

Quality improvement using Plan-Do-Study-Act



Strategies for local quality improvement.

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American College of Physicians

How will this module help me successfully make changes in my practice?

- 1 Four STEPS to quality improvement using the (PDSA) method
- 2 Answers to common questions about the PDSA method
- 3 Downloadable toolkit with samples and templates

Increasing administrative responsibilities—due to regulatory pressures and evolving payment and care delivery models—reduce the amount of time physicians spend delivering direct patient care. A structured approach to quality improvement can help practices successfully implement the change they want to make. Plan-Do-Study-Act (PDSA) cycles provide a straightforward approach to implementing a change in practices and continuing to make improvements. This approach works on many changes from improving a patient care process to executing a new workflow.

Plan-Do-Study-Act

Release Date: March 2016

End Date: March 2019

Objectives

At the end of this activity, participants will be able to:

1. Select a quality improvement initiative
2. Implement an improvement initiative
3. Evaluate the success of the improvement initiative
4. Adjust the improvement initiative based on the results

Target Audience

This activity is designed to meet the educational needs of practicing physicians.

Statement of Need

Engaging practices in quality improvement is “essential to achieving the triple aim of improving the health of the population, enhancing patient experiences and outcomes, and reducing the per capita cost of care, and to improving provider experience.” ([AHRQ Quality Improvement in Primary Care](#)) Quality improvement initiatives are also essential for setting priorities for areas to improve: if there is no specific plan for measurement, there can be no improvement. This module will guide practices in planning these measurement cycles for true improvements in their practices.

Statement of Competency

This activity is designed to address the following ABMS/ACGME competencies: practice-based learning and improvement, interpersonal and communications skills, professionalism, systems-based practice and also address interdisciplinary teamwork and quality improvement.

Accreditation Statement

The American Medical Association is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Credit Designation Statement

The American Medical Association designates this enduring material for a maximum of 0.5 *AMA PRA Category 1 Credit*[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Claiming Your CME Credit

To claim *AMA PRA Category 1 Credit*[™], you must 1) view the module content in its entirety, 2) successfully complete the quiz answering 4 out of 5 questions correctly and 3) complete the evaluation.

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About the Professional Satisfaction, Practice Sustainability Group

The AMA Professional Satisfaction and Practice Sustainability group has been tasked with developing and promoting innovative strategies that create sustainable practices. Leveraging findings from the 2013 AMA/RAND Health study, “Factors affecting physician professional satisfaction and their implications for patient care, health systems and health policy,” and other research sources, the group developed a series of practice transformation strategies. Each has the potential to reduce or eliminate inefficiency in broader office-based physician practices and improve health outcomes, increase operational productivity and reduce health care costs.

Disclosure Statement

The content of this activity does not relate to any product of a commercial interest as defined by the ACCME; therefore, neither the planners nor the faculty have relevant financial relationships to disclose.

Media Types

This activity is available to learners through Internet and Print.

Hardware/software Requirements

Adobe Flash 9.0.115 or above

Audio speakers or headphones

Screen resolution of 800X600 or higher

MS Internet Explorer 8.0 or higher, Firefox, Opera, Safari, etc.

Adobe Reader 5.0 or higher

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Introduction

Quality improvement using Plan-Do-Study-Act

PDSA provides a straightforward, iterative approach to quality improvement in your practice. The framework is easy to adopt regardless of practice size or resources. As ongoing quality improvement becomes part of your practice’s culture, your team will continue to find opportunities to make existing and “improved” processes better.



Institute for Healthcare Improvement. Science of Improvement: How to Improve. 2016.

Four STEPS to use PDSA:

1. Plan: develop the initiative

2. Do: implement your plan

3. Study: check the results

4. Act: make further improvements

1 Plan: develop the initiative

Select your improvement initiative

Involve your team in selecting the quality improvement initiative. Most good ideas for improvement come from the people doing the work, so consider the perspectives of the clinical team members as well as the clerical staff. Patient surveys can also be used to identify areas for improvement.

To identify areas for improvement, consider asking these questions:

- **Where does your practice need to improve patient care?**

Your practice may already have performance measure data from a [Physician Quality Reporting System \(PQRS\)](#) or [point-of-care registry](#) that can reveal gaps in care processes or patient outcomes.

