Quality Improvement Community of Learning

March 31st, 2022
1:00-2:30 pm ET
Welcome!

Thank you for joining the call! We will get started shortly.

• You may be **muted upon entry** to the call
• You **DO have the ability** to unmute yourself
• We encourage participants to remain muted in an effort to reduce background noise

This presentation will be recorded
The NICHQ Team

Stacey C. Penny, MSW, MPH
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Project Specialist

Sue Butts-Dion
Improvement Advisor

Jane Taylor, EdD
Improvement Advisor

The faculty have nothing to disclose.
Objectives of the 5 QI Sessions

Participants Gain:

• Increased capability in improvement science—improvement basics
• Increased understanding of what is happening in other States
• The ability to include others (partners, team members, staff, community-based organizations) to expand boundaries of the work
• The ability to influence others to adopt quality improvement as an execution framework
Sessions 1 & 2 Review

• Welcome & Introductions
• Quality Improvement
  • What is it?
  • Using Adult Education Theory and Principles with Improvement Science
  • Why do we use improvement science?
  • How do we start?
• Creating the Case for Change and Assessing Readiness for Change
  • Assessing the gap
  • Identifying steps to close gaps
• Model for Improvement Part 1
  • Overview
  • Focus on Aim and Changes
    • Driver Diagrams
    • PDSAs
• Leaving in action
Today’s Agenda

• Welcome
• Model for Improvement Part 2
  • Review of PDSAs from Part 1
  • How will we know that a change is an improvement?
    • Measurement for Improvement
    • Finding the Story in Data using Run Charts
• Leaving in Action
• Next Steps and Close
<table>
<thead>
<tr>
<th>Topic</th>
<th>Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Improvement: What is it? Why do we use it? How do we start?</td>
<td>January 25, 2022, 2-3:30pm ET</td>
</tr>
<tr>
<td>The Model for Improvement Part 1</td>
<td>February 22, 2022, 2-3pm ET</td>
</tr>
<tr>
<td>The Model for Improvement Part 2</td>
<td>March 31, 2022, 1-2:30pm ET</td>
</tr>
<tr>
<td>Obstetric Hemorrhage: Sharing Successes and Guidance</td>
<td>April 2022 (exact date TBD)</td>
</tr>
<tr>
<td>More on Using Data for Improvement</td>
<td>April 27, 2022, 1-2pm ET</td>
</tr>
<tr>
<td>Severe Hypertension in Pregnancy: Sharing Successes and Guidance</td>
<td>May 2022 (exact date TBD)</td>
</tr>
<tr>
<td>Care for Pregnant and Postpartum People with Substance Use Disorder: Sharing Successes and Guidance</td>
<td>June 2022 (exact date TBD)</td>
</tr>
<tr>
<td>Sustaining the Gains and Spread</td>
<td>July 26, 2022, 1-2:30pm ET</td>
</tr>
<tr>
<td>Cardiac Conditions in Obstetrical Care: Sharing Successes and Guidance</td>
<td>August 2022</td>
</tr>
</tbody>
</table>

Be sure to add all webinars to your calendar if you have not already done so!
Building our PDSA Muscles

Model for Improvement

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What change can we make that will result in improvement?

Cycle of Improvement
- Rapid Testing
- Think BIG and Start SMALL

Testing Change Ideas

Photo by Simone Pellegrini on Unsplash
PDSAs

In your experience:
• What is the best thing about using PDSA cycles?
• The hardest thing?
PDSA Worksheet

MODEL FOR IMPROVEMENT

Date: 

Project Name: 

Overall Aim of Project: 

Objective of this PDSA Cycle:

Is this cycle used to develop, test, or implement a change? ______

What question(s) do we want to answer with this PDSA cycle:

Plan:

Plan to answer questions: Who, What, When, Where

Plan for collection of data: Who, What, When, Where

Predictions (for questions above):

Do:
Report what happened: the completed change or test, data, and begin analysis.

Study:
Complete analysis of data.

Compare the data to your predictions and summarize the learning.

