Rapid Cycle PDCA

Grace Duffy, John Moran, William Riley

We are often asked "What is Rapid Cycle PDCA?" The word "Rapid" means done or occurring in a brief period of time and characterized by speed.[1] "Cycle" means an interval during which a recurring sequence of events occurs.[2] Therefore Rapid Cycle PDCA, as shown in figure 1, is applying the recurring sequence of PDCA in a brief period of time to solve a problem or issue facing a team or organization that will achieve breakthrough or continuous improvement results quickly.

PDCA/PDSA should be repeatedly implemented in spirals of increasing knowledge of the system that converge on the ultimate goal, each cycle closer than the previous.

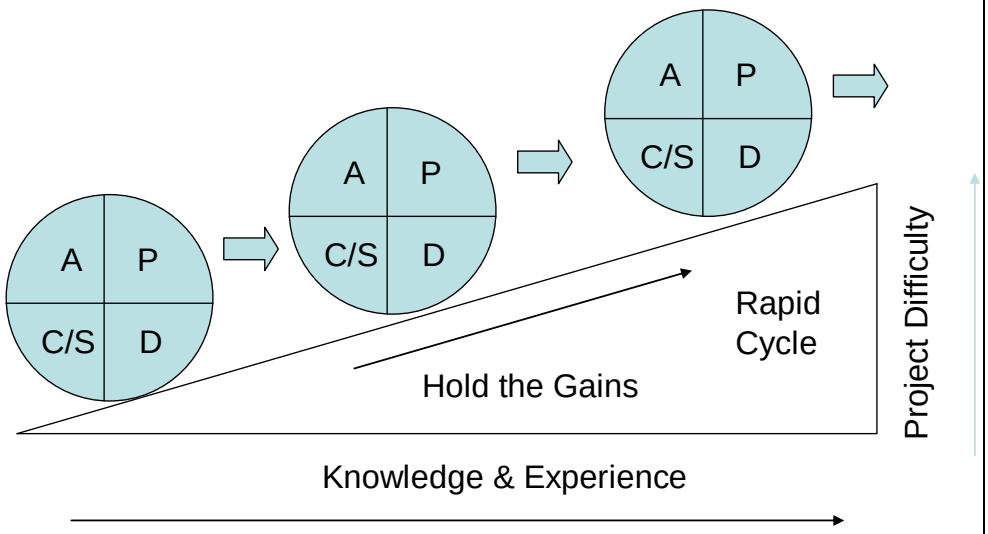

Figure 1

Too often we encounter teams or organizations that launch a PDCA effort but take 3 months to do what could be accomplished in 3 days or 3 hours. They waste too much time and energy by not solving the problem quickly. These teams fail to hold the gains or move on to the next organizational challenge. Consequences of not doing rapid cycle PDCA is that team

[1] www.wordnet.princeton.edu/perl/webwn
[2] www.wordnet.princeton.edu/perl/webwn

members lose interest, become bored with a long process, do not gain experience and knowledge in applying QI, and do not see the impact of their efforts for a long time.

Figure 2 shows the Rapid Cycle Process Model which defines the steps to ensure a successful rapid cycle application of PDCA.

