



HOW TO DEVELOP QUALITY INDICATORS?

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Disclosures

- No disclosures or conflicts of interest

Objectives

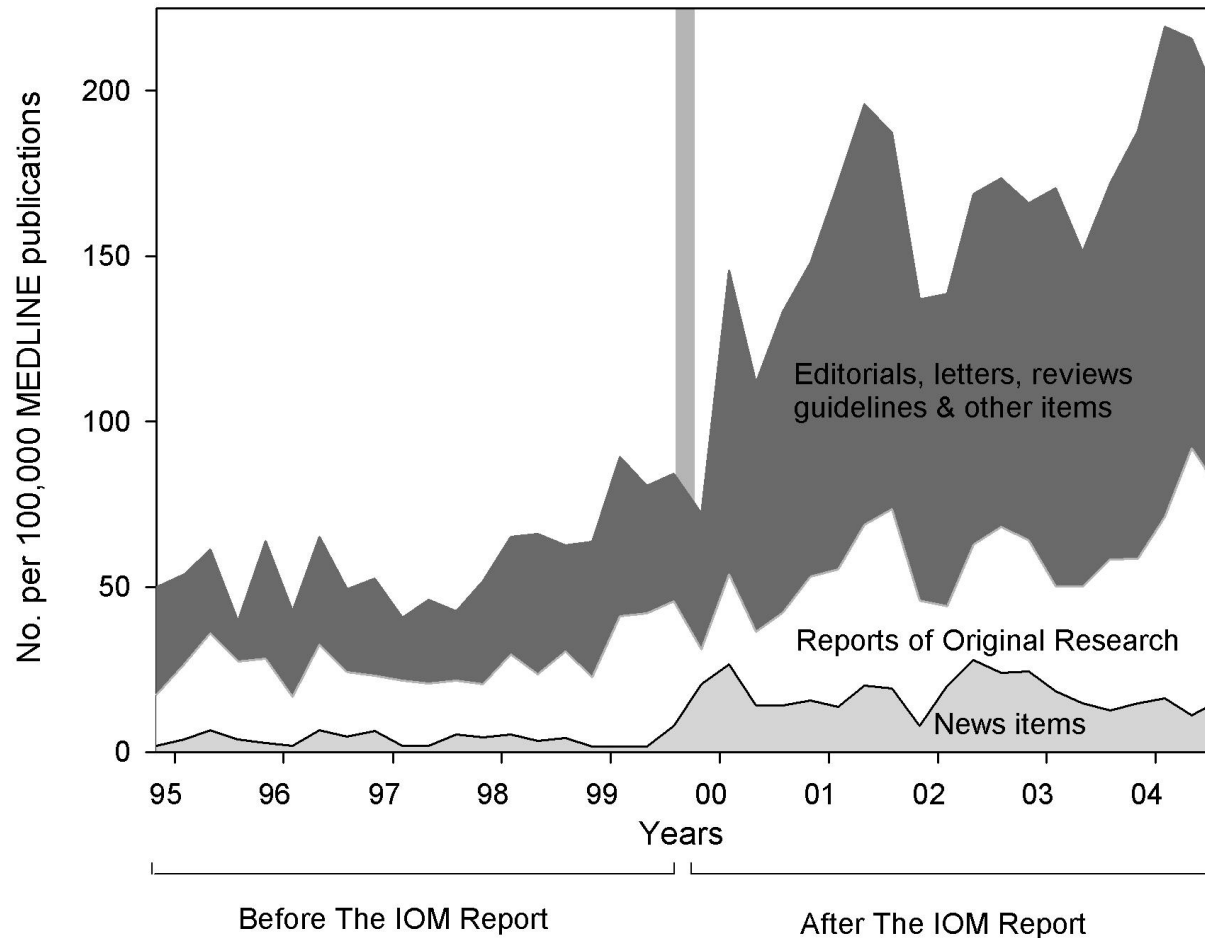
1. Emphasize the importance of measuring health care quality
2. Overview of quality indicators
3. Describe a quality indicator development process
 - ▣ J Clin Epidemiol 2013

