of the healthcare system, and strengthen transparency [Qatar NHS 2011]. The MOPH intends to use HSPAs as a strategy-based performance management tool that links performance with financial and non-financial incentives (e.g., publishing performance data) for responsive regulation.

This paper explores the experience of Qatar since 2012 in designing and implementing contractual performance agreements. To the best of our knowledge, this is the first experience from the EMR to report on the use of a performance management tool that aligns strategies, performance measurement, and accountability. This paper discusses 1) the selection, development, and implementation of standardized indicators across all healthcare providers and 2) lessons learned for national scale-up of performance measurement activities. Understanding the process and key success factors for implementing performance management tools in Qatar will facilitate the sharing of experiences across countries undertaking activities to improve healthcare system performance, develop public-private partnerships, strengthen evidence-informed policymaking, and enhance accountability.

II. Methods

We used a multi-step iterative approach to develop and implement HSPAs in Qatar (Figure 1). The setting for implementing HSPAs was public, private, and semi-governmental hospitals and primary healthcare centers (PHCs). HSPAs were implemented in two phases and were gradually scaled up to all polyclinics. The process was guided by the performance management cycle (Figure 2), adapted from several initiatives [Veillard et al. 2010; Duvalko et al. 2009; Public Health Foundation, 2003].

The methodology to develop and implement HSPAs in hospitals and PHCs drew on multiple sources of data (Table 1): (1) semi-structured interviews with key stakeholders from the MOPH and healthcare providers; (2) document review, literature review, and an inventory of indicators measured by healthcare providers and the MOPH; (3) Delphi technique for selecting indicators; (4) Capacity- building and pilot- testing of indicators; and (5) Grace Period implementation. The same approach was then applied to polyclinics. Data collected from healthcare providers and MOPH staff through interviews and questionnaires were treated as confidential and the anonymity of participants was preserved. Care was taken to ensure that responses could not be attributed to a single individual.

2.1 Guiding principles

As this is the first initiative of its kind in Qatar, key health system stakeholders including healthcare managers from hospitals and PHCs established principles to govern the development of contractual agreements. These principles were mainly derived from experiences in other countries [WHO EURO 2016; Hilarion et al. 2009; Zelman et al. 2003; Rabbani et al. 2007]:

2.1.1 Feasibility as the main criterion for indicator development and measurement

Health system stakeholders conceded that performance measurement and reporting

should build on existing systems. Feasibility was a key criterion for implementing similar international and regional experiences [El-Jardali et al. 2011; Berg et al. 2005]. In practice, feasibility was a key criterion for selecting indicators for inclusion in contracts.

2.1.2 Balancing mandatory participation with a participatory approach to developing and implementing HSPAs

While there is conflicting evidence on using mandatory versus voluntary participation [Van Herck et al. 2010], the MOPH made participation in HSPAs mandatory for all healthcare providers. This design feature was based on the premise that mandatory participation would diminish selection bias, while voluntary schemes may lead to over-presentation of high performers. Key stakeholders from the MOPH and healthcare providers were presented in the national Steering Committee and were responsible for overseeing the development of indicators, training, pilot-testing, evaluation, and scale-up of HSPAs. Additionally, we maintained dialogue with key health system projects, including accreditation and national health insurance to ensure buy-in and ownership.

2.1.3 Consensual processes across stakeholders for selecting and developing indicators

Consensus guided the implementation of external performance assessment exercises in different countries [El-Jardali et al. 2011; Hilarion et al. 2009]. In practice, we implemented a structured consensual approach using the Delphi technique for selecting indicators.

2.2 Key informant interviews

Prior to launching key activities, we conducted 17 semi-structured interviews with key stakeholders selected using purposive sampling. We interviewed 11 senior officials

responsible for health policy decisions, strategy, and planning from the MOPH as well as six senior managers from major public and private hospitals and PHCs. Participants were notified of the objectives of the interviews and were approached after securing their verbal approval. A semi-structured interview tool guided interviews (Appendix 1). Interview questions probed into the existing framework for performance measurement and reporting, enforcement, and regulation. Fourteen out of 17 interviews were conducted face-to-face and three interviews were self-administered to accommodate participants' busy schedules. Extensive notes were taken for the face-to-face interviews and summarized shortly thereafter.

2.3 Document and literature review and inventory of indicators

We cross-checked results obtained from the semi-structured interviews with a *document review* (Appendix 2) and an *inventory of indicators* provided by the MOPH and healthcare providers (Appendix 3). All hospitals and PHCs in Qatar (n=13) provided an *inventory of indicators* that they are currently measuring or planning to measure with their corresponding measurement tools (e.g., formulas, inclusion/ exclusion criteria). Additional indicators were extracted from Qatar National Health Strategy (NHS) to ensure alignment of the overall measurement framework with national health priorities [Qatar NHS 2011].

We also conducted an extensive *literature review* on international healthcare system performance measurement frameworks and indicators, including: Ontario Acute Care Hospitals BSC [Pink et al. 2001], The World Health Organization Performance Assessment Tool for Quality Improvement in Hospitals (WHO PATH) [Groene et al. 2008] and U.S. Hospital Flexibility Tracking Project [Zelman et al. 2003]. We then selected performance dimensions for inclusion in HSPAs based on their alignment with national health strategy goals as outlined in Qatar NHS (Appendix 4). We also adapted the conceptual framework of the balanced scorecard (BSC) to ensure that the selected dimensions provided a balanced

view of different performance aspects and guided strategic decisions at the organizational and healthcare system levels [Pink et al. 2001].

A total of 4,982 indicators were reviewed from the indicators inventory and international sources. Of these, we selected 136 candidate indicators based on their: 1) relevance to international and national accreditation, 2) relevance to Qatar NHS, 3) balance across performance dimensions, and 4) availability across healthcare providers.