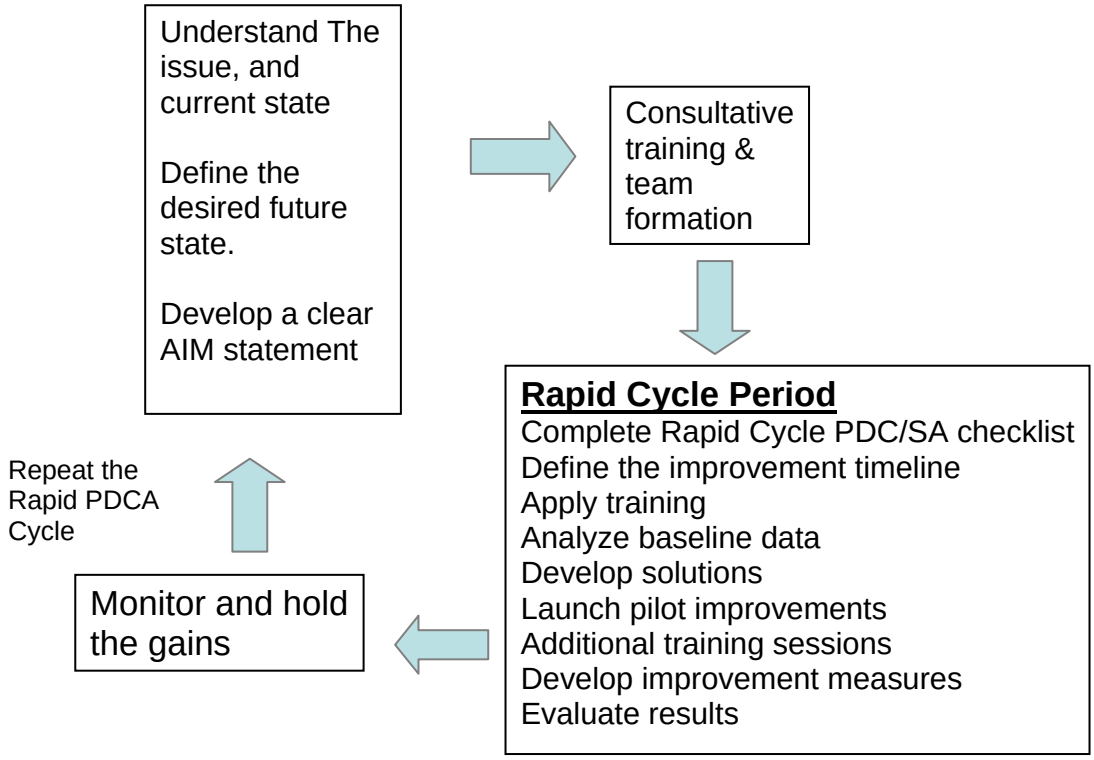

Figure 2 Rapid Cycle PDCA/PDSA Process Model

The Rapid Cycle Process is defined as follows:

- **R**ealization of a problem or issue that needs to be corrected. Management is committed to making the change.
- **A**ct to start a resolution or change to the problem or issue by utilizing the QI tools and techniques.
- **P**lan for success by developing a clear AIM statement.
- **I**nvolve key constituents in the PDCA process.
- **D**evelop the change team and establish the rapid cycle time line.

- **C**onsultative training interventions as required by the team.
- anal**Y**ze baseline data and understand the current state and scope of the problem.
- **C**onstruct solutions to get to the desired future state.
- **L**aunch pilot improvement solutions to determine if the desired change can be achieved.
- **E**valuate results achieved from pilot improvement, make any necessary adjustments and launch it throughout the organization.

The utilization of a Rapid Cycle PDCA process helps organizations realize a quick return on its investment in QI. Some of the benefits of instituting Rapid Cycle PDCA are:

- short cycles of change to accelerate quality improvement in the organization,
- hold the gains as a platform for the next level of project improvement,
- develop a broad base of QI knowledge and experience in the organization, help in the establishment of an organization-wide culture of quality and excellence,
- solve many organizational problems that will promote needed organization change and improvement, and
- provide an iterative opportunity for team members to reinforce their QI knowledge quickly in the next project.

A *Pre-Planning Check Sheet* has been developed to help in using Rapid Cycle PDCA/PDSA (see Table 1). The check sheet contains questions that guide you when starting a Rapid Cycle Quality Improvement Project. This checklist leads you through the Rapid Cycle pre-planning to ensure a successful improvement project.

The check sheet provides columns to indicate what has been completed (√) and what needs to be done (TBD) along with the expected completion date.

Table 1: **Rapid Cycle PDCA/PDSA Pre-Planning Check Sheet**

Step	Rapid Cycle PDCA/PDSA Pre-Planning Check Sheet	TBD/ Date	√
PLAN:			
	What is the focus/AIM of this improvement project?		
	What are the improvement goals?		
	Who is impacted?		
	What is impacted?		
	When is it impacted?		
	Where is it impacted?		
	Why is it impacted?		
	How is it impacted?		
	Who is the customer?		
	Who is the supplier?		
	What are the constraints?		
	What is the rapid cycle time line?		
	Who should be on the improvement team?		
	✓ Who are the right people? ✓ What training does the improvement team require? ✓ Who will deliver the required training? ✓ When will the required training be delivered		
	What do we predict will happen?		
	Measurement(s) defined /developed to show current performance and future track future improvements.		
	Action plans developed to detail what will be done by who and when		
	Communication plan developed to inform needed parties of potential changes, timing, and status		
	What additional information will we need to take action?		
	Other **Plan** questions unique to your improvement project		
DO:	Improvement plan developed?		
	When will the improvement plan be implemented?		
	When will the pilot test be carried out?		
	What did we observe from the pilot test?		
	Did we get sponsors approval and their support if implementation means going outside our personal area of responsibility?		

	Did we document the implemented changes so the process can be duplicated and standardized?		
Check/ Study:	Do the pilot test results agree with the predictions that we made earlier?		
	√ If not, why?		
	What new knowledge was gained through this cycle?		
	How will we use this new knowledge to make additional improvements?		
	Are we continually checking the results as the process is initiated and after it is in place to determine if the changes are meeting requirements?		
	Are the measurements used to determine success adequate?		
	Did we automate data gathering if at all possible?		
ACT:	Did we go back to **'Plan'** if the process still is not meeting requirements and investigate additional process improvement opportunities?		
	Did we make minor adjustments and document them?		
	Did we standardize the change and initiate the SDCA Cycle?		
	If the process changes meet requirements, have we set up continued monitoring after standardization?		

Add other questions that are applicable to your particular improvement project.

Grace L. Duffy, CMQ/OE, CQIA, CLSSMBB is a senior consultant with the Public Health Foundation, an ASQ Fellow, and author of several quality and leadership texts.

John W. Moran, Ph.D., CMQ/OE, CQIA is Senior Quality Advisor for the Public Health Foundation. He is also an ASQ Fellow and author of many business and academic texts.

William Riley, Ph.D., CQIA is Associate Dean, School of Public Heath, and University of Minnesota.

All three authors are contributors to The Public Health Quality Improvement Handbook, released by ASQ's Quality Press in 2009.