Problem – Quality of Care

- 98,000 die in US hospitals from error each year

- Quality problem includes critical care:
 - Patients do not receive recommended care
 - Medical errors & adverse events are common

Patient Safety Publications Before & After IOM Report



Personal Experience with Error

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Response	Physicians (N=831)	Public (N=1207)	P-value
Error made in own or family member's care	35%	42%	<0.001
Health consequences			
Serious	18%	24%	<0.001
Minor	10%	13%	0.03
None	7%	5%	0.06

The Challenge – Quality Measurement & Improvement

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**“If you can’t measure it you can’t
manage it”**

Peter Drucker

What is the Quality of Care?

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The Globe and Mail, Tuesday, February 10, 1998

Annual report card sought for hospitals

Standard criteria
needed, expert says

BY JANE COUTTS
Health Policy Reporter

EDMONTON — Giving the public better access to health information will force improvements by hospitals and other health-care providers, a top health expert says.

"I believe every health organization in Canada should put out an annual report card," said Michael Decter, a former deputy minister of health in Ontario who is now chairman of the Canadian Institute of Health Information.

He told a national conference on

Heart Bypasses Are Safer, Study Shows

But a Few Hospitals Fall Below Average

By ELISABETH ROSENTHAL

The safety of cardiac bypass surgery in New York State hospitals has continued to improve, although a few hospitals and surgeons had track records that were significantly worse than the average, state health officials reported yesterday.

In releasing its annual survey of the bypass operations, the State Health Department described the results as extremely good, since the chance of dying after bypass surgery in New York is lower than that reported from any other area of the country.

"Patients in New York are lucky," said Dr. Barbara DeBuono, the State Health Commissioner, noting that the chance of dying from the procedure had decreased almost 50 percent in the last five years.

But the study, which each year evaluates 31 hospitals and dozens of cardiac surgeons performing bypass surgery in the state, also raised red flags regarding some hospitals and doctors, pointing to areas that need improvement. Three upstate hospitals — Buffalo General, Strong Memorial in Rochester and University Hospital Upstate Medical Center in Syracuse — showed performances that were statistically worse than the statewide norm.

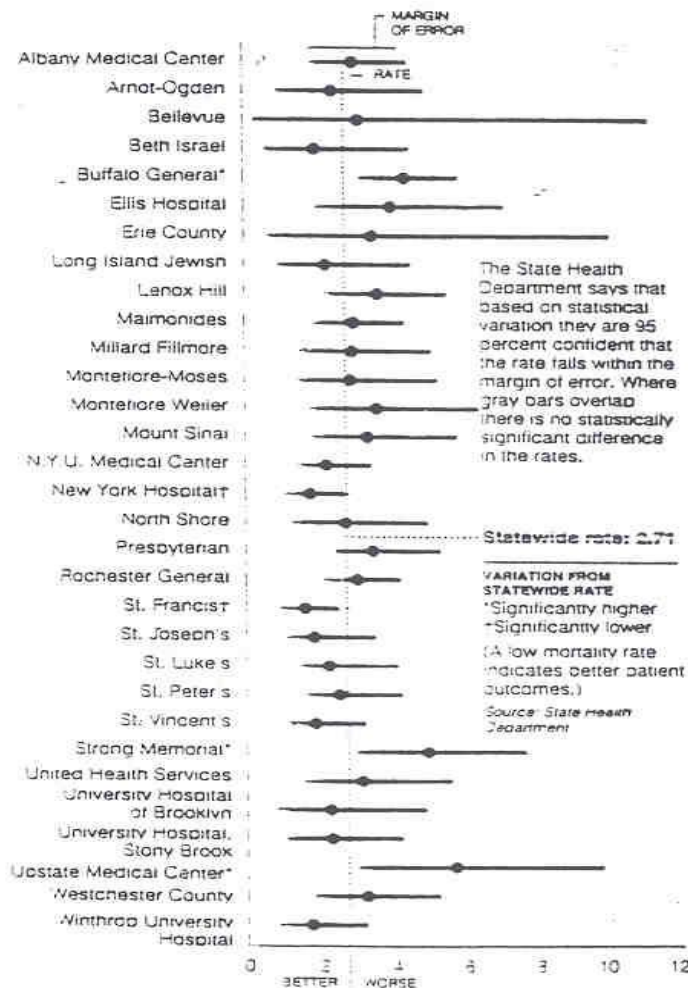
Based on 1993 data, the state found that two hospitals, Saint Francis Hospital in Roslyn, L.I., and New York Hospital-Cornell Medical Center in Manhattan, had unusually good statistical ratings this year, according to the report. Although the rates of the remaining 26 hospitals differed somewhat, they were statistically indistinguishable, said state health officials.

