



PDSA – How to Get Started in Healthcare Quality Improvement

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Purpose of webinar

Assumes (but does not require) some baseline knowledge of process improvement methodology:

- Provide deeper dive on the use of PDSA in process improvement
- Responds to evaluation feedback from the Introduction to Healthcare Quality Improvement CME workshops
- Help attendees get started in QI

DISCLAIMER: PCPI does not promote one improvement methodology over another – for example, Lean vs. Six Sigma vs. Model for Improvement – PDSA. PCPI **strongly advocates** for using a methodology.

PLEASE NOTE: PDSA is a Lean tool and is often discussed as the Model for Improvement.



Agenda

- What is PDSA?
- Common process improvement steps
- Where does PDSA fit in the QI process?
- What types of improvement projects?
- Who should be involved?
- Setting aims
- How to improve – Using PDSA
- Rules for tests, implementation and spread
- Using the PDSA work sheet
- Examples
- The Value of PDSA
- Q&A



What is PDSA?

Simply stated:

Plan, Do, Study (or check), Act – A change process originally developed by Walter Shewhart (PDCA) and later revised by W. Edwards Deming (PDSA). It is sometimes referred to as the Deming wheel. It is intended to be used in multiple, successive cycles.

If that's too academic, it shouldn't be by the end of this webinar.





Definition: What is standard(ized) work?

Lean Enterprise Institute: By documenting the current best practice, standardized work forms the baseline for kaizen or continuous improvement. As the standard is improved, the new standard becomes the baseline for further improvements, and so on. Improving standardized work is a never-ending process.

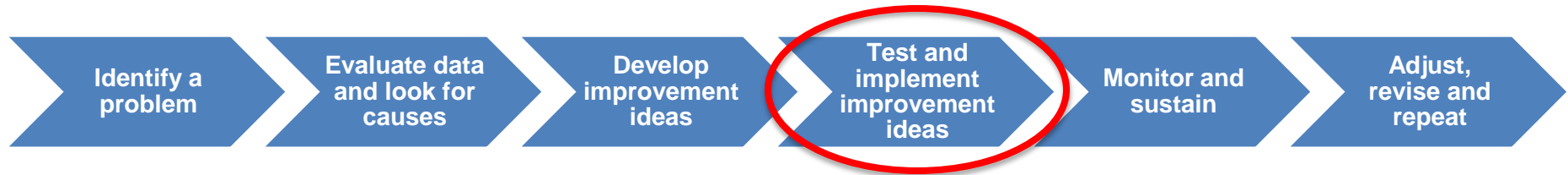
iSixSigma: Standard Work. Detailed definition of the most efficient method to produce a product (or perform a service) at a balanced flow to achieve a desired output rate. It breaks down the work into elements, which are sequenced, organized and repeatedly followed.



General continuous quality improvement work flow

Common elements to Lean, Six Sigma, Model for Improvement, Scientific Method, GE Workout, etc.

When do you use PDSA?





Identifying projects

- Patient safety problem or risk
- Complaints from patients
- Issues physicians or other employees bring to your attention
- Employee shortages
- Expanding or renovating facility space
- Routine extraordinary efforts by employees to keep things working
- Systems that routinely require re-work in order to get things right
- Work flow issues
- Inventory challenges – too much or never enough
- Revenue growth opportunities (eliminating backlogs, improving utilization, or expanding services)



Who should be on the improvement team?

Forming the team

- Right people on the team
- Vary in size and composition depending on needs
 - Clinical leaders
 - Technical expertise
 - Day-to-day leadership and workers
 - Project sponsor



Setting Aims

- “What are we trying to accomplish?”
 - Time specific and measureable (SMART- Specific, Measurable, Attainable, Relevant, Time-bound)
 - Specific population of patients affected or specific system involved
 - Tied to IOM’s six “Overarching Aims for Improvement” - defined in *Crossing the Quality Chasm: A New Health System for the 21st Century*.
 - Safe
 - Effective
 - Patient-centered
 - Timely
 - Efficient
 - Equitable

When creating aims, clearly state:

- Whose doing the work
- For whom
- Where
- Expected rate of improvement
- By when



Aim statement examples

- Increase early identification and treatment of severe sepsis using the Surviving Sepsis Campaign 3-hour bundle on hospital medical, surgical, and telemetry units by 75% in 12 months.
- Reduce Emergency Department patients' wait time for initial physician visit to 20 minutes or less within 6 months.
- Reduce time to schedule, complete and close referrals for cardiac patients by 50% within 6 months.
- Achieve 95% hand hygiene compliance in all inpatient units with new protocol within 12 months.
- Reduce the average number of rapid response team visits to patients admitted to hospital floors from the ED from 3.5 to 1 per month within 90 days using the new hand off standard work procedures and EHR-based communication tool.