- **Where is your practice less efficient than it should be?**

Staff may be able to identify bottlenecks in the workflow. Prioritize those areas that you have some control over and that the team thinks will be most impactful. Use a “[go and see](#)” approach of respectfully observing the work and then asking “why?” A team member can help identify key areas for workflow improvement within the bottleneck.

- **What about the day is most frustrating for your team and/or patients?**

Ask patients and staff. This will generate a list from which you can prioritize areas for improvement.

Reference the module on [selecting sustainable change initiatives](#) for more guidance on choosing areas for improvement in your practice.

Q&A

[What are some examples of quality improvement initiatives that other practices have selected?](#)

Common targets of PDSA cycles include:

- adult immunizations
- [diabetes](#) or hypertension screening and care
- no-show rates
- [results reporting](#)
- [patient registration processes](#)
- hold times or wait times
- [finishing days on time](#)

You may want to visit your specialty’s professional society quality improvement website, such as the [American Society of Clinical Oncology Institute for Quality](#), for more ideas.

Identify your PDSA team

The people doing the work should be the ones planning and guiding the process improvement initiative. Your PDSA team should thus include representatives from all areas of your practice that will be affected by the improvement. Set expectations for the time commitment to the PDSA team early in the cycle and plan to continue working together through implementation. You may also choose to have a core quality improvement team that rotates in specialized representatives based on the initiative. Most teams work best with a maximum of 10 people. Practice members who are not on your PDSA team should receive regular updates about the initiative’s progress.

Q&A

What is an example of a PDSA team?

Your team could include physicians, practice leadership, nurses, medical assistants, receptionists, potentially patients, IT and coding and/or compliance staff. For example, if your practice's first PDSA project is to increase rates of adult pneumococcal vaccinations, your team may consist of the following representatives:

- A physician champion or leader can provide clinical expertise and secure support from providers as well as practice and/or system leadership.
- The front desk lead can distribute information about vaccines to appropriate patients upon check-in or before their appointments through email or a patient portal.
- A practice manager or supervisor can work directly with the electronic health record (EHR) or IT representative to develop a daily report of patients over the age of 65 who do not have a documented pneumococcal vaccination. The practice manager could also serve as the [project manager](#) and administrative lead for the initiative.
- A nurse or medical assistant can offer insight about current workflows and the most effective way to reshape the practice's current workflow to reflect the new process. He or she will likely be the one administering the vaccine, so his or her input is particularly important.
- An IT representative can program a clinical decision support reminder to administer and record vaccinations.

DOWNLOAD [Project management 101](#)

Why is leadership support important?

Keeping your leaders informed will help you gain their support and could help your team obtain the resources needed to make the desired change. For larger-scale initiatives, senior-level support is essential. Communicate with leaders about the potential for improved performance measures, workflow efficiencies and/or cost savings. See the [Starting Lean module](#) for more information about identifying a champion for your quality improvement work.

How can I include patients in my practice's PDSA effort?

It is important to design care with patients, instead of designing care for patients. Towards this end, your practice could include one or two trusted patients on the quality improvement team. If your practice does not use patient advisors regularly, start with a simple survey to find out what patients value in the process that you are focused on improving.

Develop your plan

Your quality improvement team should work together to develop a [plan](#). Using the framework of [Lean](#) – the plan is an experiment that will help you identify what you do not yet know about the work. A Lean A3 worksheet is a useful tool to help guide this plan. In addition, the following questions can help you formulate your plan:

- What does my practice want to accomplish?
- Why is this a priority? (Of all the possible areas for improvement, why is my practice focused on this one in particular?)
- What current process is my practice changing?

- What does the new process look like?
- How will the new process become hardwired into the practice?
- Who will enact the changes?
- When will the changes be made?
- Where will the changes take place?
- What team training and preparation are required?
- Will patients be affected? How? Which patients will be affected?
- What results do you expect?
- How will you measure the impact of the changes? What process and outcome measures will you use?
- How and when will you inform the team about progress?

DOWNLOAD [ACP Quality Connect: PDSA planning worksheet](#)

DOWNLOAD [Process map toolkit](#)

Q&A

[What if my project is focused on my practice's IT utilization and workflows? Are there resources to help me?](#)

The Agency for Healthcare Research and Quality (AHRQ) has a detailed IT workflow assessment toolkit to help your practice navigate IT-related quality improvement efforts.