The three hospitals that fared poorly in the report said that state's statistics were outdated, that the analysis did not adequately take into account how sick patients were before surgery and that the state's method of statistical analysis could incorrectly identify a hospital as a

RATES

How the State's Hospitals Fared

Risk-adjusted mortality rates of New York State hospitals performing coronary artery bypass surgery. This rate is adjusted for the fact that some hospitals have higher-risk patient populations than others.



What are Quality Indicators?

- Performance measure
- Borrowed from industrial process control systems literature
- National Library of Medicine defines “qualitative & quantitative measures used in determining the quality of care”

Sample Quality Indicators

Industrial Process Indicator

- Cycle time = total time from the beginning to the end of your industrial process as defined by the producer & customer

Healthcare Indicator

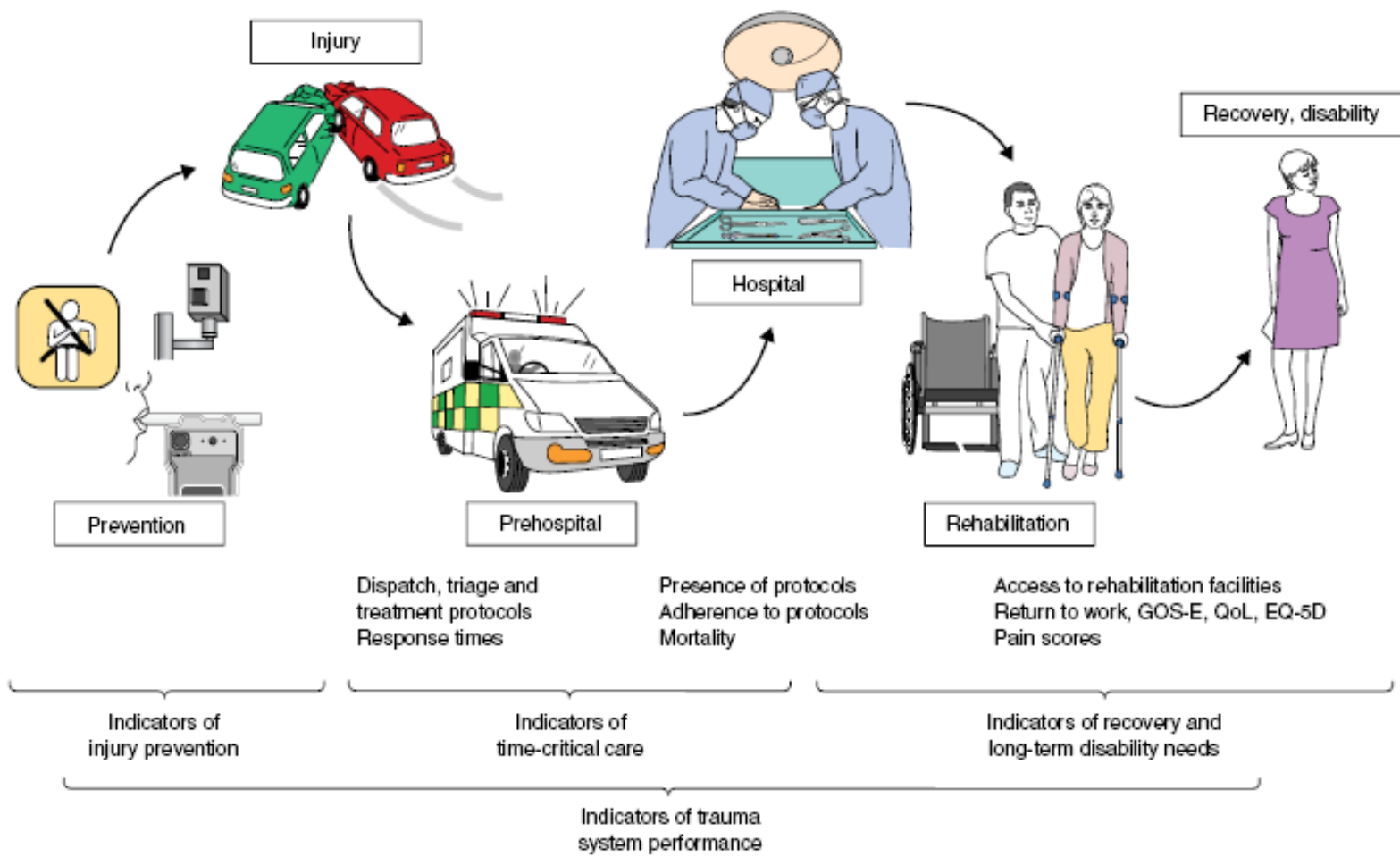
- Time to first medical contact = time from onset of symptoms to first medical contact

