HRET HIIN Virtual Event
Accelerating Improvement Fellowship:

*Developing Change Ideas & Testing with PDSA Cycles*

Wednesday, February 14 | Call #3 | 12:30-1:30 p.m., CT
Welcome and Introductions

Mallory Bender, Program Manager, HRET
## Agenda

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<th>Time</th>
<th>Session</th>
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<tr>
<td>12:30-12:35</td>
<td>Welcome and Introduction</td>
<td>Mallory Bender, HRET</td>
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<td>12:35-12:45</td>
<td>Welcome</td>
<td>Lauren Macy, IHI</td>
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<td>12:45-1:15</td>
<td>Developing Change Ideas and Testing with PDSA Cycles</td>
<td>Lauren Macy, IHI</td>
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<td>1:15-1:25</td>
<td>Assignments, Suggested Tasks, &amp; Additional Materials</td>
<td>Lauren Macy, IHI</td>
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<td>1:25-1:30</td>
<td>Bring It Home</td>
<td>Mallory Bender, HRET</td>
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Objectives for Today

• Understand the difference between fundamental and reactive change
• Learn how to develop fundamental changes
• Understand the reason for testing
• Learn how to plan and test a PDSA
• Learn to connect PDSA cycles to your theory
• Demonstrate the linkage between PDSAs, Change Ideas, Drivers, and the Aim
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<td>January 17th</td>
<td>The Model for Improvement &amp; Setting Up Your Team</td>
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<td>January 31st</td>
<td>Setting Aims &amp; Developing Your Theory</td>
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<td>February 14th</td>
<td>Developing Change Ideas &amp; Testing with PDSA</td>
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<td>February 28th</td>
<td>Measuring Changes: How will we know a change is an improvement?</td>
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<td>Using and Analyzing Run Charts</td>
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<td>Practical Strategies for Managing Improvement Projects</td>
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<td>Scale Up &amp; Spreading Successful Changes</td>
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<td>Celebration!</td>
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Fellowship Checklist to Date

✓ Complete the application by 2/16
✓ Complete the self assessment by 2/28
✓ (Start) Forming your team
✓ Complete the assignments (can be found on the LMS page)
✓ Post on the Discussion Group— it’s fun!
• Thank you for sharing your aim statements on the Discussion Group!
  – Many great examples that clearly stated the numeric goal, the system, and timeline
  – Please feel free to give each other feedback and learn from one another
  – Consider getting feedback on your aim statement from:
    • Your team and/or the process owner
    • Leadership
    • A customer/patient
Driver Diagrams help us to map our theory back to the processes that drive us (or the system) towards our aim

• How are you using your driver diagram?
• What opportunities will you have to revise it as you learn?
DEVELOPING CHANGE IDEAS
A Model for Learning and Change

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?

Changes

Act  Plan
Study  Do

No More Perfect Example...

• The following series of pictures perfectly demonstrate the inherent human tendency to solve a problem with MORE
• Ask yourselves, “what would I have done?”
The definition of insanity is doing the same thing over and over and expecting a different result

-Albert Einstein
First Order Change

MORE:

• Of the same ideas/changes already tried/implemented

OR

• More resources:
  – Time, money, staff, inspections, alerts, screens, posters, warnings, stickers, education, in-services, “talking tos,” data reviews, meetings, advice, mailings, reminders, beds, paperwork, policy and procedures, blips and bleeps, lights, signage, rooms…and my favorite “exhortations”

All improvement requires change, yet not all change leads to improvement (what a bummer!)
MORE: NOT MORE!

• Change that is fundamentally different
• Think of a flow chart
• Human behavior/movement is changed
• Hard to come up with because of the power of the human mind, “perceptual ruts”
• Is responsible for 90-95% of improvement
• (sometimes MORE is needed!)

And is a great thing to tease each other about!

(“I don’t know, sounds like more to me?!”)
Something **specific** enough to test and implement in a particular situation – an actual **change** to the current process

• Properties of a useful change idea:
  – **Specific**: Can you describe what will happen when the idea is used? Can you describe who, what, when, where, why, and how the idea will be put into practice?
  – **Actionable/Feasible**: Can you envision using the idea with current technology, resources, and authority?

