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Reducing Harm | Improving Healthcare | Protecting Canadians

or will

How do you know that the surgical checklist is making a meaningful impact in surgical care?...

Why measurement is important.

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Objectives

- To review and understand the purpose, application and structure of measurement for improvement
- To look at how data can be used to drive improvement
- To review potential SSC Measures

"It is not acceptable for hospitals to make blanket statements about providing high-quality care without backing it up with proof."

Dr. Jack Kitts, President & CEO The Ottawa Hospital
Metrics for Healthcare: The Leader's Role.
CMAJ, Feb.2010

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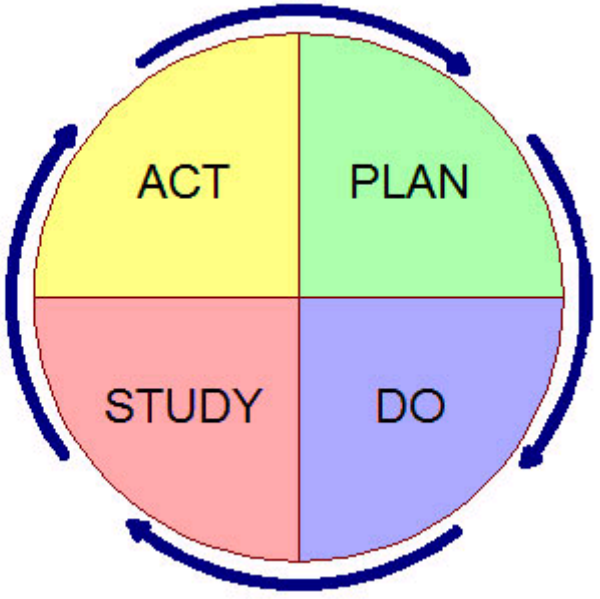
Fundamental questions for improvement

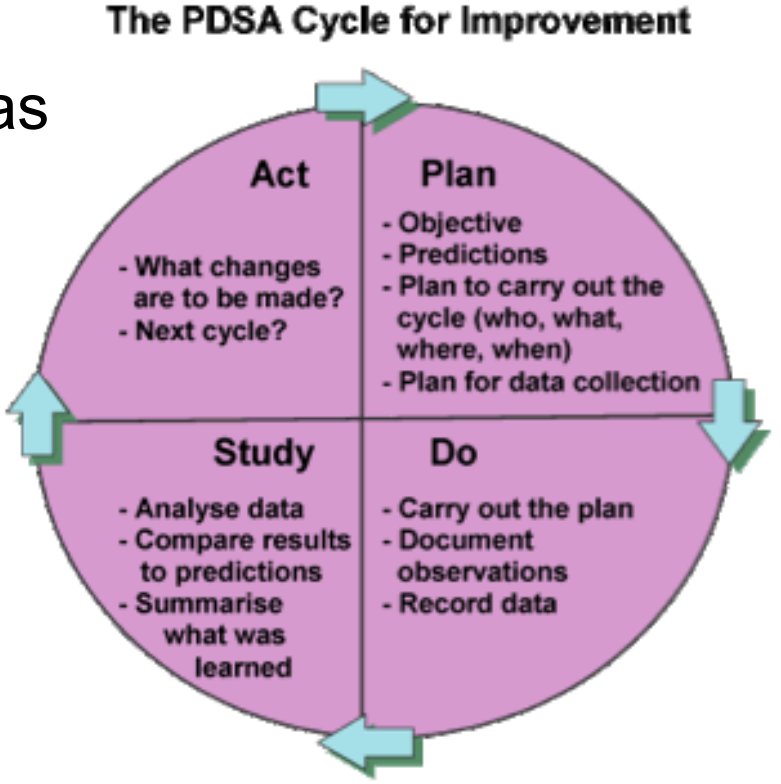
Model for Improvement

What are we trying to accomplish? → Aim

How will we know if a change is an improvement? → **MEASURES**

What changes can we make that will result in improvement? → Ideas





Why are you measuring?

Research?

Accountability?

Improvement?