2.4 Delphi technique: Consensus Surveys 1 and 2

Guided by the Delphi technique, the Steering Committee selected indicators from the list of 136 candidate indicators in two consensus surveys [Marshall et al. 2006]. In the first consensus survey, indicators that received ≥80% agreement among participants on the ability of indicators to identify opportunities for improvement and inform management and organizational goals were selected. Similar agreement levels were used in previous experiences [Groene et al. 2008]. Results from consensus survey 1 were fed back to participants in a second consensus survey. Indicators that received ≥80% agreement among participants on their importance and utility for making improvements and ≥60% agreement on their feasibility were shortlisted for pilot-testing. The criteria used to select indicators were adapted from similar international experiences [Berg et al. 2005; Groene et al. 2008; Thakur et al. 2008; Mattke et al. 2006].

2.5 Capacity-building and pilot-testing

The selected indicators were then pilot-tested for two months in six hospitals, one of which is a major facility with eight sites, and six PHCs, representing all active public, private, and semi-governmental hospitals and PHCs in Qatar. We developed the measurement tools for the pilot indicators, including standardized procedures manuals consisting of definitions, target

population and inclusion/exclusion criteria, and log sheets for both manual and electronic data collection. These tools were developed based on international best practice and feasibility of measurement (i.e., healthcare providers' capacities and availability of data). In preparation for the pilot, healthcare providers were trained on measuring and reporting indicators in a series of workshops. After the pilot, staff responsible for data collection and reporting completed a questionnaire to evaluate the feasibility, validity, and reliability of each indicator, and to refine the indicators to better fit the context of Qatar. Questions were adapted from several sources [Groene et al. 2008; Thakur et al. 2008; Mattke et al. 2006; Zellerino et al. 2009; Farley et al. 2006; Smith and Jordan 2008; Kristensen et al. 2009]. The questionnaire used a Likert scale for quantitative items (Appendix 5). Alpha Cronbach exceeded 0.55 for the subscales demonstrating high internal consistency (Appendix 6). An indicator was considered reliable, valid and feasible when its mean score was ≥3 on each of these subscales (Box 1). A similar cut-off point was used previously [Zellerino et al. 2009]. Additionally, the questionnaire included qualitative questions on barriers to data collection and suggested changes to indicators. Results were then validated in a workshop with pilot hospitals and PHCs and the Steering Committee.

Following the pilot, revisions were made to the procedures manuals to refine indicators and minimize data collection burden, such as reducing reporting requirements for some indicators whilst providers work on strengthening their capacity to report data needed for risk-adjustments for national scale-up.

2.6 Grace Period implementation and evaluation in hospitals and PHCs

Following pilot assessment, six public, private, and semi-governmental hospitals and five PHCs measured and reported indicators from April 2014 to September 2015 during a Grace Period, characterized by the absence of incentives and disincentives and the focus on

improving data collection and reporting. Additionally, during the Grace Period, MOPH staff from the Healthcare and Patient Safety department was trained on data cleaning, analysis, and reporting of indicators submitted by healthcare providers. One year through the Grace Period, healthcare providers completed a questionnaire that consisted of quantitative and qualitative items to garner the views of healthcare providers on the process and outcomes of implementing HSPAs.

The frequency (% out of the total respondents) was calculated for quantitative items. Thematic analysis was used to analyze qualitative items from the semi-structured interviews, pilot and grace period evaluation surveys. The emerging concepts were organized into themes, which were pre-identified based on study objective and survey questions, and arranged in descending order of recurrence. Most recurrent themes were presented in the Results. Themes were then categorized based on the performance management cycle framework. The first phase of the cycle, setting system-level strategies, presented in the Results below, was undertaken in a separate initiative as part of Qatar NHS for 2011- 2016.

III. Results

1. Setting system- level strategies

Qatar's NHS for 2011-2016 is a medium-term strategy for the health sector that was based on extensive stakeholder consultation and undertaken as a separate initiative that feeds into Qatar's overall national vision for 2030. It identifies key activities necessary to reach ultimate goals for the health sector, these are: 1. Comprehensive world class healthcare system whose services are accessible to the whole population; 2. Integrated system of healthcare offering high-quality services; 3. Preventative healthcare; 4. Skilled national workforce capable of providing high-quality health services; 5. National health policy that sets and monitors standards; 6. Effective and affordable services; and 7. High-caliber research (Appendix 4).

2. Developing and using performance indicators to monitor progress of strategic goals

A total of 35 indicators were pilot-tested in hospitals and 25 in PHCs. Of these, hospitals finally endorsed 25 indicators and PHCs endorsed 15 indicators for inclusion in HSPAs for the grace period and subsequent national scale-up (Table 2).

System-related challenges and key design features for implementing HSPAs

Healthcare providers reported several challenges in data collection and reporting, as evident from the interviews, pilot and grace period evaluation surveys. Major challenges included manual data collection and lag in an accurate coding system. For example, some healthcare providers reported that readmissions and urgent tests were not flagged in their IT system and staff had to refer to manual records to retrieve this data. As for patient safety indicators, providers pointed out that under-reporting by physicians and staff, limited access to patient records, and limited post-discharge surveillance hindered reporting of medication errors, patient falls rates, and healthcare associated infections rates. Another challenge was the shortage of skilled staff with dedicated time to measure and report indicators. Healthcare providers indicated that they needed more support from the MOPH to further strengthen their capacity to measure and report indicators and to analyze and improve their performance. They also indicated that they needed more regular meetings with healthcare providers and the MOPH to allow sharing of experiences and ways to overcome data issues (Table 3).

Despite these challenges, healthcare providers showed interest and support for the potential of indicators for quality improvement and benchmarking throughout the different phases of the initiative. The grace period reportedly witnessed improvements in data collection and reporting for several healthcare providers, as well as in the capacity of the Healthcare Quality and Patient Safety Department within the MOPH to conduct data cleaning, analysis, and

reporting. The grace period evaluation survey showed that the majority of respondents expressed favourable views on the overall process of implementing HSPAs and commended the participative approach (82% of providers) (Table 3).

