

Healthcare Indicators: Policy Context and Impact

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SickKids

*Enhancing the effectiveness of health care
for Ontarians through research*

ICES Institute for Clinical
Evaluative Sciences

Clostridium difficile (C. difficile)	Sept 30, 2008
Methicillin-resistant Staphylococcus aureus	Dec 31, 2008
Vancomycin-resistant Enterococci (VRE)	Dec 31, 2008
Hospital Standardized Mortality Ratio (HSMR)	Dec 31, 2008
Rates of ventilator-associated pneumonia	April 30, 2009
Rates of central line infections	April 30, 2009
Rates of Surgical site infections –Hips and Knees	April 30, 2009
Hand hygiene compliance among health care workers	April 30, 2009

Objectives

- **Put some context around all of the work we do in health system performance measurement**
- **Discuss methods for measure development**

Provincial Mandate For Quality

- **Bill 8 –The Commitment to the Future of Medicare Act June 17, 2004**

"Bill 8 is the cornerstone of our plan to transform and strengthen Ontario's health care system," Smitherman said. "We are building a public health care system that's committed to accessible, top-quality patient care, and is accountable to the people of Ontario"

Bill 8

- establishment of accountability agreements between the ministry and health care providers;
- inception of an independent Ontario Health Quality Council to report on our health care system in areas including wait times, to determine where improvements are needed and where progress is being made

Healthcare Quality

- **“the degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge”**
 - ▶ **Institute of Medicine**

Domains of Quality

- ▶ **Safety***
- ▶ **Effectiveness***
- ▶ **Efficiency***
- ▶ **Patient-centredness**
- ▶ **Timeliness**
- ▶ **Equity**
- ▶ **Acceptability†**
- ▶ **Accessibility †**
- ▶ **Appropriateness †**
- ▶ **Competence †**
- ▶ **Continuity †**

* IOM and CIHI

†CIHI only

Performance Measurement

- **PM – operationalizing how we measure quality**
- **Types of Measures**
 - ▶ **Process**
 - ▶ **Outcome**
 - ▶ **Structure**

 - ▶ **Big Dot**
 - ▶ **Little Dot**

Goals

- **Accountability**
- **Quality Improvement**
- **Formidable examples of clinical system change with performance measurement as part of the core activity**

Example of the US Veteran's Affairs “turnaround”

- **mid 1990's Dept of Veteran's Affairs initiated a system-wide reengineering of its healthcare delivery system**
 - ▶ **systematic approach to**
 - **prioritizing important conditions and developing evidence-based measures of care**
 - ▶ **Detailed process-oriented measures**
 - **implementing data systems to both measure and improve these indicators**
 - **directing responsibility for measures (accountability)**
 - **Using independent audits**
 - **Public reporting**

Changes in Quality of Care Measures – US VA System

% pts receiving	1994/5	1997	2000
Mammography	64	87	90
Influenza vaccine	28	61	78
Annual HgA1C (diabetics)	51	84	94
Annual Eye Exam (diabetic)	48	69	67
Beta blocker post MI	70	92	95

Source: Jha et al, *Effect of the transformation of the Veteran's Affairs Health Care System on the Quality of Care* **NEJM 2003** 348:2218-27

