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Society for Maternal-Fetal Medicine (SMFM) Special Report: Current approaches to measuring quality of care in obstetrics

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Heath care measurement and evaluation is an integral piece of the health care system. The creation and assessment of care performance metrics are important and relevant for the obstetric community including both clinicians and patients. Careful deliberation is required to create a measurement system that results in optimal care for women and families. This article reviews the current approaches to measuring quality in obstetrics.

Key words: measurement, obstetrics, quality, safety

Introduction

Increasingly there has been pressure on hospitals and physicians to measure quality and prove the adequacy of the care they are delivering. This pressure comes from insurers and consumers who want to be sure they are not only obtaining good outcomes but also obtaining good value for dollars spent. While the need to spend wisely is understandable, the dilemma remains of how to prove the quality of care provided is high. That is to say, is quality of care measurable?

The Institute of Medicine defines quality of care as "the degree to which heath care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."[1] According to Agency for Healthcare Research and Quality (AHRQ), "quality measures" are mechanisms that enable the user to quantify a selected aspect of care by comparing it to an evidence-based criterion.[2] A "clinical performance measure" is a type of quality measure that assesses the degree to which a provider competently and safely delivers a clinical service to a patient within the optimal time period. Performance measures have been created by a number of advocacy coalitions, patient safety institutions, government agencies, and professional organizations. To measure performance adequately and accurately, process, structure/capacity, access, patient satisfaction, and outcome measures must not only be created, but must be relevant, scientifically sound, feasible, actionable, accurately measurable (reliable and valid), and ultimately result in improved outcomes for the population. In the case of outcome measures, they may need to be risk-adjusted as well. To paraphrase Einstein, everything should be made as simple as possible, but not any simpler.

Various types of quality measures exist as summarized in the Figure.

Structure/capacity measures are designed to assess whether the capacity to perform a service or function exists in a particular system (eg, what proportion of providers have undergone a certain postpartum hemorrhage (PPH) training or whether a particular service is available at an institution such as massive transfusion policy or PPH cart).

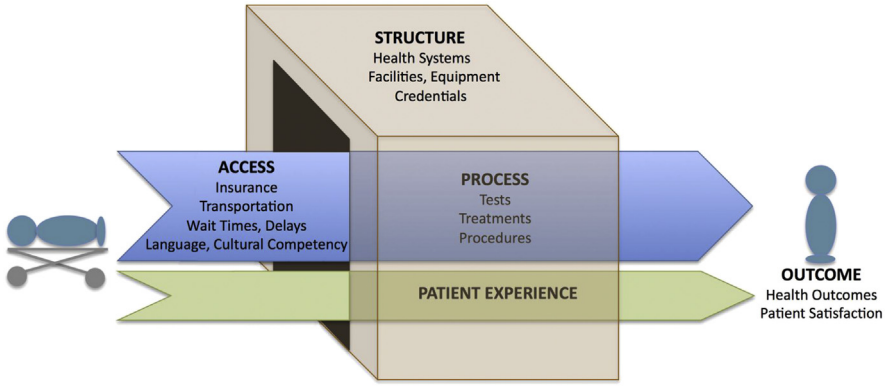
Process measures are designed to assess the frequency of usage of a particular clinical process; they are calculated using the number of patients eligible for a particular service in the denominator and the number of patient who actually receive the service in the numerator (eg, the proportion of GBS carriers who received antibiotics during labor).

Outcome measures are created by assessing the frequency or prevalence of a specific outcome in a given

A listing of articles in this series that were published in other journals before #36 appeared in the June 2015 issue of AJOG is available at smfm.org/publications/.

Received June 9, 2016; accepted June 24, 2016.

FIGURE
Five components of health care quality



Agency for Healthcare Research and Quality 5 domains of quality.

SMFM. Measuring quality of care in obstetrics. Am J Obstet Gynecol 2016.

population (eg, number of third- or fourth-degree tears, brachial plexus injuries, or postpartum intensive care unit [ICU] admissions per 1000 deliveries).

Access measures assess the attainment by patients of timely care as well as the delays and barriers (educational, financial, prejudiced, geographic, or environmental) that may result in failure to obtain care.

Finally, patient experience/satisfaction measures assess the patient's perception and experience of health care delivery. These measures are typically dependent on patient survey data and are not obtainable by typical administrative data generated by a hospital.

Using measures for quality improvement involves 6 steps: identifying deficiencies or areas for improvement, selecting measures to assess these areas, obtaining preintervention baseline data, performing an intervention, performing postintervention measurement, and finally, refining the measurement and the intervention. Quality improvement may involve assessment of internal processes at a single institution or may involve assessments across different institutions that result in regional, state, or national comparisons.

Having established that it is desirable and conceptually possible to measure quality of care, this article will review current approaches to measure quality of care in obstetrics and preview new measures on the horizon. Additionally, systems for using and maintaining quality measures will be discussed.

Current measures of obstetrical quality

There are multiple different metrics currently being suggested or employed in an effort to measure quality of obstetric care. Current metrics for obstetrics endorsed by national organizations, such as the AHRQ, National Quality Forum (NQF), and Joint Commission, are shown in Table 1. However, the lack of an obstetric national database has resulted in measurement difficulty leading to high resource use for certain types of metrics required by organizations such as the Joint Commission and Leapfrog Group. Moreover, the lack of universally agreed upon metrics has resulted in a lack of standardized measures being consistently employed across hospitals. While some variation in metrics may be acceptable, certain metrics should be determined to be foundationally important to gain the momentum needed to improve quality of obstetric care at a larger level.

Utilizing the AHRQ quality framework (Figure) of structure-process-outcome-access-patient experience allows us to consider the current metrics in a framework that allows for thoughtful evaluation of how suggested metrics actually reflect quality of care and what additional metrics may be used in the future.

Many of the current metrics being tracked are outcome measures, chosen due to their ease of measurement but criticized by many clinicians as being an end product that may not be truly reflective of quality of care. In obstetrics, unlike other areas of medicine, the outcomes of 2 patients (ie, the mother and her fetus), whose outcomes may involve tradeoffs with the other, need to be taken into account. Furthermore, when looking at outcomes, it may be important to take into account the differences in patient populations that can affect outcomes. Taking patient characteristics into account is known as risk-adjusting. There are many methods of doing this, some simpler than others, but for many outcome measures this is a critical step so hospitals are not penalized for taking care of the sickest patients.[3]

Using only outcome metrics makes it difficult to determine which drivers (patient level, processes, systems) actually affect the outcome being measured. It is important to acknowledge that it is often not a single driver that impacts an outcome. Effective outcome metrics ideally would be those demonstrated to be impacted by changes in systems and process. An example is surgical site infections, which