"Continuous Quality Improvement as a Research Methodology"

Sheila P. Harms, RN, BS, CCRN, CPTC, Donation Coordinator, New England Organ Bank, Worcester, MA, NATCO Research Committee Member

It seems that everywhere I turn these days, I am hearing the term "quality improvement". Many institutions have established QI or Continuous Quality Improvement (CQI) teams that are looking at ways to constantly improve the quality of service that is provided. I will address the four key elements of a successful quality improvement evaluation and how the CQI methodology applies to the conducting of an effective research project.

Elements of a CQI Program (Caramanica, Cousino, & Petersen, 2003)
Alignment. Alignment involves identifying and aligning the researcher's goals with those of the institution/organization for whom the research is being conducted. For example, if the researcher's goal is to show that a 75 percent organ donor conversion rate can be achieved through the hiring and training of additional staff and the organ procurement organization's strategic plan includes the elimination of staff, then the research is going to be at cross-purposes with the organizational goal. A more successful research goal might be to document how a 75 percent conversion rate may be attained through enhanced training of existing staff.

Collaboration. Collaboration involves working together for the benefit of the organization. A key factor in collaboration involves the use of interdisciplinary teams to achieve success. Members of an interdisciplinary team each bring complimentary skills which, when combined for a common purpose, enhance each other and achieve more desirable results. Researchers can enhance this element by using input from a variety of individuals with varied skill backgrounds so that collaboration can achieve a desired result.

Evidence-Based Practice. This process involves utilizing the "science behind the art". Simply stated, practitioners should always ask if something should be done, and, if so, what scientific evidence supports it. Often we do things simply because "we have always done them this way". It is the researcher's job to identify the "why" behind that statement (Grol, Baker, & Moss, 2004).

Excellence. A mindset in which only the highest quality of work is tolerated is critical to CQI. A researcher who is satisfied with data that is 80% accurate is not working to his highest potential, and the quality of his work can be improved.

CQI as a Research Methodology
So how does a researcher use CQI? That question is answered by examining the definition of research. As stated by the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, research is the "systematic collection of information to increase or develop generalizable knowledge" (Department of Health and Human Services, 1991). Every organization conducts on-going quality improvement evaluations to determine success of given programs, to determine cost effectiveness of providing a service, or to change practice patterns within the organization. The determination as to whether a project is research falls under the rubrics of the federal regulations and is determined by the ultimate goal of the use of the outcomes. The simplest and most rigorous methodology is determining your purpose prior to collecting the data. However, many times, you find serendipitous findings from an in-house CQI evaluation, and you want to share this information with your colleagues as research. What can you do then? Let's explore this possibility.

Once you determine that your question and outcomes from your quality improvement assessment will contribute to generalizable knowledge, then you step into the arena where human subjects oversight and institutional review are required. Don't get caught in the trap that you find something in the CQI of your

organization and assume because you got great results that it is research. It may be, but you may need to go back and evaluate the elements of the research process and determine if your data is replicable.

Research Steps

Based on the four elements mentioned above, how do you begin? The key elements of a research study are the research question, the review of the literature, sampling strategy, data collection and analysis (Polit & Beck, 2004).

Step 1. Is there any published literature on the topic? How did they answer the question and what methodology was used? How will the research you propose fill the gaps in the knowledge?
Step 2. Who was included or excluded in the sample and did the inclusion/exclusion introduce bias? What measures were undertaken to ensure that the sample used in the CQI is representative of any sample, so that if you sampled again, the results would be similar?
Step 3. What data were collected? Is the type of data collected quantifiable and reliable, and does it address the research question posed? The data collection was systematic and collected in such a manner that bias was not introduced by the method of data collection.
Step 4. Is the analysis plan appropriate for the type of data collected and for the research question posed?
Step 5. How do you address institutional review? Based on your question and the type of data collected, your project may easily fit under the exempt or expedited rules of the institutional review board. Call the IRB, and talk to someone there to inquire about the review. Proceed with the appropriate review process to receive approval from the board.

Summary

In utilizing CQI methodology for research purposes, one must first consider the four elements of a continuous quality project as well as the steps of the research process. Again, with any research endeavor, the first step is the question. Align your question with the overall goal of your institution and you begin a project worth sharing with your colleagues. Build your research team and systematically collect the data. While every institution undergoes some type of program evaluation or quality improvement to improve the services of the institution, not every CQI project is considered research, in other words, generalizable knowledge. With thoughtful process and development however, your project can increase the general knowledge and thus meet the criteria for research.

References:

Caramanica, L., Cousino, J. S., & Petersen, S. (2003). Four elements of a successful quality program. *Nursing Administration Quarterly, 24*(4), 336-343.

Department of Health and Human Services. (1991). Common rule, 56 federal register (45 cfr part 46 subpart a) (Vol. 56, pp. 28002-28032).

Grol, R., Baker, R., & Moss, F. (2004). Quality improvement research: Understanding the science of change in healthcare. *Health and Social Care in teh Community, 12*(6), 538-539.

Polit, D. F., & Beck, C. T. (Eds.). (2004). *Nursing research: Principles and methods* (Seventh ed.). Philadelphia: Lippincott Williams & Wilkins.