?Value of Public Reporting

- **Contraversial**

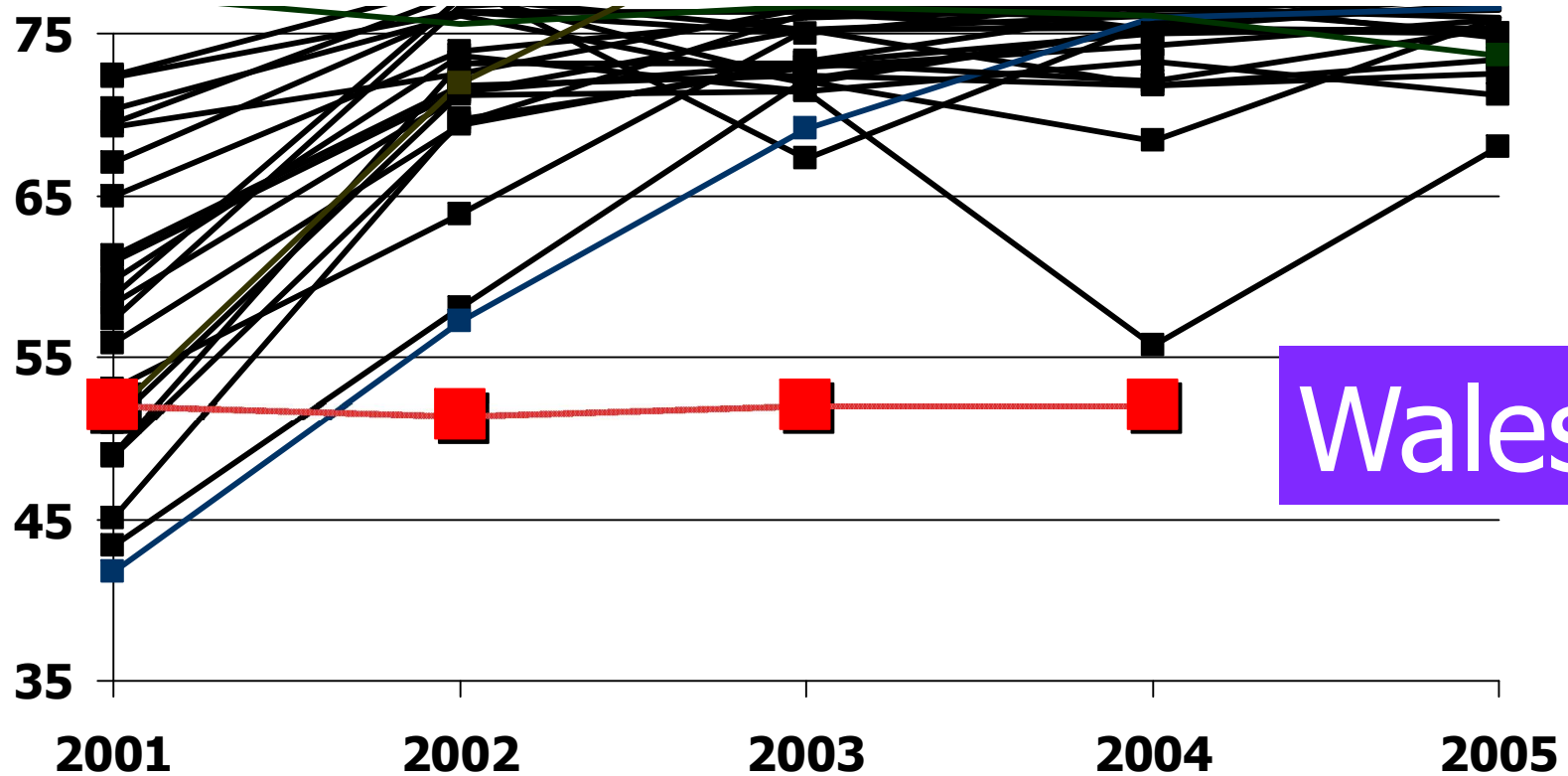
Fung CH et al (RAND) Annals of Int Med, 2008 48(2):111-23 “Systematic review: the evidence that publishing patient care performance data improves quality of care. “

- **Moderate evidence that public reporting is associated with QI efforts for hospitals**
- **Unintended consequences depending on the policies around the consequences of the performance**
- **Examples of successful system improvement without public reporting (eg. Germany)**
- **Currently supported by MoHLTC**

Category A calls < 8 minutes (England)



