Clinical Indicators for Quality Improvements-A Mini Review of Literature

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Abstract

The quality of health care is on the agenda in most health care systems. Much of this interest in quality of care has developed in response to recent dramatic transformations of health care systems, accompanied by new organizational structures and reimbursement strategies that may affect quality of care. Assessing the quality of care has become increasingly important to providers, regulators, and purchasers of care. Indicators for performance and outcome measurement allow the quality of care and services to be measured. This assessment can be done by creating quality indicators that describe the performance that should occur for a particular type of patient or the related health outcomes, and then evaluating whether patients' care is consistent with the indicators based on evidence-based standards of care. Quality of care can be defined as 'the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge', and can be divided into different dimensions according to the aspects of care being assessed. This paper will focus define clinical indicators in a standard way for a global audience, and to review a few classifications of clinical indicators that may be useful to those who wish to measure quality of care and describe the performance of health care and related outcomes.

Keywords- *Indicators, Quality, Healthcare*

Introduction

Introduction to indicators

Indicators provide a quantitative basis for clinicians, organizations, and planners aiming to achieve improvement in care and the processes by which patient care is provided. Indicator measurement and monitoring serve many purposes. They make it possible to: document the quality of care; make comparisons (benchmarking) over time between places (e.g. hospitals); make judgments and set priorities (e.g. choosing a hospital or surgery, or organizing medical care); support accountability, regulation, and accreditation; support quality improvement; and support patient choice of providers. The use of indicators enables professionals and organizations to monitor and evaluate what happens to patients as a consequence of how well professionals and organizational systems function to provide for the needs of patients. Indicators are, however, not a direct measure of quality. Because quality is multidimensional, understanding quality requires many different measures.

Indicators have been defined in several different ways:

1. Indicators measures a particular health care process or outcome.[1]

2. Indicator are used as quantitative measures that can be used to monitor and evaluate the quality of important governance, management, clinical, and support functions that affect patient outcomes.[2]

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3. Indicators are used as measurement tools, screens that are used as guides to monitor, evaluate, and improve the quality of patient care, clinical support services, and organizational function that affect patient outcomes.[3]

Following are the key characteristics of an ideal indicator:

(i) Indicator is based on agreed definitions, and described exhaustively and exclusively

(ii) Indicator is highly or optimally specific and sensitive, i.e. it detects few false positives and false negatives

(iii) Indicator is valid and reliable

(iv) Indicator discriminates well

(v) Indicator relates to clearly identifiable events for the user (e.g. if meant for clinical providers, it is relevant to clinical practice)

(vi) Indicator permits useful comparisons

(vii) Indicator is evidence-based. [4]

Purpose of the use of indicator

The use of indicators enables professionals and organisations to monitor and evaluate what happens to patients as a consequence of how well professionals and organisational systems function to answer the needs of patients. However, indicators are not a direct measure of quality. As quality is multidimensional, understanding quality requires many different measures. Indicators provide a quantitative basis for clinicians, organisations and planners aiming at achieving improvements in care and the processes by which care is provided.

Indicator measuring and monitoring serve many purposes making it possible to:

· Document the quality of care

· Make comparisons and benchmarking over time between places (e.g. units, hospitals)

· Make judgments and set priorities (e.g. choosing a hospital or surgery or organising medical care)

· Support accountability, regulation, and accreditation

· Support quality improvement − Support patients' choice of providers.[5,6]

Quality Characteristics of Indicators [7]

Quality characteristics of the indicators		
1	Relevancy	Relevant to important aspects (effectiveness, safety, and efficiency) and dimensions (professional, organisational, and patient oriented) of quality of care.
2	Validity	Strong correlation with the current quality of care - Valid on the basis of good scientific proof and experience
3	Reliability	Low inter and intra observer variation - Available and reliable date sources - Statistically reliable, i.e. reported as an average or median with confidence intervals and valid for comparison, i.e. corrected for case mix and sociodemographic variables.
4	Feasibility	Easily available - Applicable to quality improvement; i.e. easy to build in improvement initiatives - Sensitive to improvement in time - Useful to base decisions on (caregivers, patients, regulating agencies) - Applying to those who should use them

Criteria used to evaluate potential quality indicators

Face validity: An adequate quality indicator must have sound clinical or empirical rationale for its use. It should measure an important aspect of quality that is subject to provider or health care system control.

Precision: An adequate quality indicator should have relatively large variation among providers or areas that is not due to random variation or patient characteristics. This criterion measures the impact of chance on apparent provider or community health system performance.

Minimum bias: The indicator should not be affected by systematic differences in patient case mix, including disease severity and comorbidity. In cases where such systematic differences exist, an adequate risk-adjustment system should be possible using available data.

Construct validity: The indicator should be related to other indicators or measures intended to measure the same or related aspects of quality. For example, improved performance on measures of inpatient care (such as adherence to specific evidence-based treatment guidelines) ought to be associated with reduced patient complication rates.

