Can Juran's Trilogy Contribute to Better Quality in Public Health Nursing?

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Why Use Juran's Trilogy?

What is Quality?

Joseph Juran unified the concepts of quality management and brought them together as a system (Bisgaard 2007) known as the Juran Trilogy. Juran defined quality as 'fitness for use' a definition based on meeting customer needs. He also provided two subsidiary definitions of quality as 'features' and 'freedom from deficiencies.' The design of a process, product, or service applies to features, while freedom from deficiencies applies to the delivery (Juran and Godfrey 2005). For example, a feature of a heath care program would require every patient entering the program get an asthma assessment using a set of specific evidence based procedures and practices. Any failure following these prescribed procedures would be a deficiency to the program.

The Juran Trilogy is an interrelated system consisting of Quality Planning, Quality Improvement and Quality Control allowing for a systemic and systematic approach to quality management. Other benefits include a project-based process, discovery and correction of chronic quality problems, establishment of feedback and control systems, and creation of well documented and transferable processes that can be standardized, taught, reviewed and updated as needed.

What is Juran's Trilogy?

The Trilogy of Quality Planning, Quality Improvement, and Quality Control is a management system that addresses quality systematically on a systemic level.

Quality Planning (QP) Establish quality goals, identify customers, determine customer needs, develop features to respond to customer needs, develop processes to produce features, establish process control systems and provide for the transfer of the plans to process operations (Juran, Figure 2.2, 2005).

Quality Improvement (QI) Prove the need, establish an infrastructure, identify improvement projects, establish and train project teams, provide resources, stimulate remedies, and establish controls to hold on to gains (Juran, Figure 2.2, 2005).

Quality Control (QC) Evaluate performance, compare outcomes with goals, act on the difference (Juran, Figure 2.2, 2005).

Where has it been used before in health care?

• In Curing Healthcare, Berwick et al (2001) reports on National Demonstration Project (NDP) cases that successfully applied QI methodologies in health care. The NDP has evolved into the Institute for Healthcare Improvement.

• A hospital in Northampton, Massachusetts used Define for Six Sigma (QP) to create an employee vaccination process that continues to save money and offer a better quality, more comprehensive service (Kaplan, Zetterholm, Bisgaard, and Truesdell, unpublished).

• Red Cross Hospital (Netherlands) implemented Six Sigma (QI) into the ISO 9001:2000 system saving 1.2 million Euros annually, significantly improving quality (van den Heuvel, Does, & Verver, 2005).

• In October 2003, the CDC held a symposium on QI vaccination promotion programs. The following were identified as effective implementation features: diverse staff involvement, site-specific collection and performance review measurements identifying defects, periodic re-evaluation revising interventions and maintaining improvements, and providing CE credits to staff learning quality improvement methods (Shefer et al., 2006).

• Mauer et al (2004) report on the results of Washington state's performance standards and the recent performance evaluation against those standards (QC).

An Integrated Model
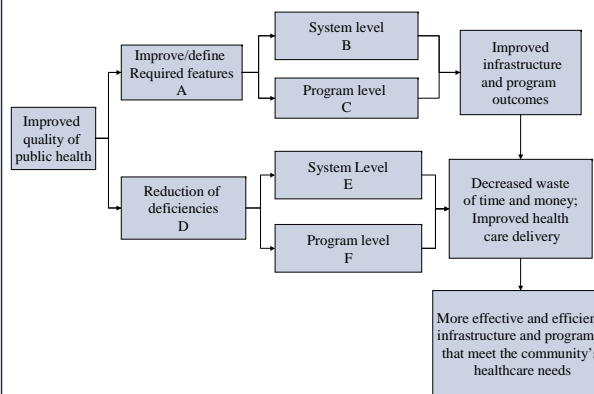
Model Key

A. **Improved Features-** Features are factors that respond to the needs and wants of the customers. The customer are a cast of characters, including community members, public health practitioners, and government agencies. Quality planning tools such as Design for Six Sigma are used to systematically analyze, develop and define program features.

B. **System level-** Increase community involvement, create transferable program models and standard operating procedures, best practices, broader, more detailed community needs assessments, public policy.

C. **Program level-** An example of this is an increase in the allowable income for a family to qualify for a specific program, or use evidence based interventions.

D. **Reduction of Deficiencies-** A deficiency is the difference between planned and expected outcome and actual performance. Quality improvement tools (same as those used in Six Sigma and Lean) fit in this part of the model to facility the systematic investigation of root causes for chronic resource waste and their permanent removal.

E. **System level-** Paper work errors, rework, inaccuracies in data gathering, programs that do not address community needs, poor communication between offices and levels of infrastructure, public policy that does not result in population outcome changes.

F. **Program level-** Examples of deficiencies at the program level might include unmet goals and objectives, standard operating procedures (SOP) not followed, redundant data gathering, implementation issues, cultural sensitivity issues (ex. a course on kosher food held on a Friday evening or Saturday morning, or a support group for LBGT Catholics that meets on a Sunday morning.)

An Example

Design and implement a program teaching asthma assessment to non-licensed recreational camp staff

Quality Planning

• Establish quality goals: Perform a needs assessment specific to pediatric asthma rates, mortality and morbidity.

• Identify customers: Non-licensed camp staff, camp nurses, asthmatic children and their families, family pediatricians, local public health inspectors, state health inspectors.

• Determine customer needs: Examine all applicable laws and regulations relevant to delegation of medication and health care at recreational camps. Examine evidence based guidelines, best practices and recently published literature for asthma treatment. Assess education levels of recreation camp counselors and staff. Involve pediatrician and camp nurse in planning asthma education and monitoring systems. Prioritize needs.

• Develop features that respond to customer needs: Program features needed to meet the needs of all customers.

• Develop processes that will deliver the required features: Develop teaching material. Who will teach the program? How will successful completion of the course be determined and tracked?

• Establish process controls: How will we know the program is effective in decreasing severity of asthma incidents at recreational camps?

• Transfer plans to process users: Implement the program.

Quality Control

• Develop control system: Control is an ongoing process and is the most important part of any quality initiative. It is not enough to measure the process, we have to take action with the information we gather.

• Evaluate performance: Are camp counselors completing the course successfully? Are control systems and data gathering systems being implemented in individual camps? Are control charts being implemented?

• Compare outcomes with goals: Are campers keeping better control of their asthma at camp? Are staff able to assess campers and properly meet campers' asthma needs? Is the number of asthma incidents increasing, stable or declining?

• Act on the difference: Are there changes that will address sporadic issues in the process? If issues appear chronic if requirements have changed, move on to Quality Improvement.

Quality Improvement

• Define improvement projects: What parts of the process are not working? Identify customer needs/wants, re-examine regulations, state and federal laws, and data from control systems.

• Diagnose the problem: What is the root cause of the problem?

• Develop a remedy: What changes need to be made to the process to meet customer needs?

• Check that the remedy was effective: Is the process meeting customer needs? Are the problems remedied?

• Establish controls to hold gains: Create a new control system. How will we know the process is effective? How will we know when to reassess the program?

• Transfer plans to process users: Re-implement the program with the new control system in place.

Literature Cited

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