% within 8 minutes

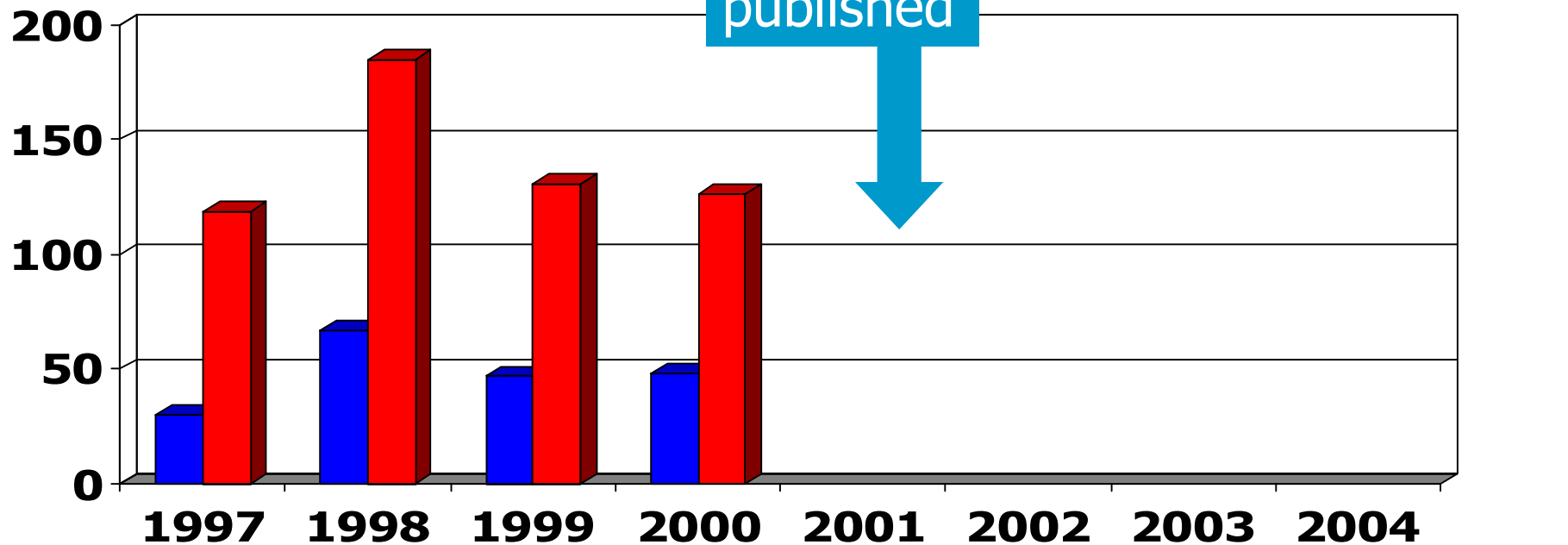


Wales

With thanks to Gwyn Bevan, London School of Economics

Waiting time targets elective admission (England)

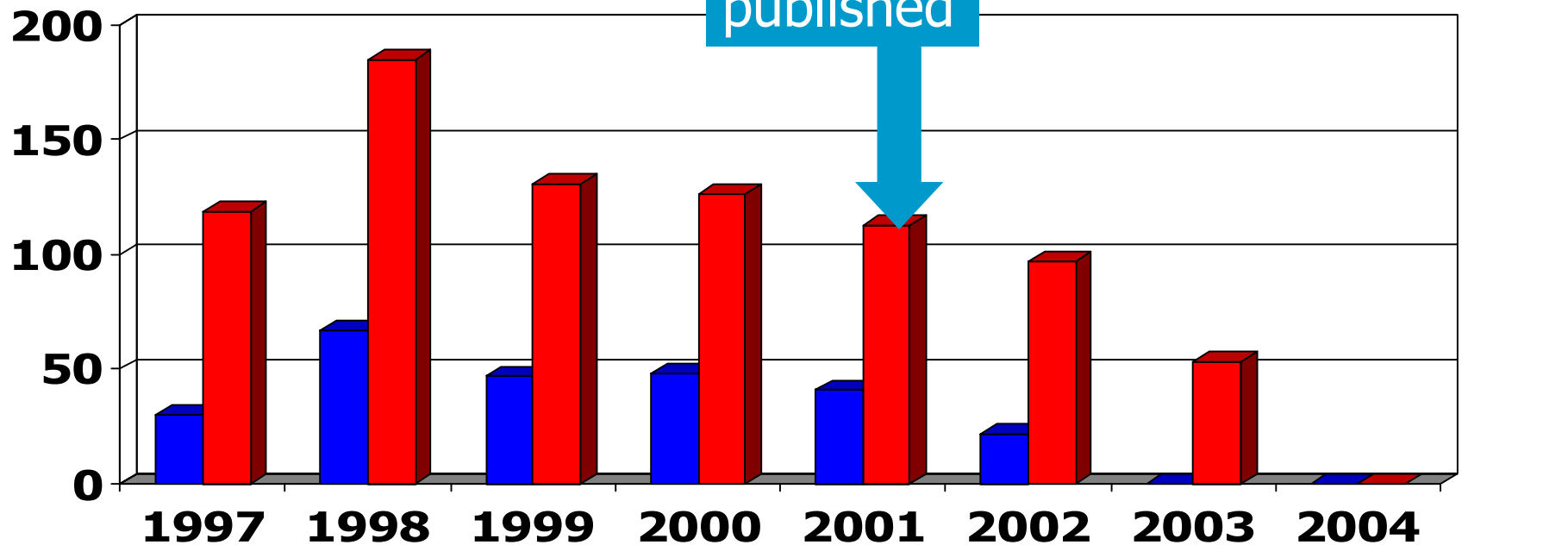
Numbers waiting
elective admissions
(^000s)