Quality Indicator Development Overview

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- Develop a measurement framework
- Determine if quality indicators are needed
- Establish quality indicator criteria
- Select a development approach
- Evaluate the indicators developed
- Develop a maintenance plan
- Develop an implementation plan

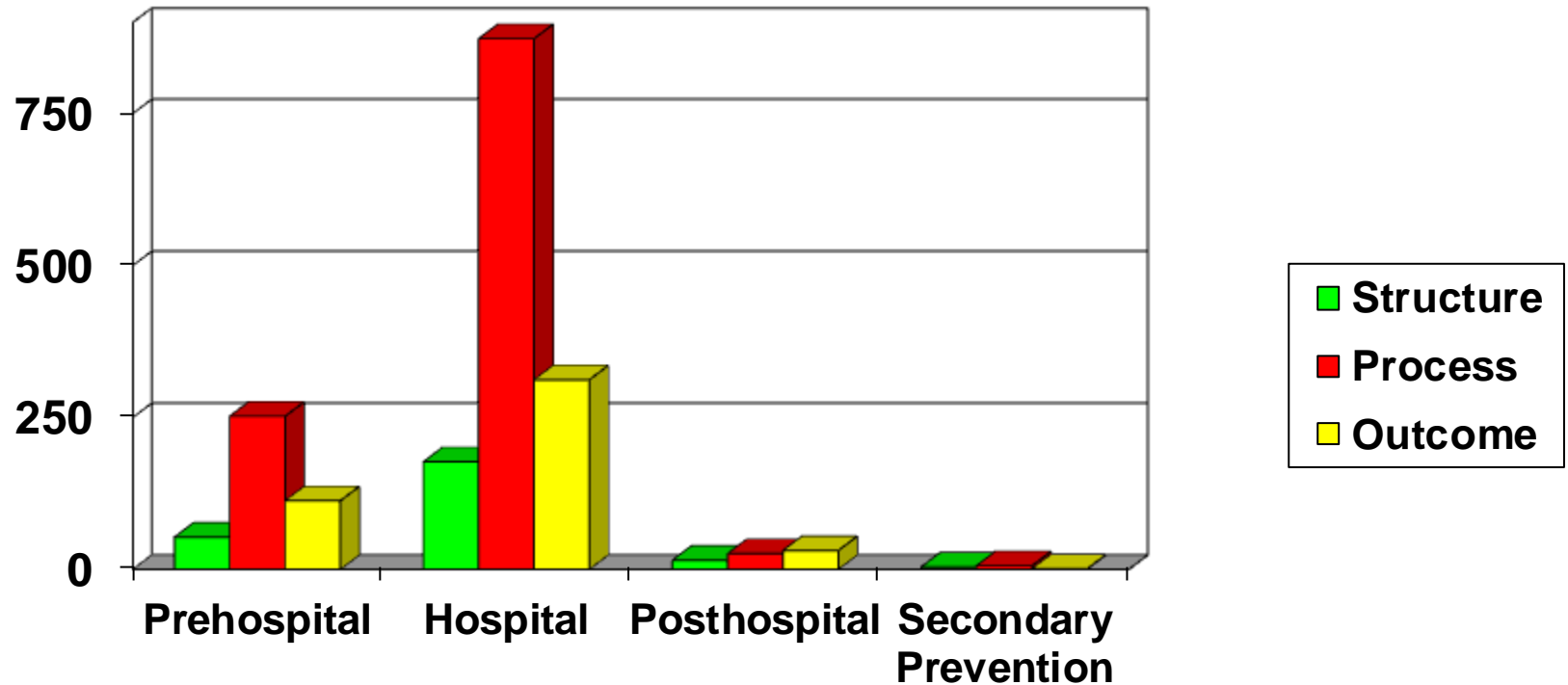
Conceptual Measurement Framework



Do you need a Quality Indicator?

- Burden of illness
 - Is this an important problem?
- Opportunity for improvement
 - What is the current quality of care?
- Better care & better health