Using PDSA

Plan

- State the objective or purpose
- Make a prediction of what will happen and why
- Develop a plan to test the change (Who? What? When? Where? What data needs to be collected?)

Do

- Test the change on a small scale (e.g., one patient, one unit, one shift, one hour – “1:1:1 test”)
- Document what happened – problems and unexpected observations
- Begin data analysis



Using PDSA

Study

- Complete data analysis
- Compare data to predictions
- Summarize learnings and think about meaning

Act

- Adopt, adapt, abandon the change based on results of the test
- Prepare plan for next test





Designing the test

Start with the “1:1:1” test

For example:

- 1 patient
- 1 unit
- 1 shift

Or

- 1 clinical team
- 1 shift
- 1 clinic

- It's a way to determine if the change has merit.
- If it doesn't produce the desired results, start over.
- If it does produce the results you want, you can scale.
- **Special note:** Don't test multiple changes at one time. You won't know what's contributing value or making things worse.



How to scale – use “The 5 Times (5X) Rule”

If you are satisfied with the results of your initial experiment using the “1:1:1 test,” its time to scale!

- Use the “5 times (5X) rule”
 - Multiply the number of patients, units, etc. by a factor of 5.

1 patient X 5 = 5 patients

1 unit X 5 = 5 units

And then: 5 patients X 5 = 25 patients and then multiply by 5 and you have 125 patients

From there you can expand the number and variety of units or environments or implement organization-wide if you are ready. **Then it's...**



...time to finalize standard work

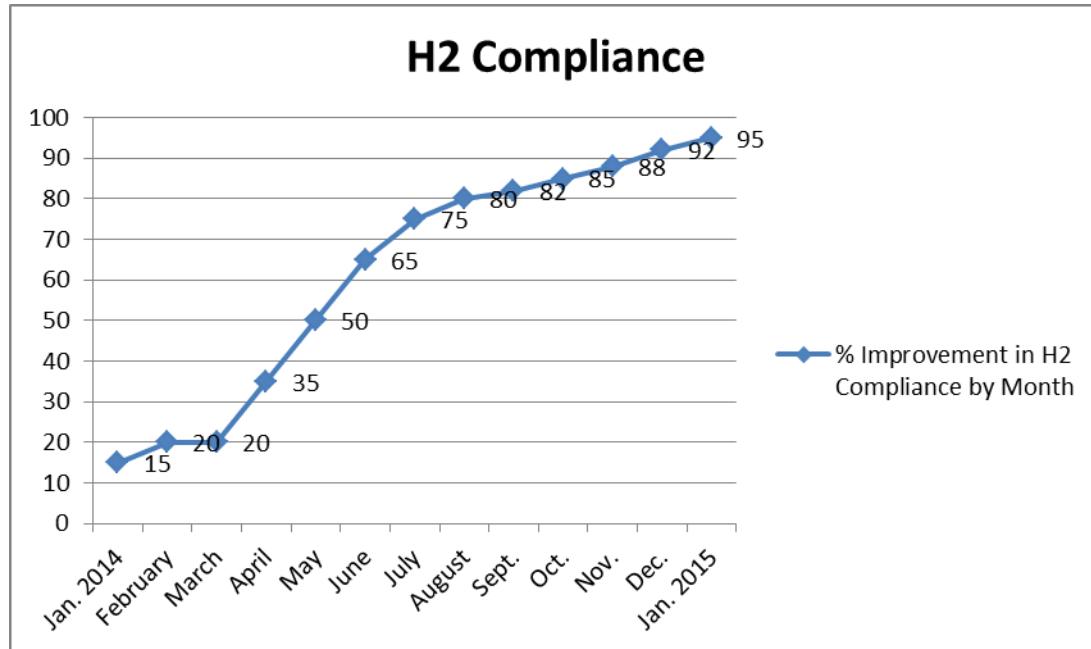
That may include:

- Process work streams and flow maps
- Checklists
- Work orders
- Education and training approaches and programs
- Changes to EHR



Monitor and sustain the improvement

Track performance to ensure improvement occurs and is sustained.
But how? Use a Run or Trend Chart:



Example:
Shows improvement in following new hand hygiene protocol based on direct observation and use of hand sanitizer.



Using the PDSA Worksheet

Clarify the purpose of the PDSA cycle

This cycle will be used to:

- Develop...
- Test...
- Implement...

...a change.

- What question(s) do we want to answer?
- What are our predictions about the change?
- Does the data indicate the change is an improvement? (Quantitative and qualitative data collected)
- Can the improvement be sustained?
- Are we ready to implement? If not, can we revise and retry or do we need to start over?