3. Knowledge translation through quarterly reports and engaging high-level policymakers and stakeholders

Synthesis of data and benchmarking

A trained MOPH team calculated quarterly results for all performance indicators and presented them in quarterly reports, which included a detailed description of data issues for each provider as well as dashboards that flagged performance outside national and international benchmarks. The process for selecting benchmarks consisted of a literature review of indicator databases and an inventory of benchmarks used by healthcare providers. Benchmarks were selected based on comparability with HSPA indicators (i.e., similar numerator, denominator, and inclusion/ exclusion criteria) and availability of clear definitions, regularly collected and publicly reported data on international databases (e.g., Agency for Healthcare Research & Quality). Benchmarks were then validated with the Steering Committee for endorsement. Providers were encouraged to use benchmarks as a signal for self-improvement, identify performance issues and determine the extent to which other countries also experience these issues. Each indicator was assigned a performance category based on its distance from benchmark, for example, if the distance of an indicator from benchmark is <10% then the indicator would be considered meeting or better than benchmark. Importantly, healthcare providers were encouraged to interpret benchmarking in light of their own context and case-mix and to develop quality improvement plans that are tailored to their own needs. At this early stage of measurement, users of the dashboard were cautioned against making definite assessments of performance.

The utility of quarterly reports in communicating results to healthcare providers was demonstrated by providers in the grace period evaluation survey, whereby the majority (64%) indicated that quarterly reports were helpful in providing an assessment of data and the performance of facilities. Respondents (73%) also indicated that HSPAs succeeded in providing a common framework for measurement across providers and enabled collecting valid, timely, relevant, and reliable data (64%) as well as improved healthcare quality (55%).

Contractual agreements as input to evidence-informed policymaking

An important component of this work was the use of data generated from HSPAs into policymaking. Results were packaged into "briefing notes" which are information-packaging tools to quickly and effectively advise policymakers and stakeholders about the performance of the healthcare system, directing attention to priority issues, and making organizational- and strategic-level decisions for improving the healthcare system. In order to foster communication with healthcare providers, higher-level policymakers and other stakeholders from the MOPH such as the National Health Insurance department, we conducted several dialogue activities to facilitate the use of information from HSPAs for healthcare service management, health system management, planning, advocacy and policy development.

4. Comprehensive system of performance management

The MOPH initially drafted the terms of the performance contract and assigned specific roles and responsibilities to healthcare providers and the regulator, based on a review of the literature on performance agreements in the healthcare sector. Various iterations of this contract were then reviewed and finally approved by the Steering Committee. Hospitals and PHCs are currently in the process of signing these contracts, in which they commit to reporting data for measuring indicators in a timely manner and in compliance with the procedures manual. The regulator commits to provide reports with national and international

benchmarks and support to providers in measuring and reporting data and improving data quality and performance (for example capacity-building). Importantly, the contracts stipulate that the MOPH will maintain the confidentiality of results, whilst the capacity of the system is built to support publishing results. It is anticipated that, in future phases, healthcare providers will be accountable for these performance indicators with consequences for under-performance and non-compliance as part of a responsive regulation framework. Discussions with the Steering Committee emphasized the need to align incentive models with ongoing initiatives on accreditation, licensing, and national health insurance, as well as to start with non-financial incentives of a positive nature, followed by public reporting and financial incentives. Dialogue is currently underway with stakeholders to design this incentive system.

The same approach to selecting indicators in hospitals and PHCs was implemented in polyclinics. The process started with establishing a Steering Committee composed of key stakeholders' representative of polyclinics in Qatar, followed by indicators inventory, review of international and regional sources for relevant indicators. A total of 821 indicators were reviewed. Of these, we selected 101 candidate indicators and ended with 21 pilot indicators following consensus surveys 1 and 2 and using the same selection criteria used for hospitals and PHCs. The indicators were piloted in 29 polyclinics, representative in terms of size, geographical location, and services in Qatar. A set of 14 indicators was selected for inclusion in polyclinics HSPAs (10 core and 4 service-specific) based on their validity, feasibility, and reliability (Table 4). Polyclinics are currently measuring and reporting HSPAs as part of a Polyclinics Grace Period.

IV. Discussion

To the best of our knowledge, this is the first initiative in the EMR to present the process and methodology to develop and implement a performance management tool that links strategy, performance outcomes, and accountabilities. Qatar's experience with performance agreements suggests that strategy-based scorecards were useful for making healthcare system performance measurement relevant to health system regulation and evidence-informed policymaking. In line with similar initiatives, Qatar balanced scorecard included a manageable combination of outcome and process indicators including a range of patient groups [Van Herck et al. 2010]. Our experience demonstrated that the focus on feasibility for measuring indicators and encouraging healthcare providers to interpret benchmarking results based on their own case-mix reduced the need for extensive risk adjustments and information system restructuring, which was also reported from a similar national initiative in Dutch hospitals [Berg et al. 2005]. That said, healthcare providers and the MOPH agreed on scaling-up efforts to build the capacity of their systems for collecting data needed for risk adjustment in future phases.

This experience shows that it is important to tailor health system performance measurement initiatives to the unique needs and capacities of individual countries. At the same time, it presents universal lessons for other countries, particularly from the EMR, that are interested in or are in the process of developing and implementing performance measurement initiatives or engaging in developing public-private partnerships for the provision of healthcare services, and plan to link performance to accountabilities and evidence-informed policymaking. First, the strength of our approach mainly lays in the gradual implementation and expansion of HSPAs from public and private hospitals and PHCs to polyclinics. Each major step was followed by evaluation to better understand needs and refine the approach for expansion. Experience on performance measurement initiatives suggests that it is important to invest time

in gradually implementing change initiatives, as this would help stakeholders better understand the goals of measurement and obtain their buy-in [WHO EURO 2016; El-Jardali et al. 2011; El-Jardali F 2007; Schalm 2008].