 - Will improving quality of care improve patient health?
- Gaps in existing quality indicators
 - what are the existing quality indicators?
 - What is the supporting evidence base?
 - What indicators are currently used in practice?

Scoping Review Quality Indicators



Quality Indicator Criteria

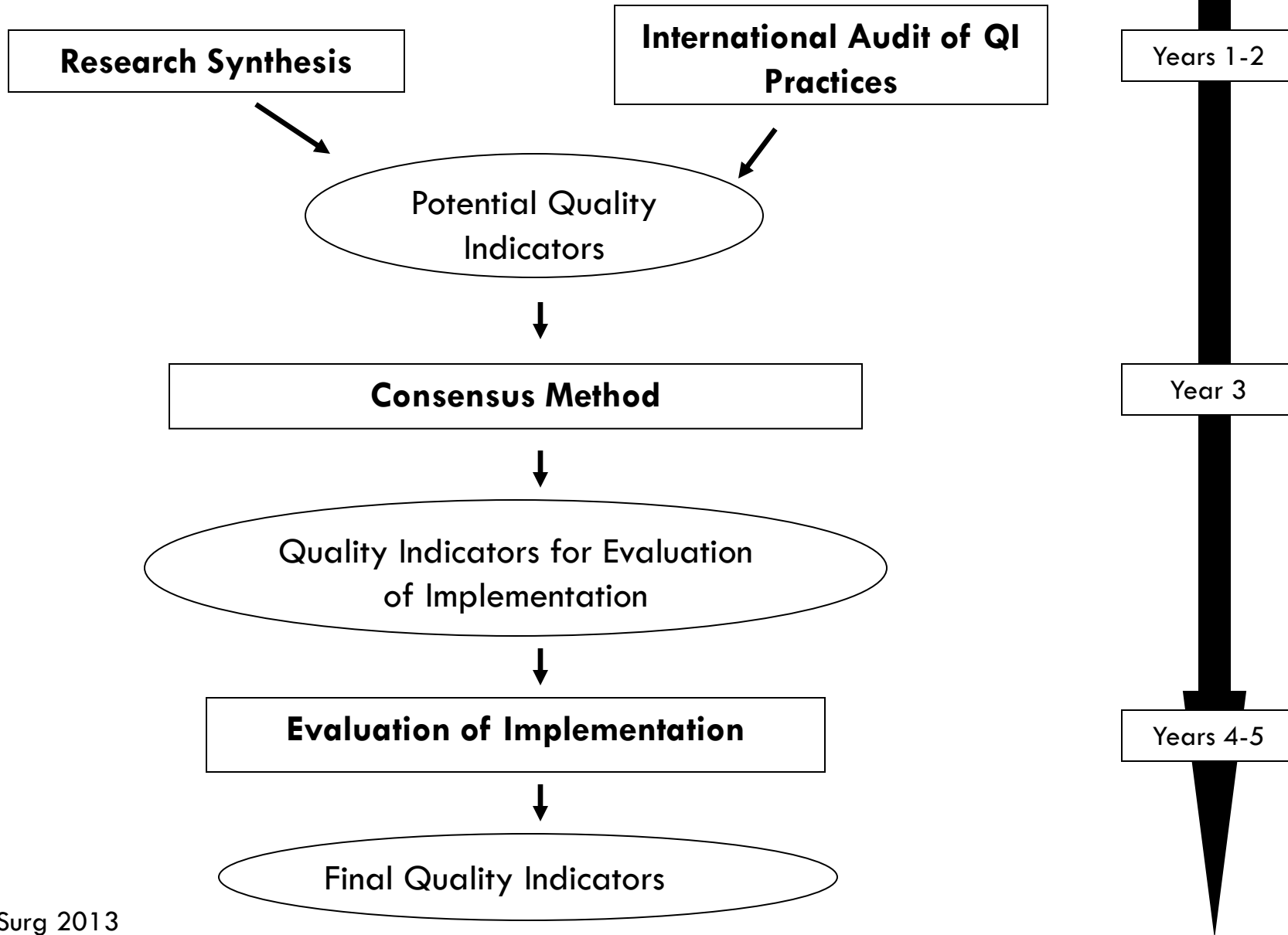
- **Important** – audiences will find the information useful for a purpose
- **Scientifically sound** – measure will produce consistent & credible results
- **Feasible** – can be implemented
- **Usable** – target audience can understand the results & use for decision making