The answer to this question will guide your entire quality measurement journey

Determine your Aim

- Improvement
  - To improve care
- Accountability
  - Comparison, choice, reassurance or to spur change
- Research
  - Create new knowledge

Measurement for Improvement

- Builds will/ Creates tension for change
  - Demonstrating performance gap overall
  - Demonstrating variability in performance
- Focuses teams – "you can manage what you measure"
- Designed to help your improvement team learn and establish improvement priorities
- Like a growth curve: it's not where you are, but where you are going
- Answers the question: Are changes an improvement?
- IS NOT:
  - Designed for criticism or punishment
  - Supposed to end (it should be sustainable)

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Data for Improvement, Accountability and Research

Aspect	Improvement	Comparison or Accountability	Clinical Research
Aim:	Improvement of care	Comparison, choice, reassurance, spur for change	New knowledge
Methods:			
Test observability	Test observable	No test, evaluate current performance	Test blinded
Bias	Accept consistent bias	Measure and adjust to reduce bias	Design to eliminate bias
Sample size	"Just enough" data, small sequential samples	Obtain 100% of available, relevant, data	"Just in case" data
Flexibility of hypothesis	Hypothesis flexible, changes as learning takes place	No hypothesis	Fixed hypothesis
Testing strategy	Sequential tests	No tests	One large test
Determining if change is improvement	Run charts or Shewhart charts	No change focus	Hypothesis tests (T-tests, F-tests, Chi-square), p-value
Confidentiality of data	Data used only by those involved in the improvement	Data available for public consumption	Research subjects' identities protected

Source: The Data Guide: Learning from Data to Improve Healthcare. Developed from Solberg, Leif I., Mosser, Gordon and McDonald, Susan. "The Three Faces of Performance Measurement: Improvement, Accountability and Research." Journal on Quality Improvement. March 1997, Vol.23, No. 3.

Measurement for Improvement vs Measurement for Research

	Measurement for Improvement	Measurement for Research
Purpose	Implement current knowledge	Discover new knowledge
Tests	Sequential small tests - observational	One tightly controlled test - blinded
Hypothesis	Flexible, changes as learning occurs	Fixed
Biases	Try to stabilize bias from test to test	Maximally controlled
Data	Gather "just enough" data to learn from	Gather "as much data as possible and as required"
Duration	Multiple short test cycles	Months or years
Change= Improve?	Run charts or Shewart Charts	Hypothesis test – T-test, Chi Square, p value
Confidentiality	Data used only by those involved in improvement initiative	Subjects' identities protected

Source: Adapted from - The Data Guide: Learning from Data to Improve Healthcare. Developed from Solberg, Leif I., Mosser, Gordon and McDonald, Susan. "The Three Faces of Performance Measurement: Improvement, Accountability and Research." Journal on Quality Improvement. March 1997, Vol.23, No. 3.

Key point: QI is not clinical research

Measurement Assumptions

- The purpose of measurement in the SSSL initiative is for learning not judgment
- All measures have limitations, but the limitations do not negate their value
  - Seek usefulness, not perfection
- Measures are one voice of the system. Hearing the voice of the system gives us information on how to act within the system
- Measures tell a story; goals in your aim statement give a reference point

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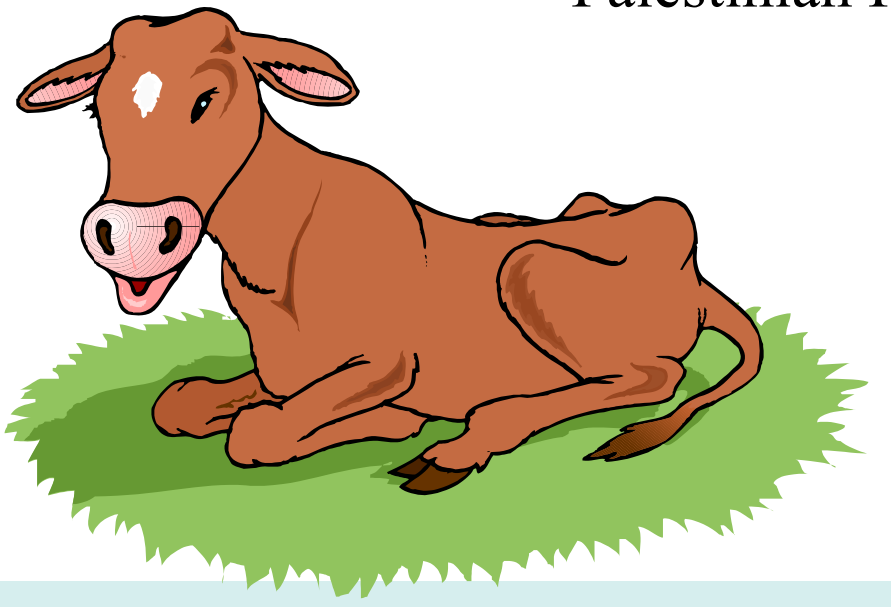
Key point:
Measurement is not a substitute for doing QI