Act:
Are we ready to make a change (adopt, adapt, abandon)? Plan for the next cycle.
Tips for Testing

• Scale down – think “Drop Two”
• Use a form to document your test

Just 1

• Make changes in parallel

“What can we do by Tuesday without harming the hair on the head of a patient?”
- Don Berwick
Sequence of Improvement

- Testing a change
  - Theory and Prediction
  - Developing a change
  - Make part of routine operations
  - Implementing a change
  - Sustaining improvements and spreading changes to other locations

- Expand to clinics
- Expand to ED
- More Robust Testing

Test in L&D

Source: IHI
PDSA Series: Changes Ideas That Evolve

PDSA Cycle 1—response kit in L&D next BP with 1 severe HTN with one care team

PDSA Cycle 2—response kit modified reorganization of meds and materials and test with next BP with severe HTN

PDSA Cycle 3—train all and implement in L&D

PDSA Cycle 4—monitor to hold gains

Early PDSA tests (adopt, adapt, abandon)

Source: A case study of translating ACGME, to a comprehensive curriculum improvement projects as the key component requirements into reality: systems quality practice-based learning and improvement, A M Tomolo, R H Lawrence and D C Aron, Qual Saf Health Care 2009 18: 217-224
Deciding on the Scale of the Test

<table>
<thead>
<tr>
<th>Readiness To test changes</th>
<th>No commitment</th>
<th>Some commitment</th>
<th>Strong commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low degree of belief that change idea will lead to Improvement</td>
<td>Cost of failure large</td>
<td>Very small-scale test</td>
<td>Very small-scale test</td>
</tr>
<tr>
<td></td>
<td>Cost of failure small</td>
<td>Very small-scale test</td>
<td>Very small-scale test</td>
</tr>
<tr>
<td>High degree of belief that change idea will lead to Improvement</td>
<td>Cost of failure large</td>
<td>Very small-scale test</td>
<td>Small-scale test</td>
</tr>
<tr>
<td></td>
<td>Cost of failure small</td>
<td>Small-scale test</td>
<td>Large-scale test</td>
</tr>
</tbody>
</table>

Source: The Improvement Guide: A Practical Approach to Enhancing Organizational Performance, Table 7.1, p. 146.
Model for Improvement

Measures

Measures for Improvement
All improvement requires change, but not all change is an improvement.

"Of all changes I’ve observed, about 5 percent were improvements; the rest, at best, were illusions of progress."

- W. Edwards Deming

Measurement
Select the Measurement button.
Measurement Assumptions

• All measures have limitations
  — Limitations do not negate their value

• Measures are an important “voice” of the system
  — Hearing the voice of the system gives us information on where to work and focus efforts

• Measures tell a story
<table>
<thead>
<tr>
<th>Aspect</th>
<th>Improvement</th>
<th>Accountability or Judgment</th>
<th>Clinical Research</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aim:</strong></td>
<td>Improvement of care processes, systems and outcomes</td>
<td>Comparison for judgment, choice, reassurance, spur for change</td>
<td>New generalizable knowledge</td>
</tr>
<tr>
<td><strong>Methods:</strong></td>
<td>Test observable</td>
<td>No test, evaluate current performance</td>
<td>Test blinded</td>
</tr>
<tr>
<td><strong>Confounders:</strong></td>
<td>Accept consistent</td>
<td>Measure and adjust to reduce</td>
<td>Design to eliminate</td>
</tr>
<tr>
<td><strong>Sample Size:</strong></td>
<td>“Just enough” data, small sequential samples</td>
<td>Obtain 100% of available, relevant data</td>
<td>“Just in case” data</td>
</tr>
<tr>
<td><strong>Flexibility of Hypothesis:</strong></td>
<td>Hypothesis flexible, changes as learning takes place</td>
<td>No hypothesis</td>
<td>Fixed hypothesis</td>
</tr>
<tr>
<td><strong>Testing Strategy:</strong></td>
<td>Sequential tests</td>
<td>No tests</td>
<td>One large test</td>
</tr>
<tr>
<td><strong>Determining if a Change is an Improvement:</strong></td>
<td>Run charts or Shewhart control charts</td>
<td>No focus on change</td>
<td>Hypothesis, statistical tests (t-test, F-test, chi square, p-values)</td>
</tr>
<tr>
<td><strong>Confidentiality of the Data:</strong></td>
<td>Data used only by those involved with improvement</td>
<td>Data available for public consumption</td>
<td>Research subjects’ identities protected</td>
</tr>
<tr>
<td><strong>Frequency of Use:</strong></td>
<td><strong>Daily, weekly, monthly</strong></td>
<td>Quarterly, annually</td>
<td>At end of research</td>
</tr>
</tbody>
</table>

