Ramping Up PDSA Cycles

What is the IHI Model of Improvement?

The IHI Model of Improvement is a framework developed by the Institute for Healthcare Improvement (IHI) to guide organizations and healthcare professionals in achieving quality improvement in healthcare settings. The model is also known as the "Model for Improvement" and consists of three fundamental questions, known as the "Three Questions Framework," along with a series of key concepts and principles.
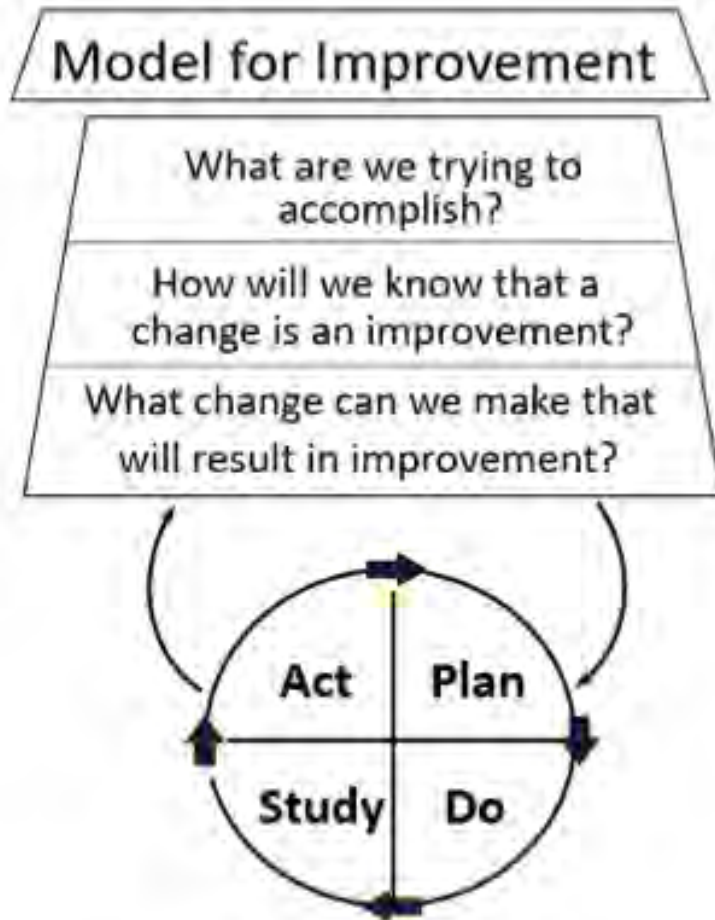
The Three Questions Framework

What are we trying to accomplish? This question emphasizes the importance of clearly defining specific and measurable goals for improvement. It involves setting clear objectives and targets that align with the organization's overall mission and vision.

How will we know that a change is an improvement? This question focuses on measurement and data collection. It highlights the need for developing reliable and valid measures to assess whether a change is leading to improvement. It emphasizes the importance of using data to track progress, evaluate outcomes, and make informed decisions.

What changes can we make that will result in an improvement? This question centers on the identification and implementation of changes or interventions to achieve the desired improvement. It encourages a systematic and structured approach to generating, testing, and implementing changes. It involves using a variety of improvement methods and tools, such as Plan-Do-Study-Act (PDSA) cycles, to drive and sustain improvement.

IHI Model for Improvement

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?

Act | Plan

Study | Do

Family of Measures
- ✓ Outcome
- ✓ Process
- ✓ Balancing

Adapted from Langley, G. J., Moen, R. D., Nolan, K. M., Nolan, T. W., Norman, C. L., & Provost, L. P. (2009). The improvement guide (2nd ed.). Jossey Bass Wiley.

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 uncontrolled hypertension but adversely impact patient experience?

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.

The PDSA Cycle: A cycle for learning and for improvement

HEART HEALTHY OHIO INITIATIVE

4. Adopt the change, or abandon it, or run through the cycle again

Act	Plan
Study	Do

1. Identify the problem or area for improvement.

•3. Analyze the data collected during the implementation phase.
•Compare the results against the established goals and objectives.

2. Implement the changes outlined in the plan on a small scale or in a controlled environment.

Adapted from The New Economics: For Industry, Government, Education. 2nd ed. Cambridge, Mass.: MIT Press, 2000. Deming, W.