Measurement – no substitute for QI

“You can’t fatten a cow by weighing it”

Palestinian Proverb



Measurement - no substitute for QI

- The mere possession of outcome measures does not improve quality – you have to act on the knowledge to facilitate improvement.
  - Closing the knowledge gap
    - "knowing what is right" vs "doing what is right"

Measurement: *How Do We Know That a Change is an Improvement?*

SSSL is about **making changes to systems, not measurement** but **measurement does play an important role**:

- Key measures are required to assess progress toward the aim
- Specific measures can be used for learning during PDSA cycles
- Balancing measures are needed to assess whether the system as a whole is being improved
- Data from the system (including from patients and staff) can be used to focus improvement and refine changes

Types of Improvement Measures

- Three types of QI measures
  - Outcome
  - Process
  - Balancing

Types of Improvement Measures

- Outcome measures = voice of patient/ client
  - refer to the primary outcome of the project,
    - How is the system performing?
    - What is the result?
    - How is the health of the patient affected?
  - long-term outcome. e.g., Reduce surgically-associated patient harm

Types of Improvement Measures

- Process measures = voice of how the system works
  - indicate if the team has successfully made the desired changes in a targeted process e.g.,
    - Are the parts/steps in the system performing as planned?
    - Are key changes being implemented in the system?
  - short-term measures of the success of a project.
  - Example:
    - Project = Reduce Surgically Related Harm to patients
    - Intervention = use of 3-part SSC in 100% of all surgeries
    - Process measure = % surgeries in which surgeon or designate was present for all 3 parts of SSC.

Types of Improvement Measures

- Balancing measures = looking at the system from different directions
  - indicate if other parts of the system have been disrupted by the changes (adverse effects).
    - What happened to the system as we were improving the outcome and process measures?
    - Are we improving some parts of the system at the expense of others? Side effects?
  - Example: use of 3-part SSC lead to delays betw. & w/i cases resulting in fewer surgeries being performed and longer wait-times.

When will my data start to move?

- PDSA Level Measures
  - Movement is immediate and leads to change in Process
- Process Measures
  - Change is observed here first
- Outcome Measures
  - Lag behind process measures
- Balancing measures
  - Just for monitoring not looking for movement – if they move … pay attention!

How will you know change is improvement?

- Simple **run chart** interpretation rules allow useful extraction of information from the charts
- If enough data points are available (>20), additional analysis may be pursued by the use of statistical process **Control Charts**

Why Measure and Plot Data Over Time

- In improvement efforts, changes are not fixed but are adapted over time.
- Will help generate support for your efforts.
- Will help sell spread to other parts of your organization
- Summary Statistics hide information (patterns, outliers).

Measures

- How will we know that a change is an improvement?
- What will success look like?