2

Do: implement your plan

With a committed team and a specific plan, you are ready to implement your quality improvement initiative. Communicate with the team about the new process to keep your practice on track, and share any inspiring stories to keep the team excited about the change. Conduct regular audits to ensure the new process is hardwired into the practice by the team. Discuss adoption of the new process regularly at huddles and meetings.

“

My practice benefited from making changes, especially in team-based care. I have felt empowered through education and have been able to provide better care through better staff engagement that involves everyone in practice improvement.

”

Brenda Vozza-Zeid, MD,
FACP; Henderson, TX

Q&A

What is the best approach to rolling out the change in my practice?

Start small by piloting the improvement with one physician or in one pod. This can help the initiative gain traction, and it can help the PDSA team and pilot team work together to successfully implement the new process. Team leaders can communicate with the rest of the practice and practice leadership about the initiative’s progress and promote its importance.

Are there any support networks that can help my practice improve?

Organizations that provide support to practices implementing quality improvement initiatives include:

- Area Health Education Centers (AHECs)
- Health Information Technology Regional extension centers (RECs)
- Quality Improvement Organizations (QIOs)
- Quality Innovation Network QIOs (QIN-QIOs)
- Practice-based Research Networks (PBRNs)
- Local or regional [Practice Transformation Networks \(PTNs\)](#)

3

Study: check the results

This step may also be referred to as “Check.” Use the process or outcome measures the PDSA team chose during the planning phase to evaluate the success of the process change. A classic technique to visualize changes over time is a run chart, which can be displayed in a team area or shared regularly at meetings.



DOWNLOAD [Run chart](#)

At this stage of the PDSA cycle, your team can review the results of the process change implementation. Compare your actual results to your expected results (as well as to previous outcomes or process measures, if available), and consider the factors that might have contributed to the findings. You may discover that your team has been very successful or that you are not seeing the improvement you anticipated. You can [work together with your team to identify why the observed results were achieved](#).

DOWNLOAD [Simplified practice assessment](#)

DOWNLOAD [ACP quality connect: setting your QI goals worksheet](#)

“

I thought I had a good handle on managing my diabetic patients but I learned about facilitating good decision-making by my patients, coaching behavioral changes and gaining insight into patient compliance. I also learned about how to engage my office staff into optimizing OUR care of OUR diabetic patients.

”



Robert Dobbin Chow
MD, MBA, MACP, Baltimore, MD

Q&A

What are some examples of process and outcome measures that we can monitor?

Process measures assess the actions undertaken by the clinical team. Examples include:

- Percentage of patients with diabetes who have a current A1c documented
- Percentage of patients who have their blood pressure checked at their visit
- Percentage of patients who have pre-visit labs obtained

Outcome measures assess results. Examples include:

- Percentage of patients who have an A1c less than 7.0
- Percentage of patients with blood pressure at goal
- Patient, physician and team satisfaction ratings

4

Act: make further improvements

This phase may also be referred to as “Adjust.” During this final stage of the PDSA cycle, your team can take the following courses of action:

Action	Rationale
Restart the cycle at the planning phase	<p>The plan is not achieving the desired results. Based on your analysis, define failures in the plan or execution and correct them.</p> <hr/> <p>The plan is meeting or surpassing the desired results, and the team sees opportunity for even better outcomes. Based on your analysis, refine the current process in the next planning phase. Look for other areas in your practice to expand your successful improvement.</p>
Discontinue the plan	<p>The plan did not work or is better suited for another time or environment. Go back to the planning phase to overhaul the existing plan or develop a new one.</p>

AMA. Practice transformation series: Plan-Do-Study-Act. 2016.

The PDSA cycle is meant to be continuous; even your best processes can be improved and become more consistent. You can further refine your processes by repeating the cycle.

Q&A

What are some real-world examples of PDSA analyses and follow-up actions?

The table below provides some examples of analyses and follow-up actions from real practices.