PDSA Planning Worksheet

DATE _____

Aim statement:

Purpose 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: What, Who, When, Where

<i>What are we developing, implementing or testing?</i>	<i>To whom are we testing the change?</i>	<i>When is the test going to be done?</i>	<i>Where will the test occur?</i>

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

<i>What data do we need to collect?</i>	<i>Who will collect the data?</i>	<i>When will the data be collected?</i>	<i>Where will data be collected?</i>

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.

<i>Prediction</i>	<i>Specificity</i>	<i>Findings</i>

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

<i>Are we ready to implement?</i>	<i>What changes can we make before the next cycle?</i>	<i>What will be the next test?</i>

A version that is easier to write on is available.



PDSA Planning Worksheet

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Example: Development of Patient Self-Management Form

Purpose of Cycle: To choose a patient self-management goal sheet for tracking and inclusion into our chart.

PLAN:

The Change:

<i>What are we testing?</i>	<i>Who are we testing the change on?</i>	<i>When are we testing?</i>	<i>Where will it occur?</i>
Intent is to test two different patient self-management goal sheets to determine which is more functional.	We are initially testing the change on one patient each after their next visit.	The next two patient visits, which will occur the week of 7/18/2016.	The test will be conducted at our ABC facility.



Example: Development of Patient Self-Management Form

DO

The Prediction:

What do we expect to happen? We expect to be able to determine which form our clinical champion, nurse and patients prefer to use to set patient self-management goals.

Data:

<i>What data do we need to collect?</i>	<i>Who will collect the data?</i>	<i>When will the data be collected?</i>	<i>Where will the data be collected?</i>
Subjective findings from the provider and nurse stating which form they prefer to use as well as discussion with patients who are filling out the form.	Clinical champion.	Immediately after the second patient visit the provider and nurse will discuss the two different forms and give their conclusions.	The provider and the nurse will make the decision at the ABC facility after reviewing the forms.



Example: Development of Patient Self-Management Form

STUDY

Complete analysis of data, summarize what was learned, compare data to predictions.

Data:

<i>Prediction</i>	<i>Specificity</i>	<i>Findings</i>
Patients would prefer a form in which he/she did not have to write down information.	Prefer form which would allow them to check off their goals.	9/10 Patients preferred combination of the two forms; allowing him/her to check off goals or write down anything else not listed, which they felt important.



Example: Development of Patient Self-Management Form

ACT

<i>What changes can we make before the next cycle?</i>	<i>What will the next test be?</i>
We will change the form to allow space for those patients who do want to write in a goal to be able to do so.	We will be using the selected form with the next five diabetic patients from our registry.



Example: Use ED Clinical Summary in EMR as ED to floor hand off tool

Purpose of Cycle: To test value of the EHR's ED clinical summary to replace EHR SBAR tool, to assist inpatient nurses (receiving) to prepare for patient hand off from the ED.

PLAN

The Change:

<i>What are we testing?</i>	<i>Who are we testing the change on?</i>	<i>When are we testing?</i>	<i>Where will it occur?</i>
Test whether the ED clinical summary in the EHR has sufficient information to support a smooth hand off between the ED and inpatient nurses.	We are initially testing the change on all patients transferred from ED to floors (in scope of project).	From 10 am to 12 pm.	2 West, 2 East, 4 West.



Example: Use ED Clinical Summary in EMR as ED to floor hand off tool

DO

The Prediction:

We expect that the information contained within the ED clinical summary to answer inpatient nurses questions about patient prior to their arrival on the floor from the ED.

Data:

<i>What data do we need to collect?</i>	<i>Who will collect the data?</i>	<i>When will the data be collected?</i>	<i>Where will the data be collected?</i>
Subjective findings from the primary and charge nurses after they have had a chance to review relevant field in the ED clinical summary.	RIE (Rapid Improvement Event) team members assigned to specified units.	From 10 am to 12 pm today.	RIE members will be stationed in units when patients arrive collect on paper forms for test.



Example: Use ED Clinical Summary in EMR as ED to floor hand off tool

STUDY

Complete analysis of data, summarize what was learned, compare data to predictions.

Data:

<i>Prediction</i>	<i>Specificity</i>	<i>Findings</i>
Receiving nurses (floor primary and charge) will find the ED clinical summary data to be a significant improvement over the existing EHR hand off communication tool (SBAR) in being prepared for patients when they arrive on the floor.	Use of the ED clinical summary, with the opportunity to talk with ED primary or charge nurse provides an improved, patient hand off.	Once oriented to the ED clinical summary, 100% of floor nurses said it was far superior to using EHR SBAR or other paper forms in use. They liked that although they did not always talk with sending ED nurses on initial call, it was helpful to have ED contacts listed. The new tool reduced back and forth, missed calls and frustration among the staff in the 9 patients followed.