Another important lesson that emerged from of our experience is that systematically engaging stakeholders and establishing partnerships with them were vital to developing and implementing contractual agreements, especially with the private sector. Previous experiences demonstrated that local ownership and high levels of participation are necessary to ensure that performance measurement initiatives and contractual agreements would be used to improve performance and governance [WHO EURO 2016; El-Jardali et al. 2011 Hilarion et al. 2009; Berg et al. 2005; Mannion and Davies 2002]. The involvement of stakeholders was especially important in the selection of indicators and adapting the methodology for measuring indicators to the local context. In our experience, the participative approach was key to decreasing the burden of data collection on healthcare providers, ensuring that indicators were important to key health system stakeholders, and facilitating endorsement by healthcare providers.

Our approach focused on capacity-building as an integral component of each step, including workshops for MOPH staff and healthcare providers, detailed step-by-step procedures manuals, continuous technical support to healthcare providers and MOPH staff, and quarterly performance reports with detailed data assessments to help providers build their data measurement capacity. Similarly, previous performance measurement and reporting activities emphasized the importance of training for performance measurement and improvement initiatives [Zelman et al. 2003; Kazandjian et al. 2003; Ovretveit 2004; Thomson et al. 2004].

Strengths and Limitations

This paper has several strengths. First, it is one of the first reporting on the early experiences of developing contractual agreements in the EMR that link strategy, performance on selected quality measures, and incentives and can help inform the experience of other countries undertaking such initiatives. Second, we used a mixed-methods approach (i.e., interviews, document review, surveys, quantitative and qualitative data) to assess the existing framework for measuring and regulating healthcare system performance and to evaluate the pilot and grace period, which helped validate data and enabled cross-checking of findings.

With regards to limitations, the process of linking the information from HSPAs to evidence-informed policymaking focused on communicating findings using evidence-informed strategies, such as briefing notes to higher-level policymakers. Nevertheless, a more comprehensive approach to knowledge translation requires a wider range of activities such as promoting a culture for evidence-informed policymaking, building capacity of knowledge brokers to communicate information and of knowledge users to assess and apply this information in policymaking, as well as monitor and evaluate the impact of performance measurement on improvement activities [Veillard et al. 2010; Lavis et al. 2006].

Another limitation is that this paper describes the process of developing and implementing contractual agreements with a focus on the process of selecting indicators, refining indicators to context-specific needs, and reporting on these indicators to the regulator. However, this paper does not discuss the results of indicators or the process for using results of indicators in policymaking or regulating the healthcare sector. That said, as part of future phases, we aim to examine the use of HSPAs in policymaking and link indicators with regulation as well as assess the experience of Qatar in implementing and institutionalizing a system of incentives for responsive regulation.

Conclusion

This paper presents the methods and results of a performance management initiative from Qatar and discusses the valuable lessons of this approach. Qatar experience suggests that the development and use of strategy-based scorecards in contractual agreements with private and public providers can be useful to all health system stakeholders, despite their mandatory nature, if clear principles are applied early on: focus on feasibility and participative consensus-based approach to decision-making.

Acknowledgements

The authors would like to thank Mrs. Huda Amer Al-Katheeri, Mrs. Noora Abdulla Salem and Dr. Nader Ahmed Abbas Badr for their significant contribution, support and facilitation.

