NEWS AND PERSPECTIVES

A conceptual framework for Taiwan’s hospital clinical performance indicators

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Introduction

The assessment on health care system’s performance has become a worldwide issue with the publication of the World Health Report 2000.1–4 The increased interests result from rising health care costs, aging populations, medical error/safety, poor quality, inequality, lack of accountability, sustainability, and patient centeredness.1,4 Hospitals play a critical role to overcome these challenges.4

Quality indicators (QIs) were used to assess health care performance, promote quality improvement activities, benchmark between cross-department team in a single hospital or between hospitals, assist consumers’ choice in health care providers,5,6 and resulted in the proliferation of QIs.5 Some of QIs involved hospital accreditation6 at an institution level4 and some of them were associated with health system performance at a national level.3

However, these QIs were rarely reviewed in a systematic and scientific fashion.5 Most of the QIs were driven by the availability of data, the ease of measurement, or a published crisis in the health care system.5,7 Only a few were based on clinical evidence7 and purpose-designed data systems.8 Lacking a national and systematic perspective, some health care fields received exceeding concerns from others of equal importance.3 Furthermore, the development and selections of QIs were completed by an individual project without coordination and scientific rigor, which created a duplication or ambiguous definition of some QIs.

A conceptual framework became necessary to manage these QIs and define “quality of health care” in coherence with policy, target priority area, and find the data collection gap.5,7,8 Over the past 2 decades, countries and international organizations have developed their own conceptual framework for health system performance assessment and QIs classified.2,4 To manage the QIs, researchers used different categories to classify indicators.5,6 The World Health Organization (WHO) performance assessment tool for quality improvement in hospitals (PATH) developed framework with the six dimensions of hospital performance as category of QI. While Organization for Economic Cooperation and Development (OECD) Health Care Quality Indicators Project (HCQIP) formed a framework with a matrix structure that included dimensions of health care performance shown as columns and health care needs shown as rows. Another perspective in classified QIs is the aspects of care provision,5 which were applied to view how care services were provided, what kinds of resources were allocated, and the relationships linking performance to patient outcome.6 The aspects of care provision contained structure, process, and outcome.5,6 Copnell et al’s5 research also used a matrix with aspects of care provision and dimensions of health care performance shown as columns and domains of application shown as rows. The WHO PATH and OECD HCQIP built up a framework for the international comparisons.

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In Taiwan, the blooming quality improving activities accompanied a wide range of QIs applied to measure performance and quality in the past decade. However, there is still no conceptual framework suited for managing QIs.

In 2011, the Advisory Council for Healthcare Quality Policy (ACHQP) of the Department of Health (lately the Ministry of Health and Welfare) had the mission to build up the QI data collection system to manage the rich QIs, target priority areas and ensure coherence with the policy. The Council initially formed an appropriate conceptual framework as a guiding tool. It started with conducting a thorough review of international experience such as WHO PATH and OECD HCQIP.

Principles for the conceptual framework

There are several principles on developing the conceptual framework. Firstly, it should provide a vision for future directions and actions. Secondly, it must reflect a balanced view of quality and contemporary state of health care policy on quality. Thirdly, it should be feasible with the existing data reporting systems.

The proposed conceptual framework

The proposed framework was built as a matrix shown in Table 1. The five quality dimensions include safety, clinical effectiveness, patient centeredness/responsiveness governance, efficiency, and staff orientation are shown as columns, while three application domains—hospital wide, non-surgical, and surgical—are shown as rows.

Safety, clinical effectiveness, and patient centeredness are regarded as the core dimensions of health care quality among the five dimensions. Safety represents a dimension with appropriate structures, renders services in the system or a hospital, and attains the goal to prevent or reduce risk to patients, provider, or environment.

<table>
<thead>
<tr>
<th>Dimensions of Quality</th>
<th>Hospital wide</th>
<th>Public health</th>
<th>Non-surgical</th>
<th>Surgical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Clinical effectiveness</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Patient centeredness/Responsive governance</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Efficiency</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Staff orientation</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>54</td>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

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Clinical effectiveness, wherein the system or a hospital, is the degree of achieving desirable outcomes, and appropriately providing evidence-based services to all patients likely to most benefit.3,4

Patient centeredness/responsiveness governance means the degree to which a system or a hospital places the patient at the center of its delivery of health care,3,4 respond to community needs, and ensure care continuity and coordination.4 According to the OECD HCQI project’s experience, these two dimensions were placed equally in this study.3

Efficiency implicates to find the right level of resources for the system and ensure maximum benefits or results.3 Hospitals manage to yield maximum output4 with given available resources.

Staff orientation is the degree to which staff are qualified to provide health services, opportunity offered for continuous learning and training, and sense of satisfaction.4

To demonstrate the area where policy interventions focused on and reflect the perspectives of most service consumers, the three application domains from Copnell et al’s research are adopted, i.e., hospital wide, nonsurgical, and surgical to classify these rich QIs in a systematic fashion. The nonsurgical has been further categorized as Departments and Disease/Conditions.

The application of this conceptual framework

ACHQP conducted a ground survey on the quality or performance measure activities in Taiwan during 2011–2012. These activities can be divided into four categories: (1) hospital accreditation; (2) clinical performance measure systems (including Taiwan Quality Indicator Project, Taiwan Clinical Performance Indicators, and Taiwan Healthcare Indicator Series); (3) claim-based quality measure systems of National Health Insurance (including provider profile data analysis system, disease-specific pay-for-performance program for diabetes mellitus, tuberculosis, breast cancer, cervical cancer, and asthma); and (4) disease specific surveillance, reporting and registry systems (including Taiwan Cancer Screening Programs, Cancer Registry, Cancer Core Measure Project, Baby-friendly Hospital Initiative and Birth Registry, Adverse Medical Reaction Reporting System, Infection Control Inspection Quality Improvement Project, and the Taiwan Nosocomial Infections Surveillance System).

Up to 558 qualified clinical indicators were carefully reviewed in this study. The Council finally selected 91 participants. According to the Delphi methods, the ACHQP took two rounds of selection process, the first round used to rate candidate quality related projects/activities with four criteria: impact/importance, improbability/actionability, inclusiveness, and evidence hierarchy. In the second round, the panel rated QIs accompanied with projects/activities selected from the first round. The criteria for evaluating candidate quality indicators included impact/importance, improbability/actionability, relevance, and evidence hierarchy. The position of the participants is shown in Table 1.

Discussion

QIs have proliferated in Taiwan. The conceptual framework developed by ACHQP serves as a guidance to identify areas that need to be addressed to improve quality, foster accountability, or fill the data collection gaps among regions or institutes.

This framework lays down an enduring way of measuring quality along scientific and systematic dimensions. It also allows dynamic changes in domains of application over time. However, equity and accessibility as cross-cutting dimensions that apply to all other domains/dimensions were not included. This needs to be considered. Under the framework, the Ministry of Health and Welfare further developed consistent data collection and reporting system. In 2013, it published a yearbook for national clinical performance to inform policy makers with updated state of national healthcare quality measures. The data were also publicized via websites for public accountability.

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References