Testing the IHI Model of Improvement

Evaluate the Environment:

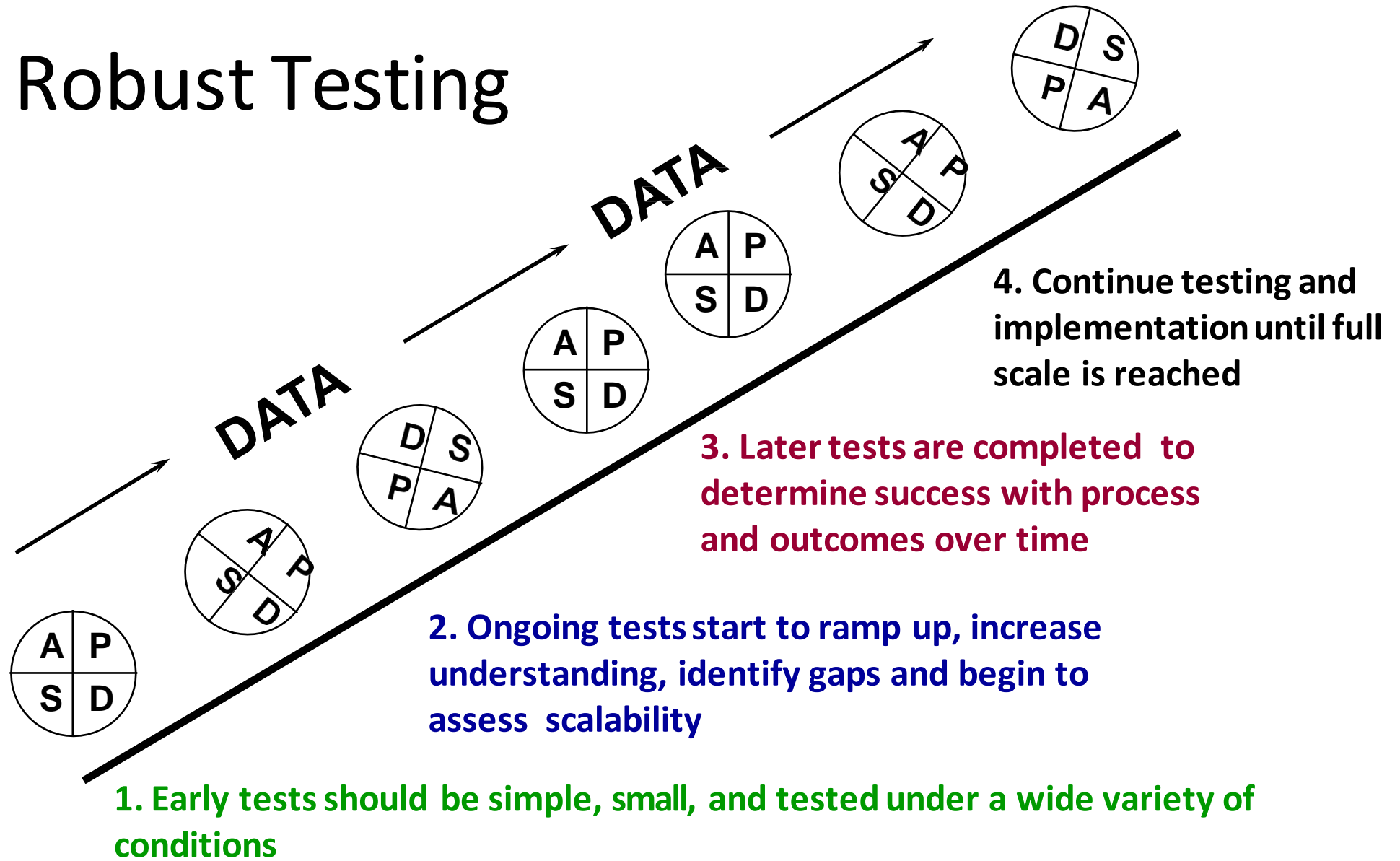| Test with team members who have different levels of experience	Test when patient volume is low/normal/high	Test with staff who are excited about change and with those who are resistant to change	Test on weekdays vs weekends, day/evening/night shift

2. Ramp up your intervention

Increasing by staff or patient volume

Robust Testing

4. Continue testing and implementation until full scale is reached

3. Later tests are completed to determine success with process and outcomes over time

2. Ongoing tests start to ramp up, increase understanding, identify gaps and begin to assess scalability

1. Early tests should be simple, small, and tested under a wide variety of conditions

Make realistic predictions

Start with small tests of change

Collect useful, not perfect data

Understand the difference between test and task

Use a PDSA worksheet to track learning

Test early

Test under a variety of conditions

Stay on task

Assess implementation readiness

Develop an implementation plan

Don't overthink it

Triage Scale: Confidence/Cost of Failure /Commitment
(concept developed by Lloyd Provost)