• You learn about specifics and feasibility of change ideas through Plan-Do-Study-Act (PDSA) test cycles
Activity ≠ Change

Is NOT a change:
(but may be a necessary preliminary task however)
• Planning
• Having a meeting
• Educating staff
• Creating a protocol
• Assigning responsibility

Is a change:
• Use the med reconciliation form at time of admission
• Use the WHO surgical checklist on the next 10 cases
• Eliminate budgets under $50,000
• Use budget executive summaries

For each change idea, you should have an explicit prediction of how it will impact the outcome.
Five Methods to Develop Change Ideas

- Logical thinking about the current system
- Benchmarking or learning from others
- Using technology
- Creative thinking
- Using change concepts

Logical Thinking (about the current state)

- Talk to subject matter experts – i.e., those who supply, work in, or use the current process
- Collect data and look for variation
- Study in detail a “sample of one” or a case study approach
  - Follow one person or case through the whole process to uncover issues and opportunities in the current system. This learning often encourages logical thinking about high-leverage changes that could have an impact on the whole.
- Tools to investigate the current state
  - Cause and Effect / Fishbone / Ishikawa diagram
  - 5 Whys
  - Flowcharting

(see “Resources” at the end of the slide deck for these tools)
Example of Cause & Effect Diagram

Basic format

Detailed format

Causes

Outcome or effect
Getting to the Root Cause of a Bad Journey to Work

- Time with family
  - Early start
  - Husband working
  - Sons sleeping late
- Daycare Drop Off
  - Code to enter building doesn’t work
  - Forgot spare clothes
  - Kids crying
- Drive to Cambridge
  - Plows on the highway
  - Traffic on 93
  - Garage full
- Prepping Bags
  - No food for lunch
  - Ice packs warm
  - Can’t fit books in bag

A Bad journey to work
Problem: MAs are not consistently collecting BMIs

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**Example of 5 Why’s**

1. Why? Height scales are broken/missing.
2. Why? Facilities hasn’t fixed them.
3. Why? Facilities didn’t know scales were broken.
5. Why? No staff are designated to notify Facilities about scales.

**Change Idea:**
1. Clarify to all MAs their role in notifying Facilities about all broken equipment and to fix it in 2 days with supervisor if unrepaird.
Block Diagram (Flowchart)

Source: East London Foundation Trust
Your “Current State”

• Those who have experience with any of these tools to investigate your “current state” through logical thinking, what advice or experience would you share?

• Which can you apply to your current project?
Using Change Concepts

Change Concept

Specific Ideas

A general notion or approach that has been found to be useful in developing specific ideas for changes that lead to improvement.

Theories and Predictions

Taking a concept and getting specific

Why do think this idea will result in improvement?
Using Change Concepts

A general notion or approach that has been found to be useful in developing specific ideas for changes that lead to improvement.

- Improve ICU patients experience.
  - “I feel the staff doesn’t know me”
  - “I feel like you treat my dad as a room number, not a retired Circuit court judge and grandpa”
Taking a concept and getting specific

• “Staff doesn’t know me”
• “Not a room number, a retired Judge and grandpa”
• We want to know patients, call them by preferred name, connect with their lives.

• Ideas:
  • Update EMR with this information
  • Ask questions on admission
  • Talk to family
  • Open visiting hours
  • Add “get to know me” poster
Using Change Concepts

Change Concept

Why do think this idea will result in improvement?

Specific Ideas

• Engaging patient and family on admission with specific personal questions/poster will encourage a sense of caring.