Tables and Figures

Figure 1. Process of developing and implementing HSPAs in Qatar

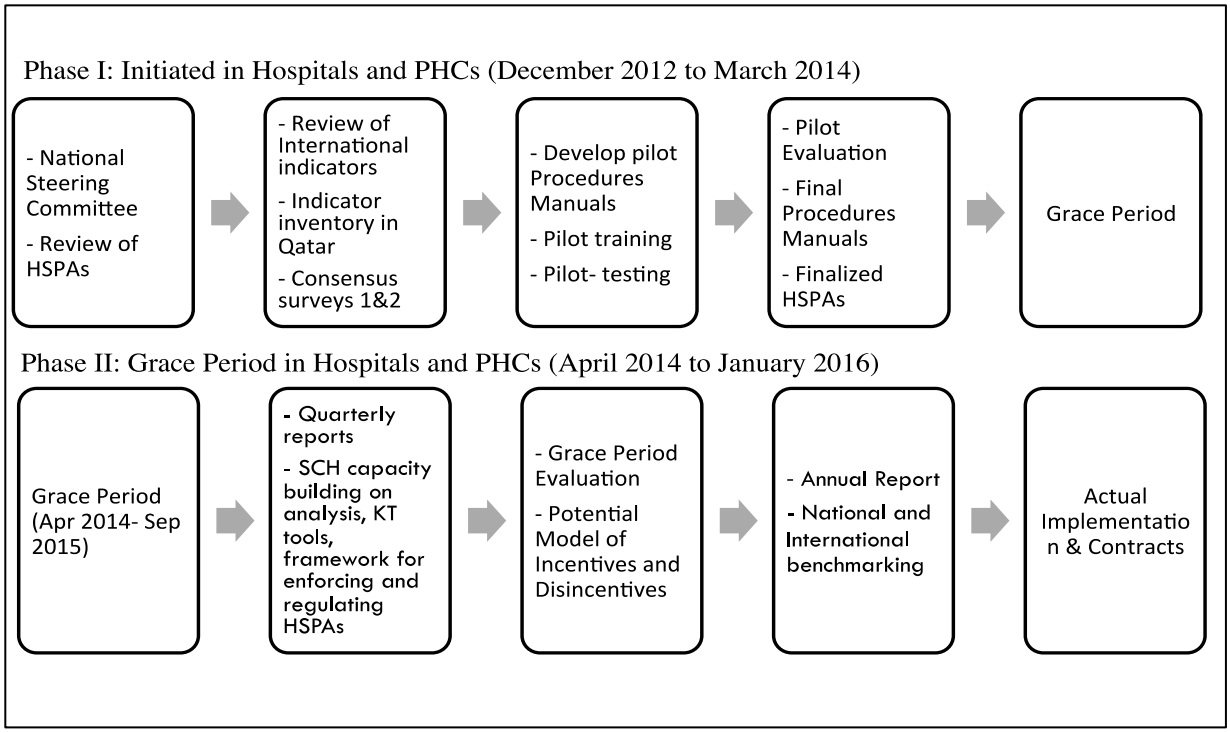

Figure 2. Strategy-based performance management cycle

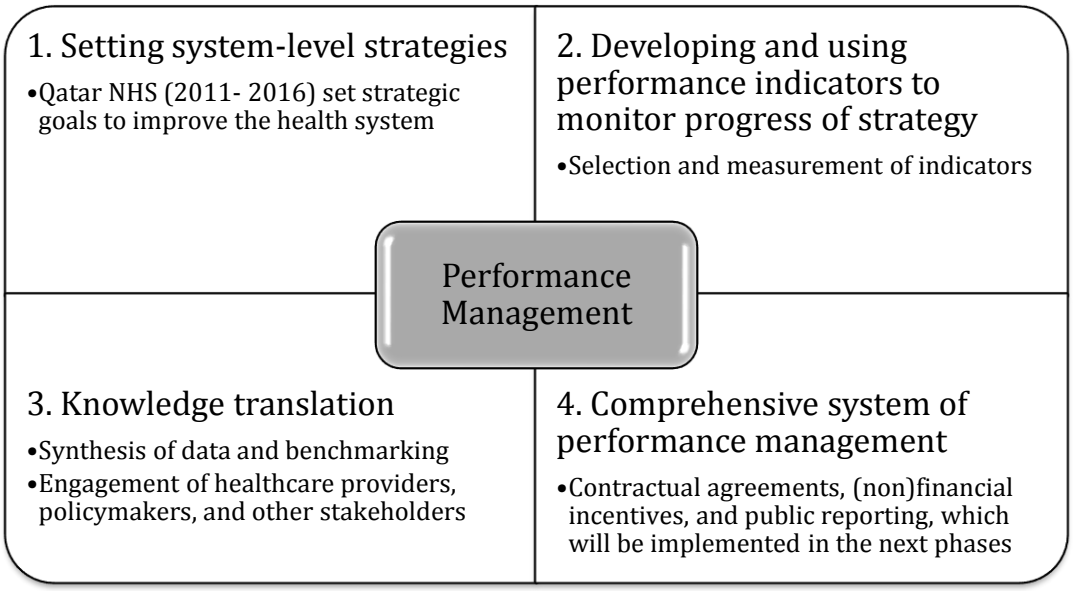

Table 1. Data collection methods, sources, and objectives

Methods	Sources	Objectives
Semi-structured interviews	Face-to-face and self-administered interviews	• Understand the existing framework for measuring and reporting performance and regulating the healthcare system • Discuss potential design features for HSPAs • Obtain the early commitment and support of stakeholders
Literature and document review and inventory of indicators	• Key documents from MOPH • Inventory of indicators from MOPH and healthcare providers • Literature review on international healthcare system performance frameworks and indicators	• Understand the existing framework for measuring and reporting performance and regulating the healthcare system • Identify candidate indicators for inclusion in HSPAs • Assess the readiness of providers for undertaking measurement and reporting activities as well as potential challenges and training needs for providers
Delphi technique	Consensus surveys 1 and 2	• Select indicators for inclusion in HSPAs
Capacity-building and pilot- testing	• Hands-on training sessions on measuring and reporting indicators for healthcare providers	• Build capacity of providers on measuring and reporting indicators • Assess validity, feasibility, and reliability of indicators

	• Pilot evaluation survey	• Refine indicator measurement tools
Grace Period implementation	• Hands-on training for MOPH staff for analyzing data reported from healthcare providers • Grace period evaluation survey	• Build capacity of the MOPH staff on measuring and reporting indicators • Further build capacity of providers on measuring and reporting indicators • Assess strengths and challenges of the process for implementing HSPAs • Assess outcomes in terms of improvements to data collection and reporting as well as performance and healthcare quality. • Determine next steps to link performance with incentives (financial, non-financial, and disincentives).

Box 1. Criteria used to select HSPA indicators for Grace Period

The following criteria were used to exclude indicators from HSPAs:

1. Indicator scored < 3 on feasibility, reliability, and validity

2. More than two providers (or one provider in the case of major multi-site hospitals and PHCs) mentioned that:

- Significant additional resources were required to measure the indicator (such as staffing, information systems, costs, time etc.); or
- Indicators were not meaningful to providers (i.e., indicators will not contribute to improving performance) or required significant changes to the methodology

3. Data was provided by < 50% of providers.

The criteria were validated with the Steering Committee.

Table 2. Standardized HSPA indicators for hospitals and PHCs

Hospital indicators (n= 25)	
Dimension 1: Processes, appropriateness, and outcomes	**Dimension 3: Safety- Patients and staff**
1. In-hospital deaths rate **2.** % Unplanned readmissions within 28 days of discharge related to the primary admission **3.** % Unscheduled returns to the Emergency Department within 48 hours related to primary visit **4.** Postoperative pulmonary embolism or deep vein thrombosis rate **5.** % Women undergoing general anaesthetic for Cesarean Section	**1.** % Compliance with hand hygiene **2.** Blood and body fluid staff exposure rate **3.** Sentinel events **4.** Medication errors **5.** Patient falls rate **6.** Incidence of inpatient hospital-onset Methicillin-resistant Staphylococcusaureus **7.** Incidence of inpatient hospital-onset Clostridium Difficile **8.** Surgical site infections rate **9.** % Compliance with surgical safety checklist **10.** Patient safety culture rate
Dimension 2: Access and responsiveness	**Dimension 4: Health workforce**
1. Waiting time in clinic/ outpatient department	**1.** Turnover rate
Dimension 5: Satisfaction/ experience- Patients and staff	**Dimension 6: Performance and efficiency**
1. Staff satisfaction **2.** Patient/ customer experience – Inpatients **3.** Patient/ customer experience –	**1.** % Laboratory results completed in < 60 minutes **2.** % Medication reconciliation at admission