Table 1. PDSA examples

Plan		Do	Study/Act
Quality improvement goal	Identified area of improvement	Process change to be implemented	Process/outcomes measured
Increase removal of shoes and socks of patients with diabetes upon rooming	Lack of consistency in removal of shoes and socks, resulting in low percentage of foot exam completion.	Signage for patients, updated checklists and training for staff	<ol style="list-style-type: none"> Number of foot exams completed Increased percentage of patients with foot exams

Plan		Do	Study/Act
Quality improvement goal	Identified area of improvement	Process change to be implemented	Process/outcomes measured
Increase documented foot exams in the EHR	Different members of the team document foot exams in different places in the EHR, giving the appearance that the exams are not being completed in a consistent manner.	<ol style="list-style-type: none"> 1. Program the EHR to support consistent entry of foot exam documentation 2. Train staff on data entry 	<ol style="list-style-type: none"> 1. Number of staff trained 2. Increased percent of foot exam documentation completed correctly
Decrease amount of physician time spent on documentation after clinic hours	Physicians are documenting many elements of the visit that could be completed by MAs or nurses.	<ol style="list-style-type: none"> 1. Share responsibilities during the patient rooming process 2. Train MAs or nurses to document the patient visit 	<ol style="list-style-type: none"> 1. Number of MA or nurses trained 2. Decrease in after-hours documentation time
Increase depression screening for patients with chronic pain and/or substance abuse	Patient surveys revealed that they felt uncomfortable completing a depression assessment in the waiting room.	<ol style="list-style-type: none"> 1. Conduct the screening in the exam room prior to being seen by the physician 2. Train the rooming staff to conduct the PHQ-2 and PHQ-9 as appropriate 	<ol style="list-style-type: none"> 1. Percent of screening completed in the exam room vs. waiting room 2. Improvement in patient feedback about screening process
Increase pneumococcal immunization among older patients	A consistent process for identifying appropriate patients for pneumococcal vaccine does not exist. Surveys revealed that some patients seem concerned about receiving vaccines.	<ol style="list-style-type: none"> 1. Work with EHR vendor to build a flag for appropriate immunizations based on clinical guidelines 2. Implement a pre-visit planning process to anticipate immunization and screening needs for all patients 3. Educate the clinical team to communicate more effectively about the need for the immunization of appropriate patients 	<ol style="list-style-type: none"> 1. Correct vs. incorrect identification of patients in EHR 2. Number of patients identified during pre-visit planning 3. Increased number of pneumococcal immunizations received by older patients

AMA. Practice transformation series: Plan-Do-Study-Act. 2016.

What methods should I use to communicate the results of the PDSA cycle?

Your team, stakeholders and patients will be eager to learn more about your successes. Write up a brief summary of the quality improvement initiative and its results. Present a summary of the report during a lunch time meeting and celebrate your successes. Post a summary of the effort, with photos, on a bulletin board in a common area. Consider making a data wall or dashboard that tracks every initiative and displays practice goals. Continue to prominently display regular updates of run charts. This kind of positive reinforcement through communication and recognition can drive greater teamwork and continued quality improvement in your practice.

How should I communicate the results to patients?

Patients and their caregivers can be an integral part of your quality improvement efforts. Surveys that gather outcomes data can help you monitor the patient experience in your practice. Summarize your results and report them to patient advisory groups, through your patient portal or by email.



AMA Pearls

Start small

Try using the PDSA framework on a simple initiative first so you can gain familiarity and comfort with the methodology. For example, if you want to increase rates of flu vaccinations in your practice, use PDSA to develop and implement a communications strategy during the upcoming flu season. Take what you learn to make improvements to your approach during next year's flu season.

Use other analysis tools to approach improvement

This module provides the framework for making local changes in your practice. If you are taking on a larger quality improvement effort, try these **tools**:

- A **fishbone diagram** to show cause and effect
- A **Pareto chart** to identify the most influential cause(s) of a problem
- A **scatter plot** to reveal causal relationships
- A **check sheet** for easy data collection and to show patterns
- The STEPS Forward™ **Starting Lean healthcare** module

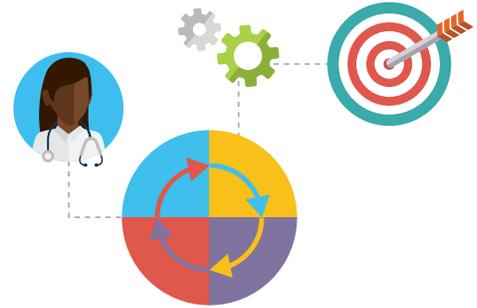
Set SMART goals for your PDSA quality improvement initiative