• Posting a completed “Get to know me” poster in each room will assist staff in calling patients each by their preferred name and connecting with matter important to patient and family.
Resources for Developing Change Ideas:

• Logical Thinking:
  • Cause and Effect / Fishbone / Ishikawa diagram: Video
  • 5 Whys: Brief Article
  • Flowcharting: Video

• QI Essentials Toolkit

• Change Concepts:
  • IHI Improvement App!
Complete List of Change Concepts

**Eliminate Waste**
1. Eliminate things that are not used
2. Eliminate multiple entry
3. Reduce or eliminate overkill
4. Reduce controls on the system
5. Recycle or reuse
6. Use substitution
7. Reduce classifications
8. Remove intermediaries
9. Match the amount to the need
10. Use Sampling
11. Change targets or set points

**Change the Work Environment**
27. Give people access to information
28. Use Proper Measurements
29. Take Care of basics
30. Reduce de-motivating aspects of pay system
31. Conduct training
32. Implement cross-training
33. Invest more resources in improvement
34. Focus on core process and purpose
35. Share risks
36. Emphasize natural and logical consequences
37. Develop alliances/cooperative relationships

**Manage Variation**
51. Standardization (Create a Formal Process)
52. Stop tampering
53. Develop operation definitions
54. Improve predictions
55. Develop contingency plans
56. Sort product into grades
57. Desensitize
58. Exploit variation

**Design Systems to avoid mistakes**
59. Use reminders
60. Use differentiation
61. Use constraints
62. Use affordances

**Focus on the product or service**
63. Mass customize
64. Offer product/service anytime
65. Offer product/service anyplace
66. Emphasize intangibles
67. Influence or take advantage of fashion trends
68. Reduce the number of components
69. Disguise defects or problems
70. Differentiate product using quality dimensions

**Improve Work Flow**
12. Synchronize
13. Schedule into multiple processes
14. Minimize handoffs
15. Move steps in the process close together
16. Find and remove bottlenecks
17. Use automation
18. Smooth workflow
19. Do tasks in parallel
20. Consider people as in the same system
21. Use multiple processing units
22. Adjust to peak demand

**Optimize Inventory**
23. Match inventory to predicted demand
24. Use pull systems
25. Reduce choice of features
26. Reduce multiple brands of the same item

**Manage Time**
46. Reduce setup or startup time
47. Set up timing to use discounts
48. Optimize maintenance
49. Extend specialist’s time
50. Reduce wait time

**Enhance the Producer/customer relationship**
38. Listen to customers
39. Coach customer to use product/service
40. Focus on the outcome to a customer
41. Use a coordinator
42. Reach agreement on expectations
43. Outsource for “Free”
44. Optimize level of inspection
45. Work with suppliers
PLAN-DO-STUDY-ACT CYCLES
A Model for Learning and Change

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?

Why test?

Act → Plan → Study → Do

The PDSA Cycle for Learning and Improvement

Plan
- Objective
- Questions & predictions
- Plan to carry out: Who? When? How? Where?

Do
- Carry out plan
- Document problems
- Begin data analysis

Study
- Complete data analysis
- Compare to predictions
- Summarize

Act
- Ready to implement?
- Try something else?
- Next cycle

Let’s try it!
What will happen if we try something different?

What’s next?
Did it work?
To Be Considered a PDSA Cycle:

• The test or observation was **planned** (including a plan for collecting data).

• The plan was attempted (**do** the plan).

• Time was set aside to analyze the data and **study** the results.

• **Action** was rationally based on what was learned.

Source: Improvement Guide pp.60-61
Project Aim: Reduce Sepsis 30-Day Readmission rate by 25% by September 2017 at Hampton Community Hospital

• **Plan:**
  – Question: If we screen prior to discharge, will we be able to identify and treat cases prior to them going home?
  – Prediction: yes
  – **Who?** Nurse Case Manager **When?** Thursday, 3/16

• **Do:**
  – 10 patients screened at discharge, 1 found at high risk for readmission

• **Study:**
  – Yes, prediction was right... they found one patient and initiated high risk readmission protocol. Scheduled a f/u home health visit within 48 hours of discharge and a physician office visit 3-5 days after discharge.
  – One thing they learned was that screening the patients took more time, so the Nurse Case Manager wasn’t able to attend to other patients and the other nurses had to help cover.

• **Act:**
  – Adapt... If all nursing staff could do the screening, then the additional time it takes to screen each patient could be spread across all staff.
• **Project:** Prevent Central Line Infections
  – **Objective for this PDSA Cycle:** Test the use of a central line bundle checklist to increase compliance with central line bundle elements.