Outpatients	**3.** Blood culture contamination rate **4.** Occupancy rate **5.** % Cancelled elective surgeries
PHCs indicators (n= 15)	
Dimension 1: Processes, appropriateness, and outcomes	**Dimension 3: Safety- Patients and staff**
1. % Diabetics aged 18-75 years who received an Hemoglobin A1c (HbA1c) test **2.** % Diabetics with HbA1c<9% **3. %** Diabetics whose most recent blood pressure (BP) reading is <140/90 mm Hg **4.** % Hypertensive patients with BP 140/90 or less	**1.** % Compliance with hand hygiene **2.** Blood and body fluid staff exposure rate **3.** Sentinel events **4.** Medication errors **5.** Patient safety culture rate
Dimension 2: Access and responsiveness	**Dimension 5: Satisfaction/ experience- Patients and staff**
1. % Referrals from primary healthcare to hospitals (by specific conditions) **2.** Waiting time in clinic/ outpatient department	**1.** Staff satisfaction **2.** Patient/ customer experience – Outpatients
Dimension 4: Health workforce	**Dimension 6: Performance and efficiency**
1. Turnover rate	**1.** % Laboratory results completed in < 60 minutes

Table 3. Key design elements and features that helped drive or hindered improvement

Design elements of the Grace Period that should be retained	**N***	**Design elements of the Grace Period that should be changed**	**N***
• Robust stakeholder involvement/ Supportive approach	4	The need for: • More assistance with data collection and analysis	3
• Capacity-building sessions	3	• Regular meetings with the Steering Committee and the MOPH	2
• Step-by-step procedures manuals ensured understanding and consistency	2		
Features that helped drive improvements in data collection and reporting, performance and healthcare quality	**N***	**Features that hindered improvements in data collection and reporting, performance and healthcare quality**	**N***
• Presence of customized IT system in facilities	3	• Lack of an IT system for robust data collection	7
• Standardized understanding of indicators	3	• Lack of time to measure and report data	3
• Commitment of frontline staff in data collection	2	• Lack of manpower for data collection and reporting	3
• Commitment of higher management	2	• Lack of management support for collection of data	2
		• Lack of resources to measure indicators	2
		• Preoccupation with multiple projects at the same time	2

* N denotes number of respondents

Table 4. Standardized HSPA indicators for polyclinics

Indicators	Type
Dimension 1: Processes, Appropriateness, and Outcomes	
1. % Patients with a diagnosis of hypertension who are given lifestyle advice in the preceding 15 months for increasing physical activity, smoking cessation, safe alcohol consumption and healthy diet	Core
2. % Patients (18-75 years) with diabetes (type 1 and type 2) whose most recent HbA1c level is <9.0% during the measurement year	Service
3. % Patients aged 5 through 64 years with a diagnosis of persistent asthma who were prescribed long-term control medication	Service
4. % Patients (≤ 25 years old) seen at one or more visits within a 12-month period with a diagnosis of atopic dermatitis who were assessed for current symptoms of disease activity	Service
5. % Patients (1 month- 5 years old) with acute gastroenteritis whose parent/caregiver received education on diet and when to contact the physician	Service
Dimension 2: Access and Responsiveness	
6. % Referrals from polyclinics to secondary/ tertiary care (by specific condition)	Core
Dimension 3: Safety (Patients and Staff)	
7. % Compliance with hand hygiene	Core
8. Blood and body fluid staff exposure rate	Core
9. Patient safety culture rate	Core
10. Healthcare workers vaccination rate	Core
11. Medication errors	Core
Dimension 4: Health Workforce	
12. Turnover rate	Core
Dimension 5: Satisfaction/ Experience (Patients and Staff)	
13. Staff satisfaction	Core
14. Patient/ customer experience	Core

References

Berg M, Meijerink Y, Gras M, Goossensen A, SchellekensW, Haeck J, et al. Feasibility first: developing public performance indicators on patient safety and clinical effectiveness for Dutch hospitals. *Health Policy* 2005;**75**:59–73.

Duvalko KM, Sherar M, Sawka C. Creating a system for performance improvement in cancer care: Cancer Care Ontario's clinical governance framework. *Cancer Control* 2009;**16**:293-302.

El-Jardali F, Saleh S, Ataya N, Jamal D. Design, implementation and scaling up of the balanced scorecard for hospitals in Lebanon: policy coherence and application lessons for low and middle income countries. *Health Policy* 2011;**103**:305-14.

El-Jardali F. Hospital accreditation policy in Lebanon: its potential for quality improvement. *J Med Liban* 2007;**55**:39–45.

Farley CL, Tharpe N, Miller L, Ruxer DJ. Women's Health Care Minimum Data Set: pilot test and validation for use in clinical practice. *J Midwifery Womens Health* 2006;**51**:493-501.

Groene O, Klazinga N, Kazandjian V, Lombrail P, Bartels P. The World Health Organization Performance Assessment Tool for Quality Improvement in Hospitals (PATH): an analysis of the pilot implementation in 37 hospitals. *Int J Qual Health Care* 2008;**20**:155–61.

Health Authority- Abu Dhabi (HAAD). "JAWDA" to Raise Quality of Healthcare Services in the Emirate of Abu Dhabi. September 2014.

http://www.haad.ae/haad/tabid/58/Mid/417/ItemID/451/ctl/Details/Default.aspx Accessed 17 2016.

Health Authority- Abu Dhabi (HAAD). HAAD JAWDA Quality Performance KPI Profile. December 2015. http://www.haad.ae/HAAD/LinkClick.aspx?fileticket=j73CZWI86MU%3d&tabid=1450 Accessed 17 March 2016.

Hilarion P, Sunol R, Groene O, Vallejo P, Herrera E, Saura RM. Making performance indicators work: the experience of using consensus indicators for external assessment of health and social services at regional level in Spain. *Health Policy* 2009;**90**:94–103.

Inamdar N, Kaplan RS, Bower M. Applying the balanced scorecard in healthcare provider organizations. *J Healthc Manag* 2002;**47**:179-95.

Jha AK, Perlin JB, Kizer KW, Dudley RA. Effect of the transformation of the Veterans Affairs Health Care System on the quality of care. *N Engl J Med* 2003;**348**:2218-27.

Kaplan, R.S. and Norton D.P. The Office of Strategy Management. *Harv Bus Rev* 2005;**73**:72-80.