A Family of Measures for Quality Improvement

<table>
<thead>
<tr>
<th>Category</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome measures</strong></td>
<td>- Did our changes impact the aim as predicted?</td>
</tr>
<tr>
<td></td>
<td>- Are we getting results and seeing improvement based on our aim?</td>
</tr>
<tr>
<td></td>
<td>- The “what” of the QI project</td>
</tr>
<tr>
<td></td>
<td>- Limit to a small set of measures</td>
</tr>
<tr>
<td><strong>Process measures</strong></td>
<td>- How did we make the changes?</td>
</tr>
<tr>
<td></td>
<td>- Reflects key steps required for improvement</td>
</tr>
<tr>
<td></td>
<td>- The “how” of the QI project</td>
</tr>
<tr>
<td></td>
<td>- Limit to a few measures</td>
</tr>
<tr>
<td><strong>Balancing measures</strong></td>
<td>- Unintended consequences of improving the system</td>
</tr>
<tr>
<td></td>
<td>- May be positive or negative</td>
</tr>
<tr>
<td></td>
<td>- May be something else your team wants to monitor</td>
</tr>
<tr>
<td></td>
<td>- Limit to one or two measures</td>
</tr>
<tr>
<td><strong>Structural Measures</strong></td>
<td>A measure meant to designate the conditions under which care is provided:</td>
</tr>
<tr>
<td></td>
<td>- Material resources (such as equipment and facilities)</td>
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<td></td>
<td>- Human resources (such as the number, variety and qualifications of professional and support personnel—educated or not)</td>
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<tr>
<td></td>
<td>- Organizational characteristics (such as the organization of the staff—presence/absence of staffing models, supervision and performance review, methods of paying for care, etc.)</td>
</tr>
<tr>
<td></td>
<td>- Policies, procedures and protocols (done or not done, followed or not followed)</td>
</tr>
</tbody>
</table>
Where do we look for measures?

- Plan-Do-Study-Act (PDSA) cycles are a disciplined inquiry and learning approach about how these changes will work in your state.
- How a state customizes good ideas, ready for use to their unique context.

Outcome

AIM

Process & Structure

Primary Driver

Secondary Drivers

• Change
• Change
• Change

• Change
• Change
• Change

• Change
• Change
• Change

• Change
• Change
• Change

• Change
• Change
• Change
Aim: By Feb. 2023, we will recognize and treat obstetric hypertension (HTN) during pregnancy and up to six weeks postpartum to reduce severe maternal morbidity (SMM) by 25% and achieve 80% or higher compliance of the HTN recognition tool and OB HTN emergency pathway.

**Primary Drivers**
- Assessment/Recognition
- Response/Treatment
- Clinical Collaboration to avoid 3 D’s delay, deny, dismiss
- Equity in Care

**Secondary Drivers**
- In ED
  - Upon admission
  - At first acute HTN onset
  - In clinical setting
- At second HTN reading
  - Medication administration
- Stratification by race, ethnicity and other factors
  - Care gap recognition
  - Vigilance in closing gap
  - Targeted Universalism Steps

**Change Ideas**
- Know risk factors
- Use proper BP technique
- Prioritize 2nd reading
- Use a timer as reminder
- Think, “This is an emergency” (like a stroke)
- Use preeclampsia early recognition tool
- Utilize blue band