Source: Chief Executive's Report to the NHS – Statistical Supplement (2004)

Waiting time targets elective admission (England)

Numbers waiting
elective admissions
(^000s)



Source: Chief Executive's Report to the NHS – Statistical Supplement (2004)

First Steps

- **Hospital Report Card**
- **Tie some performance measures around extra \$**
 - ▶ **Wait times**
 - Cancer
 - Hips and Knees
 - Cataracts
 - Cardiac Surgery
 - MRI/CT
- **Public Reporting of Safety Measures**
- **Scorecards galore**

Hospital Report



EMERGENCY DEPARTMENT CARE

HOSPITAL REPORT
HRRC
RESEARCH COLLABORATIVE

A joint initiative of the Ontario Hospital Association
and the Government of Ontario



Canadian Institute
for Health Information
Institut canadien
d'information sur la santé

Ontario Hospital Report Card

- **System level reporting since 1998**
- **4 quadrants**
 - ▶ **Clinical utilization and outcomes**
 - ▶ **Financial performance and condition**
 - ▶ **Patient satisfaction**
 - ▶ **System integration and change**
- **100% participation**
- **Reporting to “raise the bar”**
 - ▶ **name and fame vs. blame or shame**



“HIGH-PERFORMING” HOSPITALS

HIGH-PERFORMING HOSPITALS WITHIN QUADRANTS

System Integration and Change

Criteria
Highest score (or 100) on one indicator and above-average score on at least 3 of 7 indicators and no below-average score on any indicator

High-Performing Hospitals

- Alexandria Hospital
- Campbellford Memorial Hospital
- Guelph General Hospital
- Halton Healthcare
- Kingston General Hospital
- The Willett Hospital
- Toronto East General Hospital

Patient Satisfaction

Criteria
Above-average rating on 4 out of 4 indicators

High-Performing Hospitals

- Alexandria Marine and General Hospital
- Almonte General Hospital
- Ampriz and District Memorial Hospital
- Carleton Place and District Memorial Hospital
- Deep River and District Hospital
- Grey Bruce Health Services
- Haliburton Highlands Health Services
- Huron Perth Healthcare Alliance
- Remypville District Hospital
- Listowel and Wingham Hospitals Alliance
- MICs Group of Health Services
- Perth and Smiths Falls District Hospital
- St. Francis Memorial Hospital

Clinical Utilization and Outcomes

Criteria
Above average on 3 of 7 indicators and no below-average score on any indicator (please note that the three new pediatric indicators are not included in the high-performing methodology).

High-Performing Hospitals

- Hotel Dieu Hospital, Kingston
- Lake of the Woods District Hospital
- University Health Network

Financial Performance and Condition

Criteria
Hospitals with scores 0.5 standard deviations (SD) above the provincial average, in 3 of 3 indicators. (Please note that the % Management and Operational Support Staff indicator is not included in the high-performing methodology.)

High-Performing Hospitals

- Almonte General Hospital
- Carleton Place and District Memorial Hospital
- Deep River and District Hospital
- Hotel Dieu Hospital, Kingston
- Nipigon District Memorial Hospital
- North Wellington Health Care
- Services de santé de Chapleau Health Services
- South Huron Hospital
- St. Francis Memorial Hospital
- St. Michael's Hospital
- The Willett Hospital

For quality improvement purposes, the Hospital Report series has developed methodologies to identify “high-performing” hospitals within each of the four quadrants in emergency department care.

It is useful to highlight hospitals that performed well in particular quadrants when compared to their peers, because these hospitals may be able to share useful ideas and best practices with other hospitals within the specific areas of focus. It is interesting to note that no hospitals were identified as high performing across all four quadrants. This illustrates the importance of using a variety of measures, such as a balanced scorecard approach, when looking at hospital performance. Good performance in one quadrant does not necessarily translate into good performance in another quadrant.

