Selection of Indicators

high level guidance

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Defining Quality of Care

The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge or guidelines *within the given resource setting.*

As compelling as that definition is, it does not provide much guidance to a researcher interested in developing a measure or set of measures. A subsequent IOM report specified seven aims of a high quality medical care system that are more specific

Seven Aims of a High Quality Medical Care (Institute of Medicine, 2001)

- **Safe –** avoiding injuries to patients from the care that is supposed to help them.
- **Effective –** providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse).
- **Patient-centered –** providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
- **Timely –** reducing waits and sometimes harmful delays for both those who receive and those who give care.
- **Efficient –** avoiding waste, in particular waste of equipment, supplies, ideas, and energy.
- **Equitable –** providing care that does not vary in quality because of personal characteristics, such as gender, ethnicity, geographic location, and socioeconomic status

Types of Quality of Care Measures

Donabedian proposed that one could assess whether high quality care is provided by

- examining the **structure** of the setting in which care is provided,
- by measuring the actual **process** of care, and/or
- by assessing what the **outcomes** of care.

Structure

Refers to the characteristics of the setting in which care takes place. Measures of the setting used might include characteristics of

- Physicians and hospitals (e.g., a physician's specialty or the ownership of a hospital);
- Personnel; and/or
- Policies related to care delivery.

Process Measures

- ***Process measures*** assess whether a patient received what is known to be good care.
- They can refer to anything that is done as part of the encounter between a physician or another health care professional and a patient, including interpersonal processes, such as providing information and emotional support, as well as involving patients in decisions in a way that is consistent with their preferences, etc.

Outcomes

- ***Outcomes*** refer to a patient's health status or change in health status (e.g., an improvement in symptoms or mobility) resulting from the medical care received.
- This includes intended outcomes, such as the relief of pain and unintended outcomes, such as complications.
- Although the term “outcomes” is sometimes used loosely to refer to results such as mammography rates, such measures are actually process measures in the Donabedian sense.
- There is also a category of measurement called **intermediate outcomes**. This includes measures like Hemoglobin A1c levels for people with diabetes and blood pressure measurements. These intermediate outcomes are often closely related to other health outcomes.

Which indicators to use (considerations)

1. Perspective
2. Purpose
3. Time
5. Cost consideration
6. Complexity

Perspective

- Inform strategy and policy making at National or Regional level
- Improve Quality of
- health care at a facility or provider level
- **Monitor Performance of health care funders**
- Identify poor performers to inform public policy
- Provide public with information to choose health care providers

Purpose

Explicitly express the rationale for the data collection

1. Is it to measure and improve funding of quality healthcare ?
2. Is it to compare performance of various MCO?
3. Is it for regulation purposes etc?
4. Is it to provide data to national DOH with health data or input into Government data collection system?
5. Is it to inform National government on Vital statistics?

Timelines

How often will the data be utilized.

How long does it take for an occurrence:

i. rare events are difficult to monitor; one needs to allocate a sufficient amount of time
ii. There is high risk of loss to follow-up
iii. It may take a long time for QI

Resource Considerations

- Human capital: Skills/training etc
- Infrastructure: IT infrastructure
- Complexity of data: the more an outcome is explained by various inputs, the more data is required to explain the outcome and control for confounding (case-mix)
- The more data items are collected the more resources are required.

Complexity

- Ability to draw conclusive inferences from data collected confidently (Validity).
- Choosing indicators (outcomes) that can be explained by various inputs requires control for confounding and bias
- More data on confounding variables such as age, gender, severity of the diseases, comorbidities etc. should be collected.

Selecting indicators (Structural Indicators)

Structural indicator are applicable when there is a facility or actual vehicle to provide health care.

This indicators define standards within which to deliver health care

The indicators might be applicable if we are interested in the structure of MCO as stipulated by Regulation 15 A-J

Outcome Indicators

Advantages and disadvantages

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Advantages of Outcome Indicators

- They measures something in its own right.

It is important to know that MR from AMI differs from facility to facility or from country to country even if this has nothing to do with quality of care.

- Outcome measures are of greater intrinsic interest and can reflect all aspects of care, *including those that are otherwise difficult to measure such as technical expertise, operator skill and upstream interventions.*

- Outcome measures maybe a hypothesis generating for a wide range of interventions which are attributable to improved outcomes.