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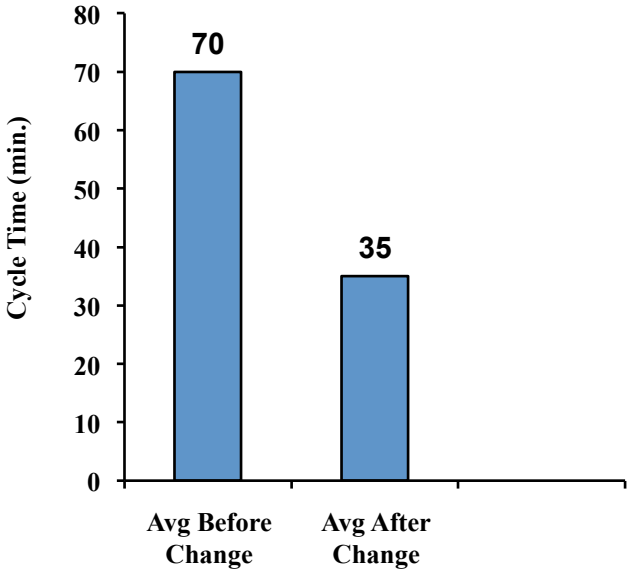
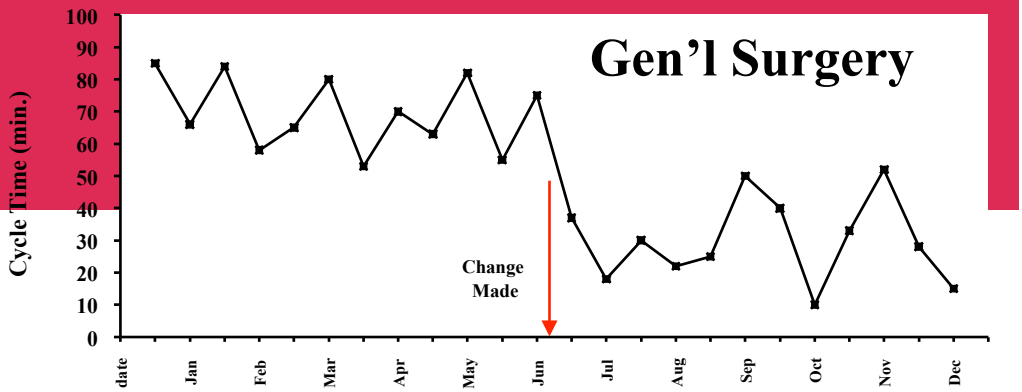
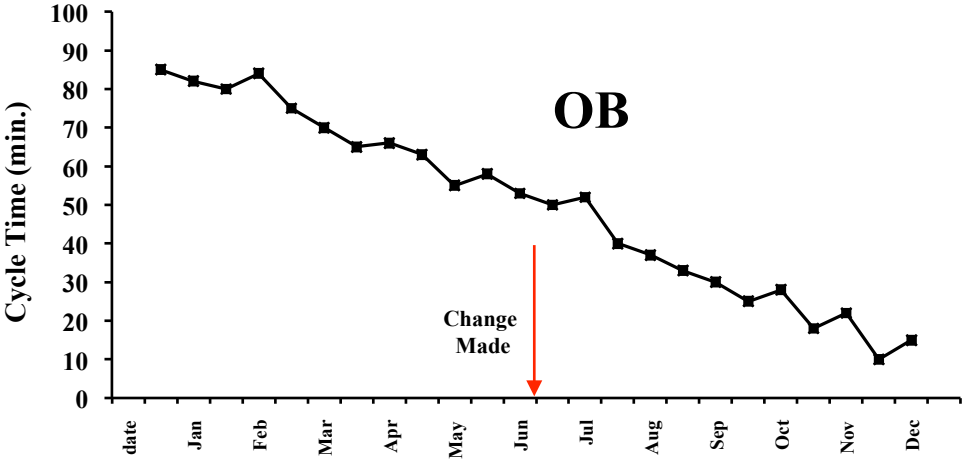
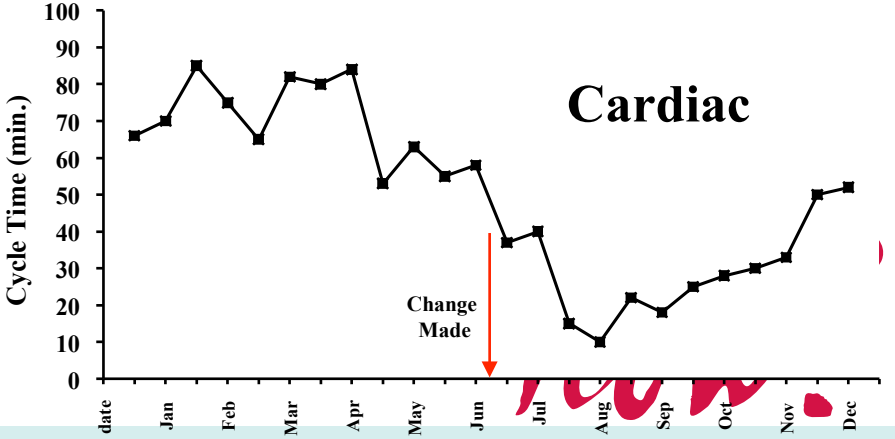
Incidence of reported patient harm

Results for Gen'l, OB and Cardiac surg









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Possible Measures for SSC

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Well-Defined Measures

Process Measures	Definition	Source of Data – OR Data tool	Sampling Plan	Goal
Use of SSC (Required)	% of surgeries in which the 3-part SSC was used Numerator = # surgeries with all 3-parts of SSC used Denominator = # surgeries	OR Data Tool "Ware all 3 parts of the SSC used in this case? "	Sample 20 surgeries or 10% of each day's surgeries (select a variety of categories) performed by different surgeons each month.	95%