Current Situation		Staff Commitment to Change		
		Resistant	Indifferent	Ready
Low Confidence that current change idea will lead to Improvement	Cost of failure large	Very Small Scale Test	Very Small Scale Test	Very Small Scale Test
	Cost of failure small	Very Small Scale Test	Very Small Scale Test	Small Scale Test
High Confidence that current change idea will lead to Improvement	Cost of failure large	Very Small Scale Test	Small Scale Test	Large Scale Test
	Cost of failure small	Small Scale Test	Large Scale Test	Implement

Plan-Do-Study-Act (PDSA) 1 WORKSHEET

Team Name: The Repeaters	Date of Test: 1/1/2017	Test Completion Date: 1/15/2017

Overall team/project aim: Improve repeat BP measurement in adults with BP >=140/90 from 10% to 50% within 3 months

What is the objective of the test? To test repeating BP on different days with different MAs and different patients

What goal does the change impact? Blood pressure control

PLAN:

Briefly describe the test: We will test repeating BP when the first BP >=140/90 with 2 of the 5 MAs in our practice on different days and times and with different patients. We will choose to test this with an MA who is very motivated and one with less motivation.

How will you know that the change is an improvement? We will follow our repeat BP measurement data on run charts to determine if improvement is occurring. We will also do a process watch (observation) to identify any additional barriers which may arise.

What driver does the change impact? Repeat BP measurement (Clinical Driver A)
What do you predict will happen? We predict that repeat BP measurement will improve. Our motivated MA will likely repeat BPs more often than our less motivated MA. At busy time periods, MAs may forget or be unable to do a repeat BP.

PLAN

List the tasks necessary to complete this test (what)	Person responsible (who)	When	Where
Provide rationale for repeat BP	Provider	Next week	Staff mtg
Train MAs on when to repeat BP	Charge Nurse	Next week	Staff Mtg
Post reminders for repeating BP at triage computers	Charge Nurse	Next week	Computers
Ensure appropriate equipment available to measure BP	MAs	Next week	Triage areas
Begin repeating BPs at end of databasing when 1st BP elevated	MAs	End of next week	Triage areas

Plan for collection of data: EHR data for repeat BP and observation of process.

DO: Test the changes.

Was the cycle carried out as planned? ☒ Yes ☐ No

Record data and observations. Repeat BP went up from 10% to 20%.

What did you observe that was not part of our plan? MAs took longer and sometimes were unable to get a repeat BP if a patient did not want a repeat BP taken. During busy periods, we often missed getting the repeat BP. Increase to 20% may have included Hawthorne effect (i.e. effect of us observing them), since only 2 MAs were targeted to do new process. This was good news, for anticipated next tests.

STUDY:
Did the results match your predictions? ☒ Yes ☐ No

Compare the result of your test to your previous performance: Repeat BP went from 10-20%

What did you learn?
Repeat BP process works. Need scripting for reluctant patients about importance. Also, need to have another process for when it is very busy.

ACT: Decide to Adopt, Adapt, or Abandon.

☒ **Adapt**   ☐ Adopt   ☐ Abandon:

Plans/changes for next test: Develop scripting for reluctant patients and train MAs on scripting. Also, have a back-up for busy periods. If provider is waiting for a patient, do first BP and put magnet reminder on room so a second BP is taken once provider finished or ask provider if they would have time to check the 2nd BP.

Source: Dr. Shari Bolen, Case Western Reserve University

PDSA 2: 2/8/2017

Plan: for when MAs are very busy. Train MAs on scripting and use of magnet reminders. We predicted that we will increase repeat BP but that MAs will need reinforcement to remember this new behavior as we roll it out to all staff/patients

Do: Test ran as planned. Float MAs had to be trained on the repeat BP process. 2 MAs forgot to recheck BP. Large volume day.

Study: Magnet reminders and scripting working well, but sometimes MAs forget scripting or forget the need to recheck BPs. Also, when float MAs come to clinic, they are not sure of our workflow and process for repeat BPs.

Act: Continue with plan but bring up data every two weeks, and remind staff at daily huddles for two weeks. Train float MAs

References

1. Langley, G. J., Moen, R. D., Nolan, K. M., Nolan, T. W., Norman, C. L., & Provost, L. P. (2009). The improvement guide (2nd ed.). Jossey Bass Wiley.

2. Deming, WE. The New Economics: For Industry, Government, Education. 2nd ed. Cambridge, Mass.: MIT Press, 2000.

3. IHI Improvement Coach Professional Development Program. Fall 2017