For instance country differences in AMI may be explained by policies on smoking and nutrition, access to health care, funding etc.

Advantages of Outcome Indicators (cont…)

- Outcome measures measure all the processes of care not only those measured.

E.g. Mortality from AMI may include National (smoking legislation/taxes), regional, local or facility interventions as well as provider's technical skill and individual's risk factors.

- When we can say without certainty that the outcome is as a result of quality of care, then outcome measures can be used to infer conclusion about QoC

Advantages of Outcome Indicators (cont…)

- When how you do things is as important as what you do, outcome measures play an important role. E.g. how to give an aspirin is unimportant in caring for MI, however how to do an angioplasty is important. Therefore in this instance, outcome measure is more valuable than process measure.
- In some countries outcome data is freely available, than process indicators. When this is the only data it is worth using it and interpreting within limitations.
- If there is no evidence that process indicators are linked to outcomes, it is better to use outcomes data

Disadvantages of Outcome Measures

- Outcome measures are not direct measures of quality of care as process indicators are.
- Outcome measures such as death are rare and therefore requires a huge sample size to have the statistically power to detect real differences in quality
- Huge amount of data, including case-mix (CONFOUNDING) data such as gender, age, other risk factors, severity of illness needs to be collected.

Cause of AMI mortality rate maybe due to poorly controlled risk factors such as Diabetes and Hypercholestrolaemia. MI maybe more fatal in men than women.

- Cost implications are high for outcome indicators as huge amount of data is required to conclude on differences in Quality of care.
- It is **DIFFICULT** to implement change (QI) when **OUTCOME MEASURES** are used.

In the example above; when we detect differences in Mortality rate it will be difficulty to determine where the problem is. It could be from delay in calling/dispatching ambulance; skills of the provider, availabilty of resources and

Factors To Consider In Mortality Due To AMI

Upstream factors

- Regulations: Diet and smoking control regulations
- Health policy, regulations and resources
- Literacy of the population
- Health care financing

Provincial and Regional level

- Regional and Town planning (ability of walk ways)
- Access to health care
- Content of health care – Guidelines etc.

Facility Level

Health care structures and processes:

staffing, procurement, emergency resources , medications etcetc

Low stream factors

- Genetics
- Socio-economic profile
- Demographic information
- Severity of the disease , pre-morbid health status and other risk factors

Advantages of Process Indicators

- Process measures are intrinsically more sensitive than outcome measures to difference in QoC
- They are easy to interpret

e.g. a process measure such as use of aspirin in reduction of AMI is a direct measure whereas hospital based mortality from AMI is an indirect measure

- Compared to outcome measures, process measures do not always require adjustment for confounders or case mix adjustment.
- Information from Frequent occurrences (e.g. all AMI patients must receive aspirin but not all AMI patients should receive **Ticagrelor)**
- When frequent occurrences are used differences can be detected using small sample sizes.

Advantages of Process Indicators (cont…)

- It is easier to implement change (QI) when process indicators are detected.

E.g. if aspirin is not used, a corrective measure will include improvement in use of aspirin to prevent mortality. However if outcome measure of death is used, one will have to first audit pathway of care to determine where the problem is.

- Process measures measure quality as it is. They do not require case mix adjustment and the differences are less likely to be explained by confounding factors.

Key Characteristics of Ideal Indicator

An ideal indicator would have the following key characteristics:

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; and

vii. indicator is evidence-based

Each indicator must be defined in detail with explicit data specifications in order to be specific and sensitive.

Category of Indicators (based on current HIV indicator discussion)

- Rate-based or sentinel
- Related to structure/process/outcome
- Generic or disease-specific
- Type of care
  - Preventive
  - Acute
  - Chronic
- Function
  - Screening
  - Diagnosis
  - Treatment
  - Follow up
- Modality
- History
- Physical examination
- Laboratory/radiology study
- Medication
- Other interventions

Conclusion

- Process measures are direct measures of health care quality.
- Due to frequency o occurrence of this events, differences can be explained using small sample size
- Process measures are much easier to interpret.
- It is often cheaper to collect process vs. outcome measures.

QUESTIONS???