Kazandjian VA, Matthes N, Wicker KG. Are performance indicators generic? The international experience of the Quality Indicator Project. *J Eval Clin Pract* 2003;**9**:265–76.

Kristensen S, Mainz J, Bartels P. Selection of indicators for continuous monitoring of patient safety: recommendations of the project 'safety improvement for patients in Europe'. *Int J Qual Health Care* 2009;**21**:169-75. doi: 10.1093/intqhc/mzp015. Epub 2009 Apr 9.

Lavis JN, Lomas J, Hamid M, Sewankambo NK: Assessing country-level efforts to link research to action. *Bull World Health Organ* 2006;**84**:620-628.

Mannion R, Davies HT. Reporting health care performance: learning from the past, prospects for the future. *J Eval Clin Pract* 2002;**8**:215–28.

Marshall M, Klazinga N, Leatherman S, Hardy C, Bergmann E, Pisco L, et al. OECD Health Care Quality Indicator Project. The expert panel on primary care prevention and health promotion. *Int J Qual Health Care* 2006;**18**:21–5.

Mattke S, Epstein AM, Leatherman S. The OECD Health Care Quality Indicators Project: history and background. *Int J Qual Health Care* 2006;**18**:1–4.

Mutale W, Stringer J, Chintu N, Chilengi R, Mwanamwenge MT, Kasese N, Balabanova D, Spicer N, Lewis J, Ayles H. Application of balanced scorecard in the evaluation of a complex health system intervention: 12 months post intervention findings from the BHOMA intervention: a cluster randomised trial in Zambia. *PLoS One* 2014;**9**:e93977. doi: 10.1371/journal.pone.0093977

Ovretveit J. Formulating a health quality improvement strategy for a developing country. *Int J Health Care Qual Assur* 2004;**17**:368–76.

Pink GH, McKillop I, Schraa EG, Preyra C, Montgomery C, Baker GR. Creating a balanced scorecard for a hospital system. *J Health Care Finance* 2001;**27**:1-20.

Public Health Foundation. From silos to systems: using performance management to improve the public's health. Performance management national excellence collaborative. Washington, DC: Public Health Foundation, 2003. Available from:

http://www.phf.org/resourcestools/Documents/silossystems.pdf Accessed 6 August 2016.

Qatar National Health Strategy (NHS) 2011- 2016. http://www.qu.edu.qa/pharmacy/components/upcoming_events_material/Qatar_National_Health_Strategy.pdf.

Rabbani F, Jafri SM, Abbas F, Pappas G, Brommels M, Tomson G. Reviewing the application of the balanced scorecard with implications for low-income health settings. *J Healthc Qual* 2007;**29**;21–34.8.

Schalm C. Implementing a balanced scorecard as a strategic management tool in a long-term care organization. *J Health Serv Res Policy* 2008;**13**:8–14.

Smith DP, Jordan HS. Piloting nursing-sensitive hospital care measures in Massachusetts. *J Nurs Care Qual* 2008;**23**:23-33. doi: 10.1097/01.NCQ.0000303802.30327.7f.

Thakur H, Chavhan S, Jotkar R, Mukherjee K. Developing clinical indicators for the secondary health system in India. *Int J Qual Health Care* 2008;**20**:297–303.

Thomson R, Taber S, Lally J, Kazandjian V.UKQuality Indicator Project (UK QIP) and the UK independent health care sector: a new development. *Int J Qual Health Care* 2004;**16**;51–56.3.

Van Herck P, De Smedt D, Annemans L, Remmen R, Rosenthal MB, Sermeus W. Systematic review: Effects, design choices, and context of pay-for-performance in health care. *BMC Health Serv Res* 2010;**10**:247. doi: 10.1186/1472-6963-10-247.

Veillard J, Huynh T, Ardal S, Kadandale S, Klazinga NS, Brown AD. Making health system performance measurement useful to policy makers: aligning strategies, measurement and local health system accountability in Ontario. *Health Policy* 2010;**5**:49-65.

WHO Regional Office for Europe (WHO EURO). Pathways to health system performance assessment: A manual to conducting health system performance assessment at national or sub-national level. http://www.euro.who.int/__data/assets/pdf_file/0005/169412/e96512-Eng.pdf?ua=1 Accessed 17 March 2016.

World Health Organization Qatar Country Cooperation Strategy. 2007. http://www.who.int/countryfocus/cooperation_strategy/ccsbrief_qat_en.pdf

Zellerino BC, Milligan SA, Gray JR, Williams MS, Brooks R. Identification and prioritization of quality indicators in clinical genetics: an international survey. *Am J Med Genet C Semin Med Genet* 2009;**151C**:179–90.

Zelman WN, Pink GH, Matthias CB. Use of the balanced scorecard in health care. *J Health Care Finance* 2003;**29**:1–16.

Appendices

Appendix 1. Semi-structured interview tool

1. What are currently measured/collected information/indicators? Can you please provide us with a list (and measurement tools e.g., numerator, denominator, sample, etc.)?

2. What are the sources of information you collect/ measure (e.g., public, private providers, please specify)?

3. Do you have an internal report that is sent on a regular basis to Senior Management? What kind on information do you submit (e.g., financial indicators, infection rates, mortality rates, etc.)?

4. Do you submit reports/ information to other departments or institutes (e.g., International Organizations)? What kind on information do you submit (e.g., financial indicators, infection rates, mortality rates, etc.)?

5. What are training needs for building capacity on measuring performance?

6. What are current IT and coding systems used for data collection (e.g., e-medical records, ICD-10 coding)?

7. What are your perspectives and suggestions on the Health Service Performance Agreements (HSPAs)? Specifically:

   a. What do you think of the indicators in the HSPAs?

   b. What kind of reporting system would be useful (reporting from providers to SCH & vice versa)?

   c. What kind of regulation mechanisms would work best for providers and the SCH (e.g., carrot & stick)?

