



# Measurement for Quality Improvement





# Measurement for QI

Measurement in quality improvement allows a Quality Improvement (QI) team to demonstrate current performance (or baseline), set goals for future performance, and monitor the effects of changes as they are made.

Successful improvement requires successful measurement

How do you know if the changes you are making are leading to improvement? -You need to measure

	Measurement for Research	Measurement for QI
Purpose	To discover new knowledge	To bring new knowledge into daily practice
Test	One large “blind” test	Many sequential tests
Bias	Control for as many biases as possible	Stabilize the biases from test to test
Data	Gather as much data as possible, “just in case”	Gather “just enough” data to learn and complete another cycle
Data Interpretation	Significant Threshold	Data Trends
Duration	Can take long periods of time to obtain results	“Small tests of significant changes” approach accelerates the rate of improvement

## Structure, Process, Intents, and Outcomes of QI vs. EBP vs. Research

Structure	Questions	Process	Intent	(Final Product)	Examples
QI	What is happening?	Structured process that evaluates a specific system's strengths and limitations, systems parts, and resulting outcomes	Improve processes specific to a local system and patient outcomes	Information	Simulation-based Small Tests of Change or plan, do, study, act (PDSA cycle) to develop a rapid response team (RRT) protocol
	Can it be improved?				
EBP	What is known?	Systematic process that implements and evaluates interventions stemming from new knowledge generated by research	Integrate scientific discoveries into healthcare practice	Systems change	Simulation-based education/training of RRT members, as based on the results of high-quality research studies
	What can be done with this knowledge?			Outcome improvement	
Research	What is not known?	Rigorous and systematic process that generates new knowledge through the application of basic scientific principles and theory development	Description, prediction, and control	New knowledge	Simulation-based research study to generate new knowledge regarding the efficacy of an RRT program that is generalizable for medical/surgical patients
Translational research	What is safe?	Systematic investigation sourced from evidence (including theory testing) or previous research	Investigation for the purpose of new application of knowledge	New knowledge to explain or improve clinical practices	Simulation-based comparison and assessment of evidence-based RRT protocols in a virtual environment for medical/surgical patients
	What works?				

Note: Sources: Mallock and Porter-O'Grady (2006), Polit and Beck (2012), and Woods and Magyary (2010). Created by C. Crawford (2012), Kaiser Permanente Southern California Regional Nursing Research Program. QI = quality improvement; EBP = evidence-based practice.



# Effective Measurement in Quality Improvement

In order to recognize when we have achieved our goals, it is important to define what our 'better' state looks like, and measure to know if the changes we make result in the improvements we seek.

The best approach is through the measurement of items called, performance measures.



# Brainstorm Change Ideas

What are our  
current outcomes?

What outcomes do  
we want to see?

What processes  
affect outcomes?

How are processes  
currently  
performing?

Are processes  
stable and  
reliable?

How will making a  
change to the  
process affect  
outcomes?

Will the change  
affect anything  
else?



# Strategies for Successful Management

*Develop a measurement plan*

Work with your QI team to:

1. Name of measure
2. Type of measure (outcome, process or balancing, PDSA)
3. Why the measure is needed for the project
4. Operational definition
5. Data collection and sampling method
6. How will data be displayed?
7. Is baseline data available?
8. Is there a goal or target?
9. Source of the measure (EHR, survey, etc)



## Types of Measures

**Outcome measures** are the “voice of the patient or customer” and capture system performance. They answer the question: “What are the end results of our QI work.”

**Process measures** are those that capture the changes your quality improvement efforts make to the inputs or steps that influence to system/clinic outcomes. When identifying process measures, it is important that these measures directly contribute to the outcome that is desired.

**Balancing measures** determine whether changes designed to improve one part of the system are causing new problems in other parts of the system. For example, does this new QI improve patient satisfaction with access, but increase staff burnout?

**PDSA Measures** are those that are collected with each test of change (PDSA) that is carried out. These measures provide information about the effect of each change attempt.



# Outcome Measures Examples

For hypertension: Percentage of patients with hypertension who have documented blood pressure of  $<140/90$

For access: Number of days to next available appointment.

For smoking: Percentage of documented smokers who have quit smoking



## Process Measures Examples

For hypertension: Percentage of patients whose blood pressure was measured XX times in the past year

For access: Average daily clinician slots/day available for appointments

For smoking: Percentage of smokers who have been referred to smoking cessation resources



## Balancing Measure Examples

For hypertension:  
patient satisfaction  
with access

For access: Provider  
satisfaction, burnout



## Integrate Measures Into Your Daily Routine

“get just enough data” approach

Audit charts and determine how many you will need to get the overall picture

Graph and display your measures often

Monthly graphs for larger projects

Weekly graphs for more variable process measures.



## Sampling for QI Projects

- 5 patients/day for 5 days
- 25 consecutive patients regardless of any specific day
- If there are fewer than 25 patients for a week; review all



# References

- <http://www.hqontario.ca/portals/0/documents/qi/qi-measurement-primer-en.pdf>
- <http://www.ihl.org/resources/Pages/Tools/Quality-Improvement-Essentials-Toolkit.aspx>