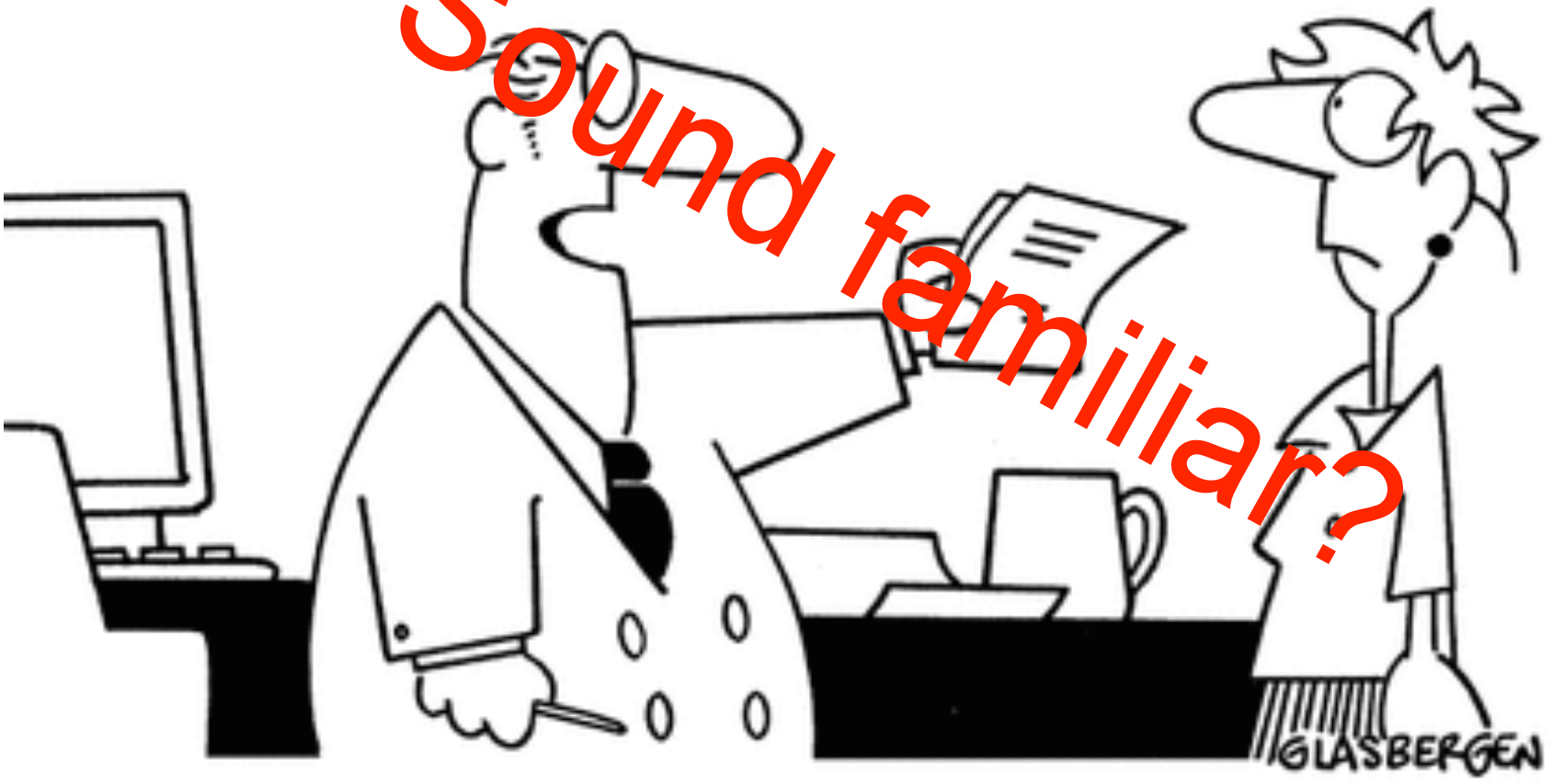
What would be SSC Measures?

- Compliance with
  - All 3 phases?
  - General use of SSC in every surgical event?
  - By professional group?
- Good Catches
- Incidence of Harm
  - Major vs minor?

Key Points

- Measurement for improvement is simpler and more focused than research
- Measurement is an important part of the Model for Improvement and is necessary to assess success and track progress
- Practices collect data on measurement strategy and report monthly

Sound familiar?



"This is a major project of utmost importance, but it has no budget, no guidelines, no support staff, and it's due in 15 minutes. At last, here's your chance to really impress everyone!"

Who You Gonna Call?...

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