Help your team stay focused and efficient through impactful goal setting. For example, one practice goal may be to increase depression screening among patients with a diagnosed substance use disorder. Using the SMART approach, your goal would look like this:

- **S**pecific: Your practice will increase depression screening from 20 to 50 percent of patients with diagnosed substance use disorders.
- **M**easurable: You will use manual or electronic chart audits to document depression screenings.
- **A**chievable: You've set a reasonable goal of 50 percent rather than 100 percent. You want to set an attainable goal; the bar can always be raised if your change is successful.
- **R**elevant: There is a clear gap in care because only 20 percent of your target population is being screened for depression.
- **T**ime-bound: The goal will be achieved over the next three months. A reassessment (the "study" step of PDSA) will occur three months from now.

Conclusion

Any practice team can accomplish quality improvement if they use straightforward, small steps. Foster your internal capabilities and expertise to develop more reliable systems to improve care. With careful thought given to each aspect of the PDSA cycle, ongoing communication between team members, practice staff and patients, and careful attention to metrics, your practice can successfully reach its goals.



STEPS in practice

1

How's it working in Brooklyn, NY?

University Physicians Group is a multi-specialty, 65-physician medical practice with offices in Staten Island and Brooklyn, NY.

The group started their first PDSA cycle in 2014 to address what they viewed as suboptimal diabetes outcomes during the previous year. They thought communication and educational processes might be improved to help their patients achieve better outcomes.

They began with a simple questionnaire that asked patients what they understood about diabetes and their care plans before each visit. This questionnaire covered the purpose of tests for diabetes, what the test results mean, and terminology related to diabetes care. The survey revealed a gap in what the doctors believed their patients understood about their disease and their care plan and what patients actually understood.

Patients with diabetes did not consistently have the information necessary to properly manage their own care. The survey results also indicated that the patients did not feel comfortable asking questions even when they did not comprehend the physician's instructions. For example, 21 percent of the patients surveyed did not know the difference between fasting and non-fasting glucose measures, but they were afraid to ask their doctor to clarify what the measures meant.

Armed with this information, University Physicians Group developed a plan to accomplish two things:

1. Improve communication with patients so that they understand their disease and the care plan that they created with their physician
2. Improve outcomes for patients with diabetes

The plan that University Physicians Group created relied on the medical assistants (MAs)—who have the most hands-on time with patients—to educate and coach patients with diabetes. The practice disseminated the plan from the executive level to the office managers and then to the MAs. Getting buy-in from the group's physicians was easy; diabetes is prevalent among the group's patient population and improving communication is something that interested the physicians on both a personal and professional level.

No additional staff needed to be hired; instead, the current MAs were **trained** to ask patients the following:

- Do you have a glucometer and if so, do you know how to properly use it?
- Do you know the difference between fasting and non-fasting glucose?
- Do you know what HbA1c is and do you know your most recent HbA1c test result?
- Do you have insurance and if so, what kind?

Gathering this information helped the MAs tailor the educational material and **coaching** intensity for each patient. Approximately 150 patients were enrolled in a pilot program, which was implemented in the group’s two offices in mid-2015.

After three months of the pilot program, the practice resurveyed patients to check the initial impact. Results were favorable. Data is being collected on an ongoing basis and the group intends to start the “study” step of their PDSA cycle soon. Based on the findings, they will decide if they need to adjust their plan. One aspect of the plan that they already know they’d like to refine during the next PDSA cycle is to use the EHR more effectively for data collection.

The PDSA process was well-received, in part because the initiative selected was equally important to all of the group’s care team members. University Physician’s Group is excited to start on the next cycle.



To demonstrate completion of this module and claim *AMA PRA Category 1 Credits™*, please visit:

www.stepsforward.org/PDSA

Get implementation support

The AMA is committed to helping you implement the solutions presented in this module. If you would like to learn about available resources for implementing the strategies presented in this module, please call us at (800) 987-1106 or [click here](mailto:StepsForward@ama-assn.org) to send a message to StepsForward@ama-assn.org



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