- Use standing orders / HTN order sets to avoid delay
- Over-ride Pyxis for urgent HTN meds
- Make 2nd reading within 15 min after initial HTN
- Treat HTN within 15 min if BP elevation lasts 15 min or more
- Follow HTN Medication Admin Guide
- Follow OB HTN Emergency Pathways
- Use Preeclampsia VS Guide
- Use eclampsia algorithm
- Treat severe BP
- Check stat lab results
- Use and practice SBAR
- Swarm and debrief all failures, look for system and process failures
- Develop clear rapid escalation
- Implement TeamStepps
- Schedule f/u PP visit w/in 72hrs if on meds or 3-10 days if not on medications
- Drill & simulate HTN emergencies

- Use run and control charts to analyze data monthly.
- Stratify by race and ethnicity
- Include women of color on your improvement team.
- Set universal goals and develop targeted approaches so all groups achieve universal goals
MN PQC Family of Measures for Hypertension

Outcome Measures: Maternal mortality and morbidity rates due to HTN disorder during pregnancy – 6 week pp

Process Measures: 3. Percent of birthing people with severe range BP treated within 60 minutes
4. Lapsed time between first severe range BP and follow up BP reading
5. Lapsed time between second confirmatory severe range BP to treatment
6. Percent of compliance with OB hypertension emergency pathway from all hospital entry points
7. Percent BP with HTN disorder sent home with discharge education
8. Percent of BP with HTN disorder sent home with BP cuff
9. Percent of BP with HTN disorder during pregnancy scheduled for post d/c follow up appointment within 3-5 days of discharge

Optional Measure: Percent of BP with HTN disorder sent home with blue band
Selecting Useful Data and Using Run Charts to See the Story
The right measures are the ones derived from purpose...
What if you use the wrong measures?
What if you measure the “right” things, but in the “wrong” way?
And, what if we didn’t measure anything?
<table>
<thead>
<tr>
<th>Measure Type</th>
<th>Measure</th>
<th>Measure Definition</th>
</tr>
</thead>
</table>
| **Outcome** | Hypertension-related Severe Maternal Morbidity (SMM) | • **Denominator:** All mothers during their birth admission, excluding ectopics and miscarriages  
• **Numerator:** Among the denominator, all cases with any non-transfusion SMM code  
• Stratify data by race and ethnicity and language |
| **Process** | Percent of delivering patients with elevated blood pressure who receive treatment within 60 minutes of elevated blood pressure reading. | • **Denominator:** Number of patients with persistent (twice within 15 minutes) new-onset Severe HTN (Systolic: = 160 or Diastolic: = 110)  
• **Numerator:** Number of patients among denominator who were treated within 60 minutes with IV Labetalol, IV Hydralazine, or PO Nifedipine  
• Stratify data by race and ethnicity and language |
| **Process** | Percent of patients who can teach back postpartum warning signs to their care team upon discharge | • **Denominator:** Total number of patients delivering on the unit  
• **Numerator:** Number of patients who, at the time of discharge, could teach back the symptoms of when they should seek postpartum emergency care  
• Stratify by race and ethnicity and language |
| **Process** | Percent of deliveries where a complication occurred that had a team debrief after the event | • **Denominator:** Total number cases where a complication occurred  
• **Numerator:** Number of cases where a complication occurred that had a team debrief within one week of the adverse event |
| **Structural** | Organization has a system in place for conducting debriefs | • Yes/No |
| **Balancing** | Fetal Distress (in response to medication) | • **Denominator:** Total number of cases where anti-hypertensives were given  
• **Numerator:** Number of cases where fetal distress was observed (as measured by system criteria) due to low blood pressure |
Small Multiples: visualizing all your teams

% patients screened for SDoH
Aggregate and Small Multiple Run Charts
ON THE JOB
SAFETY BEGINS HERE

THIS DEPARTMENT HAS WORKED
2,111 DAYS

WITHOUT AN OSHA RECORDABLE INJURY

ACCIDENTS ARE AVOIDABLE

Source: Electronic Shine-a-Day™ Safety Scoreboards - Department Worked Days Without Accident Signs, SKU: S-7464 (mysafetysign.com)
An Operational Definition...

... puts communicable meaning to a concept by specifying how the concept will be applied within particular set of circumstances.