• **PLAN:**
  – **Questions:** How can we ensure total compliance with the central line bundle?
  – **Predictions:** Using a central line bundle checklist will help ensure total compliance with all elements of the central line infection bundle appropriate for patient.
  – **Plan for change or test – who, what, when, where:**
    • What: Test a central line bundle checklist from General Hospital.
    • Who: Bonnie, Dr. Smith
    • Where: Patient chart at the bedside
    • When: Next time CL inserted
  – **Plan for collection of data – who, what, when, where:**
    • Who: Bonnie
    • What: Compliance with all central line bundle elements.
    • When: At line insertion Where: Patient chart
PDSA Example

DO:
• Carry out the change or test.
• Collect data and begin analysis. Bonnie will complete the sample checklist next time a Central Line is inserted in the unit with Dr Smith.

STUDY:
• Complete analysis of data:
• How did or didn’t the results of this cycle agree with the predictions that we made earlier? Was it helpful? What changes would Bonnie suggest?
• Summarize the new knowledge we gained by this cycle: Did it work? Do we need to add something? Is the order correct?

ACT:
• List actions we will take as a result of this cycle:
• Plan for the next cycle (adapt change, another test, implementation cycle?) What can we test with the next insertion?
“Negative results on the fish… Let’s try rubbing two sticks together.”
The Sequence of Improvement

1. Develop a change
2. Testing a change
3. Implementing a change
4. Make part of routine operations
5. Sustaining improvements and spreading changes to other locations

Theory and Prediction

1. Theory and Prediction
2. Developing a change
3. Testing a change
4. Implementing a change
5. Make part of routine operations
6. Sustaining improvements and spreading changes to other locations
Why Do Multiple Cycles?

- Increase degree of belief
- Determine which of several proposed changes lead to improvement
- Decide how to adapt change to the environment
- Evaluate cost implications and possible side effects of change
- Give people chance to experience the change prior to implementation

PDSA Tip #1: “Oneness”
Shrink the Timeframe!

- Years
- Quarters
- Months
- Weeks
- Days
- Hours
- Minutes

*Drop down next “two levels” to plan test cycle!*
Guidance for Testing a Change

- A test of change should answer a specific question!
- A test of change requires a **theory** and a **prediction**!
- Test on a small scale and collect **data over time**.
- Build knowledge **sequentially** with multiple PDSA cycles for each change idea.
- Include a **wide range of conditions** in the sequence of tests.
- Don’t confuse a **task** with a **test**!
Failed Tests...Now What?

Reasons for failed tests:

1. Change not executed well
2. Support processes inadequate
3. Hypothesis/hunch wrong:
   • Change executed but did not result in local improvement
   • Local improvement did not impact global measures
   • Collect data during the Do step of the Cycle to help differentiate these situations.
The Value of “Failed” Tests

“I did not fail one thousand times; I found one thousand ways how not to make a light bulb.”

Thomas Edison
What are you going to test by next Tuesday?
Action Items for Action Period

• **Assignments:**
  – QI 102: Lesson 4—Developing Changes
  – QI 102: Lesson 5—Testing Changes

• **Suggested Tasks:**
  – Run at least one PDSA cycle and document the P, D, S, and A for one change idea

• **Additional Materials:**
  – “Why Should You Start Testing Changes ASAP?”
  – “How Long Should a PDSA Cycle Last?”
  – PDSA Worksheet
Full URL:
http://www.ihi.org/education/IHIOpenSchool/Courses/_layouts/15/ihi/discussion/viewdiscussion.aspx?webId=b071ca06-9f65-4458-8465-7801efb05ccc&listId=96befa68-c090-4442-b19fc6b84df17679&id=390558&discussionUrl=/education/ihiopenschool/Courses/_layouts/15/ihi/discussion/viewwall.aspx
Bring it Home

Mallory Bender, Program Manager, HRET
Next Office Hours 2/21

• **Join us** for our next optional QI office hours!
  February 21 from 11-12 CT
THANK YOU!