Fosters real quality improvement: The indicator should be robust to possible provider manipulation of the system. In other words, the indicator should be insulated from perverse incentives for providers to improve their reported performance by avoiding difficult or complex cases, or by other responses that do not improve quality of care.

Application: The indicator should have been used in the past or have high potential for working well with other indicators. Sometimes looking at groups of indicators together is likely to provide a more complete picture of quality.[8]

Types of Indicators

(i) Structural indicators

'Structure' refers to health system characteristics that affect the system's ability to meet the health care needs of individual patients or a community. Structural indicators describe the type and amount of resources used by a health system or organization to deliver programs and services, and they relate to the presence or number of staff, clients, money, beds, supplies, and buildings. The assessment of structure is a judgement on whether care is being provided under conditions that are either conducive or inimical to the provision of good care.[9,10]

Examples of structural indicators

- Proportion of specialists to other doctors
- Access to specific technologies (e.g. MRI scan)

· Access of specific units (e.g. stroke units)

· Clinical guidelines revised every 2nd year

· Physiotherapists assigned to specific units

(ii) Process indicators

Process indicators assess what the provider did for the patient and how well it was done. Processes are a series of inter-related activities undertaken to achieve objectives. Process indicators measure the activities and tasks in patient episodes of care. Some authors include the patient's activities in seeking care and carrying it out in their definition of the health care process. Others limit this term to care that health care providers are giving. It may be argued that providers are not accountable for the patient's activities and these, therefore, do not constitute part of the quality of care, but rather fall into the realm of patient characteristics and behaviour that influence patients' health outcomes.

Example of Process indicators

· Proportion of patients with diabetes given regular foot care

· Proportion of patients with myocardial infarction who received thrombolysis

· Proportion of patients assessed by a doctor within 24 hours of referral

· Proportion of patients treated according to clinical guidelines

(iii) Outcome indicators

Outcomes are states of health or events that follow care and that may be affected by health care. An ideal outcome indicator would capture the effect of care processes on the health and wellbeing of patients and populations. Outcomes can be expressed as the five Ds

The Five Ds:

(i) Death: a bad outcome if untimely

(ii) Disease: symptoms, physical signs, and laboratory abnormalities

(iii) Discomfort: symptoms such as pain, nausea, or dyspnea

(iv) Disability: impaired ability connected to usual activities at home, work, or in recreation

(v) Dissatisfaction: emotional reactions to disease and its care, such as sadness and anger.

Example of Outcome indicators

Intermediate

· HbA1c results for diabetics

· Lipid profile results for patients with hyperlipidaemia

· Blood pressure results for hypertensive patients

End result (should be specified for diseases)

· Mortality

· Morbidity

· Functional status

· Health status measurement

· Work status

· Quality of life Patient satisfaction

Research methods on the application of indicators

Acceptability

The acceptability of the data collected using a measure will depend upon the extent to which the findings are acceptable to both those being assessed and those undertaking the assessment. For example, the iterated consensus rating procedure consults lay professionals as to the acceptability of indicators. Campbell and colleagues conducted a quality assessment in 60 general practices in England but only used quality indicators rated acceptable and valid by the nurses and doctors working in the practices.[11]

Feasibility

Information about the quality of services is often driven by data availability rather than by epidemiological and clinical considerations.[12] Quality measurement cannot be achieved without accurate and consistent information systems.[13,14] Current administrative data, both at the macro (health authority

or "large organisation") and micro (individual medical records) levels, are constrained by inconsistent and often unreliable data.[15]Medical records are a poor vehicle for collecting data on preventive care and the recording of symptoms.[16] In addition, aspects of care being assessed by quality indicators must relate to enough patients to make comparing data feasible

Reliability

Indicators should be used to compare organisations/ practitioners with similar organisations/practitioners, or confounding factors such as socioeconomic and demographic factors, as well as factors outside the control of practitioners, should be taken into account (that is, compare like with like or risk/case mix adjust). This is because the environment in which an organisation operates affects the care provided.

Examples include admission rates or surgery rates. Indicators must also have explicit exclusion and inclusion criteria for applying the indicator to patients-for example, age ranges co-morbidities, case mix, and clinical diagnoses. The inter-rater reliability of an indicator can also be tested when applying indicators

Sensitivity to change

Quality measures must be capable of detecting changes in quality of care in order to discriminate between and within subjects.[17] This is an important and often forgotten dimension of Lawrence's definition of a quality indicator.

Conclusion

This review article shows that the indicators are instruments to evaluate and improve the quality of care. Clinical indicators measure the extent to which set targets are achieved. They are expressed as numbers, rates, or averages that can provide a basis for clinicians, organizations, and planners aiming to achieve improvement in care and the processes by which patient care is provided. They can be measures of structure, process, and outcome, either as generic measures relevant for all diseases, or disease-specific measures that describe the quality of patient care related to a specific diagnosis. For the healthy population, indicators can also be important with regard to prevention, quality of life, and satisfaction with health care.

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