In addition, high performance in a given year relates only to how hospitals perform based on the indicators calculated for that particular year. High performance is not necessarily a predictor of high-performing status in future years.

High-performing hospitals are listed in alphabetical order.



From the CHEO Media Department

- News Releases
- *July 16, 2001*

CHEO Receives Top Marks: Hospital Report Card

OTTAWA — The Children's Hospital of Eastern Ontario received high marks as the Ontario Hospital Association released the comparative standings of hospitals across the province today. Once again CHEO strengths were revealed through the feedback of our most important stakeholders — patients and their families. We ranked above average in all patient satisfaction indicators, which included overall opinions, and satisfaction with care and services as well as physician and nursing care.

- **Supported by the Hospital Report Research Collaborative**
 - ▶ Independent, third party investigators from a number of institutions
 - ▶ Development of measures of quality of care
 - ▶ Hospital Surveys – patient satisfaction, resources
- **Morphed into Health System Performance Research Network**
 - ▶ Supporting scorecard development and capacity

Mommy, where do performance measures come from?



Framework

- **Relevant**
- **Sound**
- **Feasible**

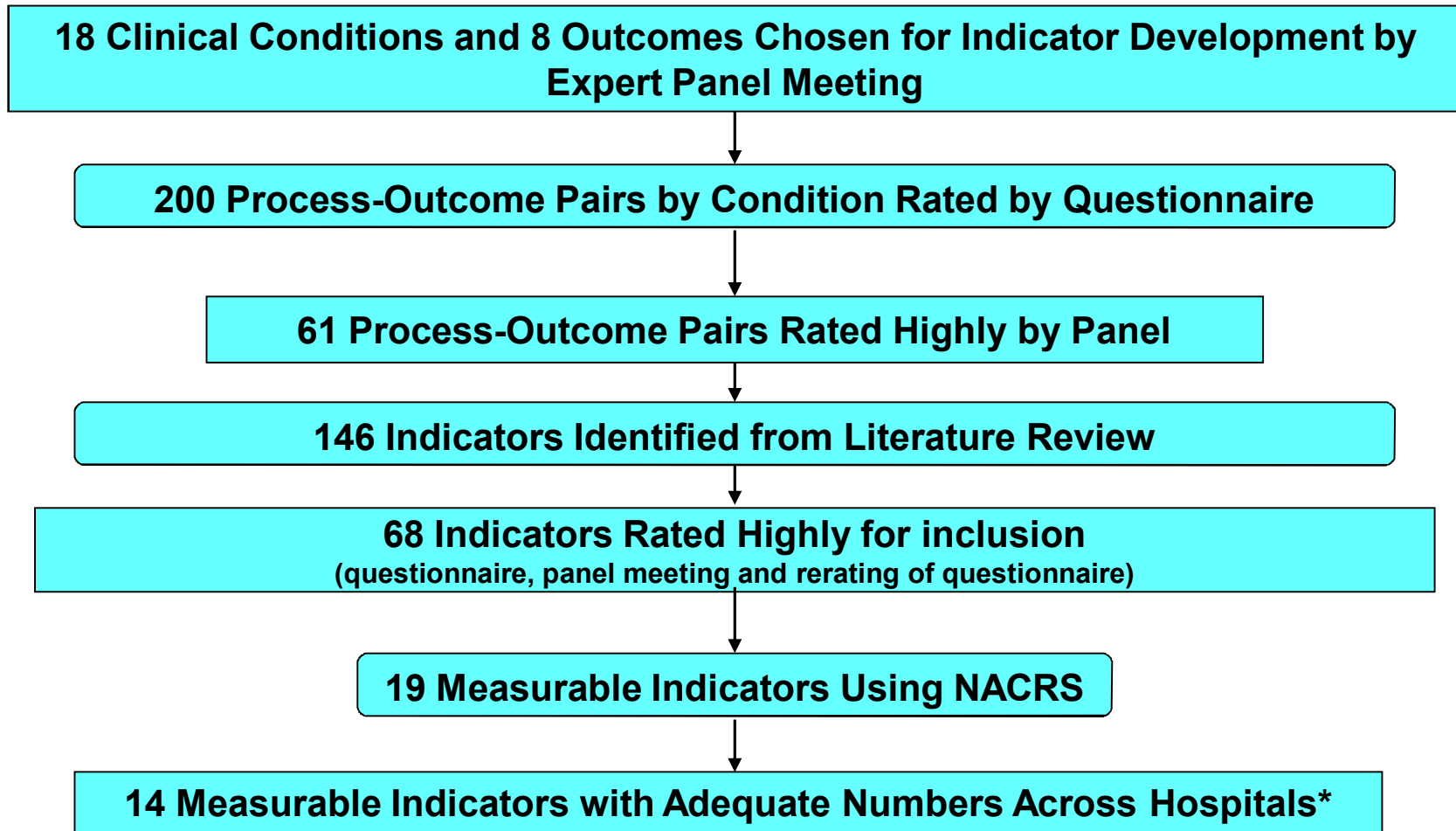
Methods

- **Usually based on a mixture of evidence and expert opinion**
 - ▶ **Validity**
- **Key elements are**
 - ▶ **Scope (whose performance are you measuring)**
 - ▶ **Audience – ie users**
 - ▶ **Credibility of the process**
 - **We rely heavily on Modified Delphi processes**
 - **Criticism from purists about level of evidence**
 - **Criteria for rating**

Example

- **ED Care for children**

Flow Chart of Indicator Development



* Fewer than 25% of hospitals with less than 5 cases

Indicator Example -- Asthma

- **% d'ced home with tx of oral steroids**
- **% d'ced home with written care plan**
- **Unplanned return visit (<24h, 24-72h)***
- **% admitted to hospital with steroids commenced in ED**
- **% pts receiving CXR***
- **% pts treated with antibiotics**

*measurable in administrative data

SUMMARY OF RESULTS (CONT'D)

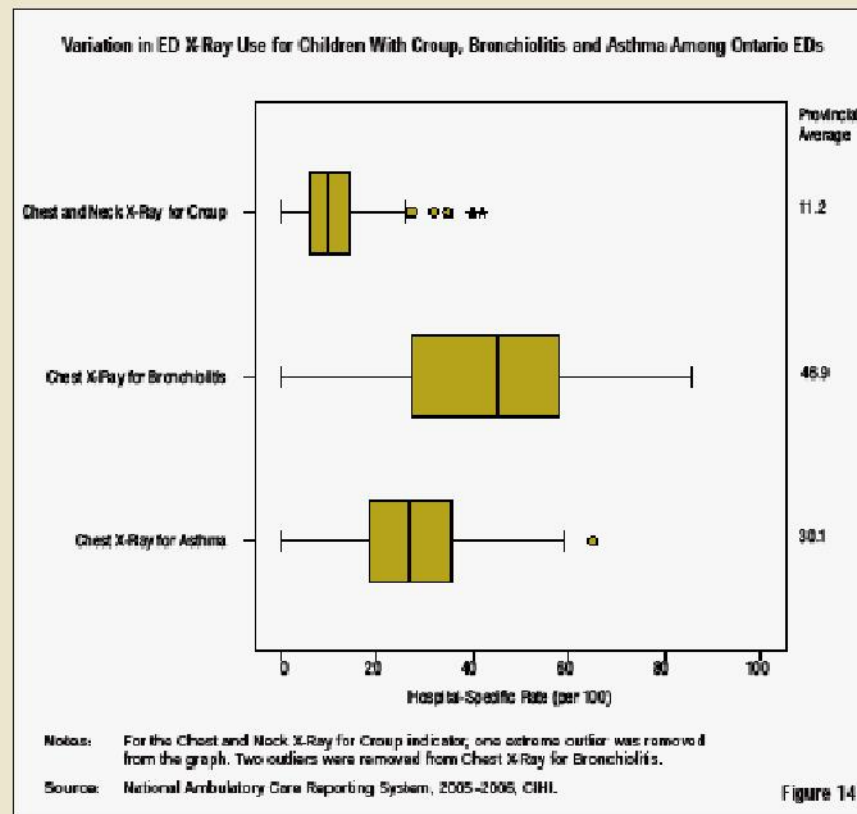


Figure 14 illustrates the distribution of scores for all hospitals and the provincial average (mean) score for the new pediatric indicators. These new indicators were developed by Gutmann et al. (2006)^{xi} to provide a more comprehensive assessment of the quality of ED services by examining pediatric ED care.

