

OSH Management Systems: The Plan-Do-Check-Act Cycle

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Do your occupational safety and health (OSH) management systems include multiple programs, such as planning, training, inspecting and reviewing? Are those programs built on the Plan-Do-Check-Act (PDCA) cycle for continuous quality improvement?

According to the Occupational Safety and Health Administration (OSHA), the major elements of an effective occupational safety and health (OSH) management system are:

- Management commitment and employee involvement
- Safety and health training
- Worksite analysis
- Hazard prevention and control. [Ref. 1]

These major elements are similar to (and, most likely, based on) the PDCA cycle for “continuous improvement” or “quality” model. PDCA is “an iterative four-step management method used in business for the control and continuous improvement of processes and products” [Ref. 2]. The steps are:

1. **Plan:** Determine what needs to be done, when, how and by whom
2. **Do:** Carry out the plan, on a small scale first
3. **Check:** Analyze the results of carrying out the plan
4. **Act:** Take appropriate steps to close the gap between planned and actual results” [Ref. 3].

Many diverse industries, agencies and associations worldwide strongly encourage the development of management systems that employ the PDCA cycle for “continuous improvement.” Recently, the American Industrial Hygiene Association published a voluntary consensus standard, ANSI/AIHA Z10—2005 Occupational Safety and Health Management Systems, based on the PDCA cycle. “The Z10 standard places an emphasis on continual improvement and systematically eliminating the underlying root cause of hazards” [Ref. 4].

Healthcare industries worldwide use these “continuous improvement processes” to improve patient care and develop their organizations. For example, the Institute for Healthcare Improvement uses PDCA in its “Methods and Tools for Breakthrough Improvement” course. In their words, the process “has been used by hundreds of health care organizations” [Ref. 5].

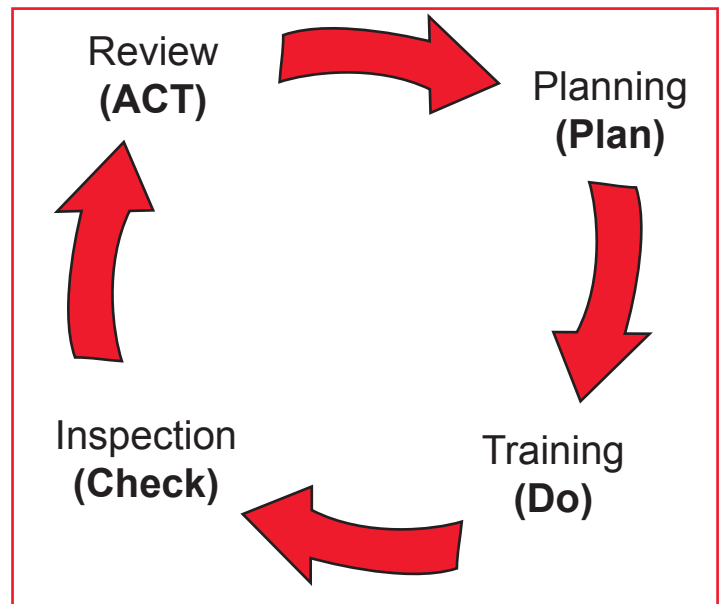


Figure 1 — Example of four OHS programs matched to the PDCA cycle of continuous improvement.

According to Dr. Tony Shannon, consultant in emergency medicine and chief clinical information officer at Leeds Teaching Hospitals, University College, London, “Within some healthcare systems the PDSA [i.e., Plan, Do, Study, Act] or PDCA [i.e., Plan, Do, Check, Act] is the cornerstone of [clinical] audit,” and is “an integral part of medical practice ... to get much slicker at information management in healthcare” [Ref. 6].

The best OSH management systems, then, translate these “major elements” and “continuous improvement processes” into programs, typically planning, training, inspecting and reviewing programs, respectively. These programs help companies identify and prioritize OSH requirements applicable to specific worksites and associated operations (i.e., “plan”), implement plans and train company workers with OSH requirements (i.e., “do”), identify OSH hazards and investigate incidents (i.e., “check”), and eliminate OSH hazards and manage corrective actions (i.e., “act”).


Whether it’s PDCA as in the Continuous Quality Improvement model, or Planning-Training-Inspecting-Reviewing, as encouraged by OSHA’s and other agencies’ major elements, both approaches are sets of processes and practices that can be used to increase an organization’s operating efficiencies and program effectiveness, and, in turn, help protect workers.

Summary

In the previous issue of *JSS*, I stated that the best OSH management systems are standards-based, i.e., they are grounded solely in the U. S. Code of Federal Regulations and other official statutory requirements.

In the next issue of *Journal of System Safety*, I will share my thoughts on how the best systems are technologically advanced, i.e., they are powered with relational database management technology (RDMT) or equivalent technology, integrating compliance management data within and between each program and thereby eliminating redundant data and work efforts.

About the Author

David A. Wise holds an MS degree in OSH/EM from Columbia Southern University and an undergraduate degree in health care management from the Community College of the Air Force. He is the author and developer of The Relational ESH™ Management System, a relational database management system used by general industries to manage environmental, health and safety compliance requirements. For more information about David and the information systems he shares with general industries, visit his LinkedIn profile at www.linkedin.com. 

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