- It gives communicable meaning to a concept
- Is clear and unambiguous
- Specifies measurement methods and equipment
- Identifies criteria

W. Edwards Deming
## Organizing Your Measures Worksheet

Topic for Improvement:

<table>
<thead>
<tr>
<th>Aim/Driver Concept</th>
<th>Potential Measure(s)</th>
<th>Outcome</th>
<th>Process</th>
<th>Balancing</th>
<th>Structure</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

### Example

**Organizing Your Measures Worksheet**

**Topic for Improvement:** Severe Maternal Hypertension (HTN)

<table>
<thead>
<tr>
<th>Concept</th>
<th>Potential Measure(s)</th>
<th>Outcome</th>
<th>Process</th>
<th>Balancing</th>
<th>Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harm</td>
<td>Maternal morbidity and mortality rates</td>
<td></td>
<td>✔️</td>
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<tr>
<td>Timely treatment</td>
<td>Percent of birthing people with severe range BP treated within 60 minutes</td>
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<td>✔️</td>
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<tr>
<td>Readmissions</td>
<td>Percent of birthing people readmitted w/ complications from severe maternal HTN</td>
<td></td>
<td></td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Staff Education</td>
<td>Percent of staff fully trained in identifying and treating severe maternal HTN</td>
<td></td>
<td></td>
<td></td>
<td>✔️</td>
</tr>
</tbody>
</table>

Measure Name: ______________________________________
(Remember this should be specific and quantifiable, e.g., the time it takes to..., the number of..., the percent of... or the rate of...)

**Operational Definition**
Define the specific components of this measure. Specify the numerator and denominator if it is a percent or a rate. If it is an average, identify the calculation for deriving the average. Include any special equipment needed to capture the data. If it is a score (such as a patient satisfaction score) describe how the score is derived. When a measure reflects concepts such as accuracy, complete, timely, or an error, describe the criteria to be used to determine “accuracy.”

**Can you develop good Operational Definitions?**
# Data Collection Plan Worksheet

**Project:** _____________________________________________________

<table>
<thead>
<tr>
<th>Measure Name</th>
<th>Is Stratification appropriate? If Yes, list the levels of stratification</th>
<th>Will you use sampling? If Yes, describe the sampling method you will use</th>
<th>Frequency of data collection (e.g., hourly, daily, weekly?)</th>
<th>Duration of data collection (i.e., how long do you plan to collect the data?)</th>
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</tbody>
</table>

# Measurement Dashboard Worksheet

**Project:** ____________________________

<table>
<thead>
<tr>
<th>Measure Name</th>
<th>Operational Definition</th>
<th>Data Collection Plan</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Be sure to indicate if it is a count, percent, rate, days between, etc.)</td>
<td>(Define the measure in very specific terms. Provide the numerator and the denominator if a percentage or rate. Be as clear and unambiguous as possible)</td>
<td>(How will the data be collected? Who will do it? Frequency? Duration? What is to be excluded?)</td>
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</tbody>
</table>

Leaving in Action

• Continue to refine your aim
• In preparation for next session:
  • Go to https://1drv.ms/b/s!AlvzNhmTpx9kgQB8lwkLFa9ZKidC to access your state’s Jamboard
  • Identify at least one outcome measure, 1-2 process measures and a balancing and structural measure (if useful) for your project
  • Complete one PDSA between now and the next session
Resources

• NICHQ QI 101
• NICHQ QI 102
• How to Improve, IHI Website How to Improve | IHI - Institute for Healthcare Improvement
• Measurement for Improvement, Bob Lloyd, IHI Open School Whiteboard: Family of Measures - YouTube
Reminders and Next Steps

• The next QI COL webinar will be held on: April 27th 2022, from 1-2:00 pm ET. The topic will be More on Using Data for Improvement.

• If you have not done so already, register for all QI COL sessions and download them to your calendar: https://nichq.zoom.us/meeting/register/tJckcOGorDoiHdXJ27vnCTcEZC8iuE39ucS6

• You can sign up for at least one TA session. Complete this TA request form to set up a session with Jane or Sue when you’re ready! One person from your state should fill this out. https://survey.alchemer.com/s3/6707471/QI-Community-of-Learning-TA-Form
Thank you!

We are improvers at heart.
We want to hear and learn from your experiences during these sessions.


Please take a moment to complete the brief evaluation before signing off!