Development Approaches

- Deductive approach
 - Concept → data
 - E.g., door-to-balloon time for myocardial infarction

- Inductive approach
 - Data → concept
 - Common approach used for local quality improvement

Quality Indicator Development



Sample Indicator

23. Spine Evaluation

Description of Indicators

Relationship to Quality	Medical care should be safe and effective
Type of Indicator	Hospital process, Hospital level
Proposed Data Sources	Hospital Medical Record
Definition	Number of patients with evaluations and decisions regarding immobilization of the spine within 36 hours of hospital admission per 100 patients
Numerator	All patients age 18 years and older admitted to hospital with an injury diagnosis from a blunt force mechanism AND documented assessment of the cervical, thoracic and lumbar spine AND decision to continue OR discontinue spine immobilization* within 36 hours of admission to hospital*
Denominator	All patients age 18 years and older admitted to hospital with an injury diagnosis from a blunt force mechanism
Benchmark	Not specified at present
Risk Adjustment	Not applicable

Key Development Issues

- Clear purpose & goal
- Evidence, expertise & patient perspectives
- Consider context & variation
- Data collection & management

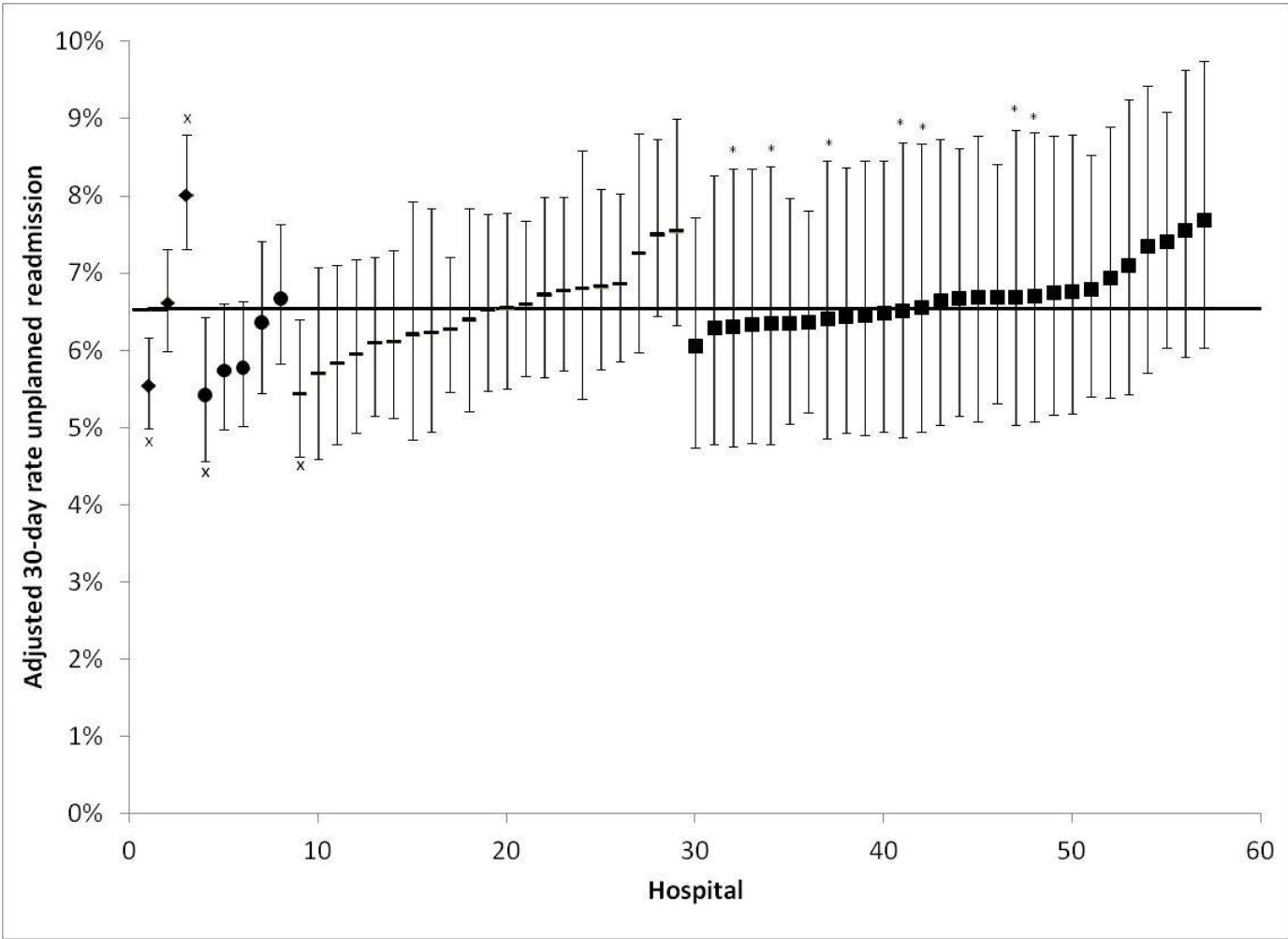
Evaluating Quality Indicators

- How strong is the scientific evidence?
- Are all individuals in the denominator equally eligible for inclusion in the numerator?
