Continuous Quality Improvement

Continuous Quality Improvement (CQI) was developed in industry during the 1940s in an effort to train workers to continually improve the quality of production. The PLAN, DO, CHECK, ACT (PDCA) Cycle provides a framework for the improvement of a process or system. It is a dynamic process in which completion of one turn of the cycle flows into the beginning of the next. Following in the spirit of continuous quality improvement, the process can always be reanalyzed and a new test of change can begin. The PDCA (or PDSA) Cycle was originally conceived by Walter Shewhart in 1930's, and later adopted by W. Edwards Deming.

Deming taught workers to collect and use their own data, 'statistical quality control', about the processes and production in which they were involved. He countered the notion that personal opinions and experience were adequate, or even desirable, for decision making. He emphasized the improvement of the process, the entire system, rather than focusing on the faults of the individual. Deming taught that efficiency could be improved by including everyone involved, even the customer, to delineate and assess the process, collect data and elucidate a problem, develop and plan an improvement, make the change, and re-evaluate to see if it had the expected result. This would be repeated, continuously with the aim of achieving quality of 100 percent.

Fundamental principles of CQI include:

- Data-driven decision making (use objective data to help us understand the problem and by which we can compare (positive) change to)
- Multidisciplinary, team decision making – a team working on a particular problem should represent all staff involved in the process
- Systematic, stepwise approach to problem identification and resolution

Management had the responsibility for all these steps prior to the introduction of the CQI model. Management typically would establish quality quotas and individual production norms. Deming felt that, "every activity is a process and can be improved". Use of the PDCA Cycle has now been applied successfully around the world in many different industries and businesses, including health care.

What are the major steps in the PDCA Cycle?

1. Plan - Analyze what you intend to improve, looking for areas that hold opportunities for change. The first step is to choose areas that offer the most return for the effort you put in-the biggest bang for your buck. Study a particular process —what changes might be desirable? Organize the appropriate team. What data are available? Are new observations needed? If yes, plan a change or test. Decide how you will use the observations.
2. Do – Search for data on hand or carry out the change or test, preferably on a small scale, to collect data. Implement the change you decided on in the Plan Phase.
3. Check – Observe or study the effects of the change or test. After you have implemented the change for a short time, you must determine how well it is working. Is it really leading to improvement in the way you had hoped? What did you learn? What went right? What went wrong?
4. Act – Adopt the change, abandon it, or run through the cycle again. After planning a change, implementing and then monitoring it, you must decide whether it is worth continuing that particular change. If it consumed too much of your time, was difficult to adhere to, or even led to no improvement, you may consider aborting the change and planning a new one. However, if the change led to a desirable improvement or outcome, you may consider expanding the trial to a different area, or slightly increasing your complexity. This sends you back into the Plan Phase.

Solano Public Health has embraced CQI and the PDCA Cycle as a strategy to guide our quality improvement activities. We currently have five active CQI project: HIV, Diabetes, Clinic Operations, Tuberculosis Control, and California Children Services Program. In addition, we have two work place improvement teams: Family Health Services and Public Health Nursing.