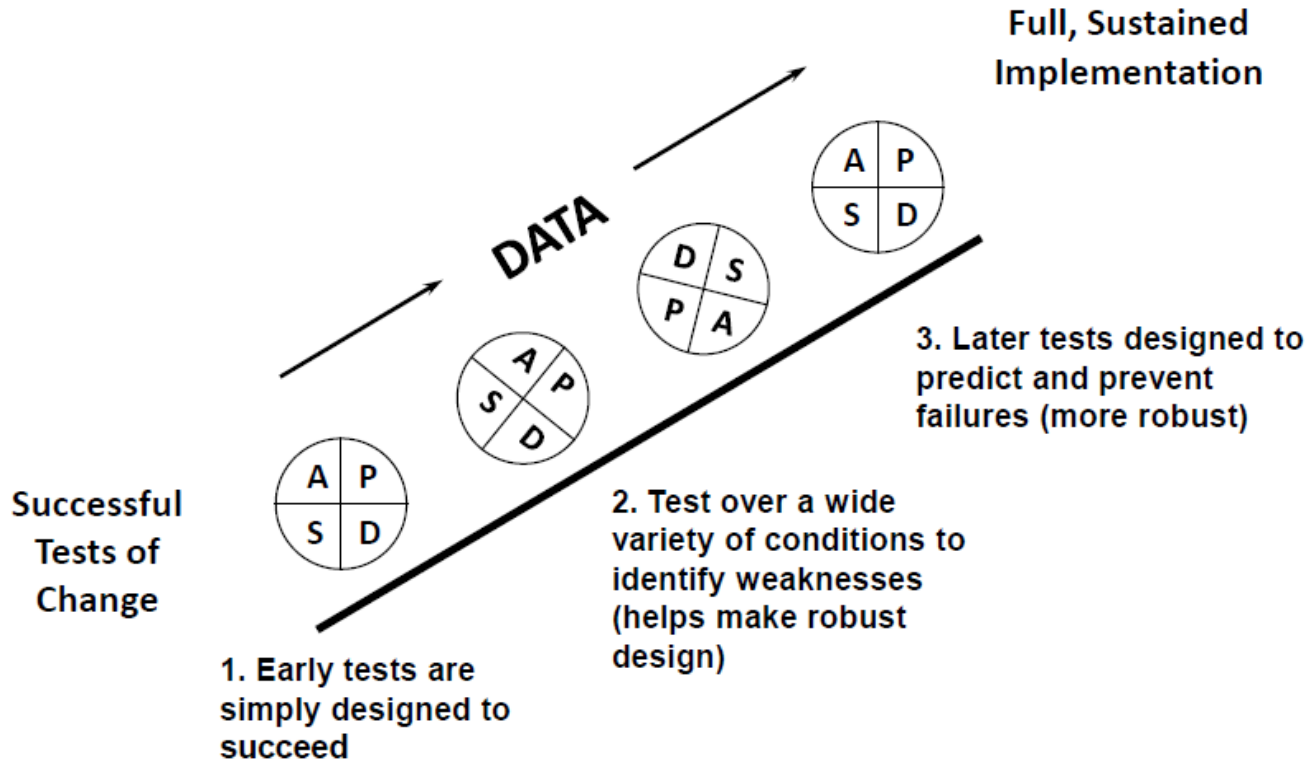


Example: Use ED Clinical Summary in EMR as ED to floor hand off tool

ACT

<i>What changes can we make before the next cycle?</i>	<i>Are we ready to implement the change we tested?</i>	<i>What will the next test be?</i>	<i>When will the next test be?</i>
RIE will meet with EHR team to make modifications based on feedback to create specific handoff tool.	Yes. We have created standard work flow and new hand off tool can replace ED clinical summary when it is available following system-level review and approval.	No new test required.	System-wide implementation of temporary tool with new standard work for bed coordinators, ED nurses, inpatient nurses, ED MDs (residents). Organization-wide implementation will be on Monday, July 18, 2016

Linking PDSA Cycles





Benefits of PDSA

- Test small changes to assess impact and whether they are actual improvements
- Increase the likelihood the change will be an improvement
- Test the change in various environments
- Modify and refine new standard work and tools in near real-time
- Re-test before full implementation
- Minimize disruption and potential for adverse operational and safety outcomes
- Engage those involved in the work with the solutions to improve how they work
- Evaluate cost and potential unintended consequences
- Build support for implementing change in the organization



Thank you!

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