8. Any additional comments & questions?

Appendix 2. Key documents and sources

Document title	**Sources/ Author**
Qatar National Health Strategy 2011- 2016	MOPH
Licensing documents	MOPH
Qatar Policy Statement on Medical Malpractice	MOPH
Implementation of the Social Health Insurance (SHI) Scheme in the State of Qatar	Document submitted by external consultants to MOPH
Strengthening Regulation and Governance of Health Care Quality in Qatar	Document submitted by external consultants to MOPH
International Patient Safety Goals	Major multi-site public hospital in Qatar

Appendix 3. Template- Inventory of Indicators measured by healthcare providers in Qatar

Purpose: In order to leverage on existing indicators that are being measured in health care organizations in Qatar and in order to integrate existing indicators within the Health Services Performance Agreement, it is important to understand and know the nature and scope of the key performance indicators that health care organizations in Qatar are currently measuring (or planning to measure). To this end, we provide this template for organizations to complete. Below is just an example of the key performance indicator information that we require.

1. Please list indicators (clinical, management, financial, structure, process, outcomes, etc.) that your organization is currently measuring, planning (or would like) to measure in the future

Indicator	**Formula (numerator denominator)**	**Frequency**	**Data Sources**	**Is indicator required by Accreditation? (What type of Accreditation?)**
Example 1: Vaccination Rate for Children	(5- 6 year old children who received full childhood immunizations up to preschool/ Total 5- 6 year old children registered at MCH and showed up at the facility) X 100	Quarterly, and report annually	Administrative data, medical records, survey	Yes, for Accreditation Canada, or for the national program or for Joint commission (or NO)
Example 2: Readmission for Same Diagnosis within 30 Days of Discharge	(Total number of patients readmitted through emergency or normal admission within 30 days of discharge)/ Total number of patients discharged from the hospital alive X 100	Monthly	Discharge Database- Medical Records	Yes, for Accreditation Canada, or for the national program or for Joint commission (or NO)
Etc..				

2. Please list the top THREE key challenges that your organization encounter when measuring and reporting indicators, if any (Example lack of specialized staff for collecting and analyzing of indicators).

3. Please list the top THREE key training needs for your organization to better support the measurement and reporting of indicator, if any.

Appendix 4. Performance dimensions and alignment with Qatar NHS goals (2011- 2016)

Performance Dimensions		**Qatar National Health Strategy Goals for 2011- 2016**
1. Processes, appropriateness, and outcomes	Providers appropriately and competently deliver clinical care or services and achieve desired outcomes	1. Comprehensive world class healthcare system 2. Integrated system of healthcare offering high-quality services 3. Preventive healthcare 5. National health policy that sets and monitors standards 6. Effective and affordable services
2. Access and responsiveness	Providers are responsive to community needs, ensure access, continuity, and coordination of care, and promote health	1. Comprehensive world class healthcare system 2. Integrated system of healthcare offering high-quality services 3. Preventive healthcare
3. Safety- Patients and staff	Providers have the appropriate structure, and use care delivery processes that measurably prevent or reduce harm or risk to patients, healthcare providers and the environment.	2. Integrated system of healthcare offering high-quality services 4. Skilled national workforce
4. Health workforce	Providers are qualified to deliver patient care, have the	4. Skilled national workforce

	opportunity for continued learning and training, and work in positively enabling conditions.	
5. Satisfaction/ experience- Patients and staff	Patients are satisfied with their care and staff are satisfied with their work	2. Integrated system of healthcare offering high-quality services 4. Skilled national workforce
6. Performance and efficiency	Providers make optimal use of inputs to yield maximal outputs given the available resources	6. Effective and affordable services

Appendix 5. Pilot evaluation Questionnaire

Please indicate the level of your agreement or disagreement with each statement by checking one of the five following alternatives:

1. Information for measurement of this indicator was available?

Available	Available to some extent	Not available
1	2	3

   a. If available, what are the data sources?
   b. If not available, which data elements were not available and why not?

2. Information for measurement of this indicator was ***not*** accessible for the following reasons:
   a. There is no information technology (IT) system to collect data

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

   b. There are administrative barriers to data collection

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

   c. What are these barriers?
   d. What other data elements were not accessible *(if any)*?

3. Information was scattered across different sources

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

   a. Where was the information present?

4. Formulas and inclusion/ exclusion criteria for measurement of this indicator were ***easy to apply***

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

5. The workload for data collection was acceptable

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

6. Financial costs for data collection were reasonable *(if any)*

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree	Not applicable
1	2	3	4	5	NA

   a. What were the incurred costs for this indicator *(if any)*?

7. The time needed for data collection was reasonable

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

   a. How much time did data collection take?

8. There was missing or incomplete information for this indicator

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

   a. What was missing?

9. Different people interpreted the definitions for this indicator differently

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

   a. What sections were interpreted differently?

10. Information for measurement of this indicator was consistent/ the same ***across different sources*** in your facility

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

a. Did all data sources provide the exact same information?

11. Information for this indicator should be collected and reported consistently ***across facilities***

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

12. Support and guidance from your facility were provided to you when needed during measurement of this indicator

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

13. This indicator is important to your facility

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

14. Measurement of this Indicator resulted (or could potentially result) in ***identifying*** areas for improvement in your facility

Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1	2	3	4	5

a. Please provide examples of a form of improvement that resulted (or could result) from measurement of this indicator

15. In your opinion, is there anything that your facility should do in order to help you collect data accurately and on time for this indicator?

16. What changes would you recommend for this indicator and its measurement tools (*if any*)?

17. Additional Comments/Suggestions

Appendix 6. Subscales for assessing indicators and reliability testing of subscales

Subscales	**Definition**	**Alpha Cronbach**
Feasibility	Availability of data, workload, and cost/ data burden for each indicator. **Questions:** 1, 2a, 2b, 3, 4, 5, 6	0.737
Reliability	Clarity of indicator definitions, completeness of data, and consistency in data collection and reporting. **Questions:** 7, 8, 9, 10, 11	0.667
Validity	Suitability of the indicator to judge hospital quality and in identifying opportunities for improvements. **Questions:** 12, 13, 14	0.552