Provincial Variation in ED X-Ray Use for Children

The results in Figure 14 and Table 3 show that a chest X-ray for bronchiolitis is a fairly common procedure within the ED, with almost half of children receiving an X-ray. However, these rates vary markedly among the EDs across the province, indicating that clinical practices may differ between EDs. Chest X-rays for asthma and chest and neck X-rays for croup have lower rates, on average, compared to chest X-ray rates for bronchiolitis. However, these indicators also show variation across EDs. More research is required to determine the appropriate rate for these indicators. However, hospitals with very high or very low scores may want to initiate an assessment into the reasons for this variation from the average. Variation in these rates may be a result of differences in the patient population (that is, atypical patients with additional comorbidities) as well as differences in clinical practice for the management of these conditions.

xi A. Gutmann, A. Rezaei, P. Lindsay, B. Zagorski and G. M. Anderson. "Development of Measures of the Quality of Emergency Department Care for Children Using a Structured Panel Process". *Pediatrics* 118, 1 (July 2006): pp.114-123, [online], cited December 1, 2006, from <<http://www.pediatrics.org/cgi/content/full/118/1/114>>.

SUMMARY OF RESULTS (CONT'D)

Until recently, clinical practice guidelines for bronchiolitis and croup were not available. Results from the *Hospital Report 2007: Emergency Department System Integration and Change Survey*, also revealed that over one-third (40%) of Ontario Emergency EDs completing the survey do not use clinical practice guidelines for the treatment of croup. This may explain the variation in X-ray use observed across the province for 2005–2006. Clinical practice guidelines are currently available to hospitals and physicians for the management of these conditions.^{vii, viii, ix, x}

Table 3. Variation in ED X-Ray Use for Children With Croup, Bronchiolitis and Asthma Across LHIMs

	LHIM	Chest and Neck X-Ray for Croup	Chest X-Ray for Bronchiolitis	Chest X-Ray for Asthma
1	Grav St. Clair	12.3	52.0	33.4
2	South West	7.1	30.8	23.2
3	Western Wellington	13.7	54.4	35.7
4	Hamilton Niagara/Welland District	14.4	50.0	34.3
5	Central West	14.9	60.6	35.1
6	Mississauga Halton	10.7	51.8	31.5
7	Toronto Central	10.2	45.1	23.9
8	Central	12.6	53.6	34.3
9	Central East	9.3	51.5	23.4
10	South East	10.9	37.4	25.0
11	Champlain	7.4	25.7	22.5
12	North Simcoe Muskoka	11.7	57.2	34.2
13	North East	14.5	38.6	23.8
14	North West	16.5	61.2	34.9
	Ontario	11.7	48.9	30.1

Sources: National Ambulatory Care Reporting System, 2005–2006, CIHI.

vii U.S. National Institutes of Health, *Practical Guide for the Diagnosis and Management of Asthma*, 1991, [online], cited June 8, 2007, from <http://www.nhlbi.nih.gov/health/qual/asthma/pragdel/pragdel.pdf>.

viii American Academy of Pediatrics, *Clinical Practice Guideline: Diagnosis and Management of Bronchiolitis*, 2006, [online], cited June 8, 2007, from <http://aappolicy.aappublications.org/cgi/abstract/pediatrics.118/4/1774.pdf>.

ix Scottish Intercollegiate Guidelines Network, *Bronchiolitis in Children: A National Clinical Guideline*, 2005, [online], cited June 8, 2007, from <http://www.sign.ac.uk/pdf/sign91.pdf>.

x Allergic Medical Association, *Guideline for the Diagnosis and Management of Croup*, 2007, [online], cited June 8, 2007, from http://www.wtopdental.com/AM/Template.cfm?CFID=17284BED-688A-68A99341B38A/Doc/oup_guideline.pdf.

Methodological Issues

- Risk Adjustment
- Data Quality
- Process to evolve indicators
- Ways to use indicators together
 - ▶ Composite
 - ▶ Suites of measures

Issues

- **Huge controversy about how perfect measures need to be and the unintended consequences of their use**
 - ▶ **More a policy than a pure measure issue**
- **Although assigning accountability is key (ie know whose performance you are measuring) system level performance is important but few measures exist**

Conclusions

- Performance measurement is here to stay
- Impact will be related to whether accountability is the goal
- Admin data will always have a role although this will depend in part on use
- Lots of room for methodological work to improve the art of performance measurement