- Is the measure result under control of those whom the measure evaluates?
- How well do the specifications capture the event?
- Does the measure provide for fair comparisons?
- Does the measure allow for exclusion of rare performance related characteristics when appropriate?

Evaluating Quality Indicators

- Reliability
 - Consistency or stability of the measure
- Criterion validity
 - Does the quality indicator agree with a reference standard
- Case-mix
 - Influence of comorbid illness & illness severity
- Impact analysis
 - Processes & outcomes of care
 - Resource requirements

Risk Adjusted Hospital Readmission



When & How to Update?

- Regular review
 - Clinical systematic reviews \approx 2 yrs (Shojania)
 - Clinical practice guidelines \approx 5 years (Shekelle)

- Ad hoc review
 - update triggered by new science

- Review outcomes
 - Retain vs. revise vs. replace vs. retire

Implementation

- Integrated knowledge translation
 - Target most urgent needs of end users
 - Identify facilitators & barriers to implementation
 - Engage users in evaluation & maintenance

- Packaging indicators for ease of use
 - End user organizations may post
 - Incorporate into accreditation standards
 - National Quality Measures Clearinghouse
 - www.qualitytraumacare.com

Review

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Those Ontario Hospital Ratings....

A+

C-

Left!
Go left!



R.T. Pie

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