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QI Corner

Quality Improvement: The Basics

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Improving quality suggests a systematic method of studying our work processes to improve their outcomes. These work processes can be clinical (e.g., assessment, treatment procedures), administrative (e.g., staffing, continuity of care, referral procedures), financial (e.g., billing, costs, resource use), and technical (e.g., equipment maintenance and use). Our purposes here are to describe the notions of quality and its improvement, and propose a model for improvement.

Understanding Quality and Its Improvement

No organization can be perfect, especially when engaged in the human services. Therefore, we can never *assure* quality, just as we can never guarantee the results of treatment. There are too many variables outside our control. But a combination of statistical thinking, consumer orientation, and teamwork allows us to *improve* the quality of our services or products.

Quality improvement is the effort to improve the level of performance of a key process.

It involves measuring the current level of performance, finding ways to improve that performance, and instituting new and better methods (Berwick, Godfrey, & Roessner, 1990). Berwick and colleagues suggest that improving quality involves several principles:

1. Productive work is accomplished through work processes. For example, we as clinicians receive various kinds of inputs (e.g., school reports, lab reports, family accounts, equipment) that we use in performing our tasks (e.g., assessment, treatment, counseling) to effect targeted outputs (e.g., correct diagnoses, functional communication, community reintegration). We must first understand these processes. Then, we must study them to determine where they break down. We must also realize that by understanding the needs of our consumers and defining them carefully we can improve the quality of our own work.

It is not enough, however, to improve only our individual work processes. Our work, in fact, depends on others. Thus, the work is interdependent. It makes sense that to improve a work process, we must involve others in the effort. This gives rise to teamwork. Everybody in the organization is in this together.

2. Quality improvement focuses on the most vital processes. Those who try to improve everything often find themselves buried in many measurements and end

up taking action on none. Thus, it is important to select those processes that are the most critical from a consumer point of view. A good rule is offered by the Joint Commission on Accreditation of Healthcare Organizations. Select processes that are high risk (can result in morbidity or mortality), high volume (affect the largest numbers of consumers), or problem prone (processes that are fraught with flaws and generate the most consumer complaints).

3. Variability of work processes is key to improving quality. In every process and in every measurement, variability exists. For example, when clinical investigators conduct experimental research to determine treatment efficacy, they design the study to control the unwanted variability contributed by differences among subjects or among treatment procedures. Our aim, using quality improvement methods, is both to understand and reduce the causes of variation, which, in turn, increases the predictability of the outcome. Causes of variation, for example, can be found in use of outcome measures with no documented reliability and validity, malfunctioning equipment, scientifically unproven treatment methods, poorly trained or insufficient staffing, and other variables. Controlling sources of variation can have dramatic effects on improving quality.

4. The approach to quality is statistical thinking. Quality improvement began with engineers and statisticians asking the scientific question, "Why does quality fail?" Thus, they found that the scientific method held the key to improvement of processes.

Clinicians are familiar with this investigative process. Clients come to us with problems. We engage in diagnostic efforts to find causes, determine the need for treatment, and directions for treatment. We apply treatment procedures. We assess the results of treatment to guide our next steps. This is a scientific method.

Precisely the same method is applied when improving quality. We begin with a failure to meet the needs of consumers. Perhaps procedures are wrong, equipment is broken, or clinicians are improperly trained. The quality improvement team ("therapists of process") performs diagnostic tests, formulates hypotheses of cause, tests those hypotheses, designs and applies remedies, and assesses the effect of the remedies. Team members plan. They do. They study. If the remedy works, they act (institute the change).

Quality improvement makes a bold suggestion: It is possible for everybody in an organization to use the scientific method for improving processes as part of their normal routine. Some have called this the "democratization of science." Scientific tools are placed in the hands of employees largely through training.

The scientific approach to quality improvement is, by its nature, based on data. It must include measurement of

- consumer needs
- inputs
- process characteristics
- results

Measurement is not used to reward or discipline people. It is used to gain knowledge of processes, so that they can be understood, predicted, and improved.

A Model for Improvement

Many models for improvement are found in the literature, and sometimes serve to confuse rather than clarify. We propose a model for improvement, conceptualized by Associates in Process Improvement (API) (Langley, Nolan, & Nolan, 1992), which provides both a practical and scientifically based way to improve quality. The model is based on the teachings of W. Edwards Deming (1980), and incorporates the Plan-Do-Study-Act cycle devised by Walter Shewhart, a statistician who worked for Bell Telephone Laboratories in the 1920s.

The model assists individuals in focusing and acting to improve quality by asking three questions:

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What changes can we make that will result in improvement?

The four steps of the model are described as:

Plan: Study a work process to decide what change might improve it. Organize a team. What data are necessary? Do the data already exist or is it necessary to collect and organize data to understand the current situation? Once current knowledge is acquired, determine what changes can be made or tested. Are tests necessary? Do not proceed without a well defined plan.

Do: Carry out the test, or make the change, preferably on a small scale.

Study: Observe the effects, using the same measures used to document the current situation. Did the change result in an improvement?

Act: What did you learn? If the change resulted in improvement, standardize the change on a full- scale. If the change did not result in im-

provement, decide what other changes can be tested. Thus, the cycle starts again.

Conclusion

Quality improvement has been denigrated by some as a fad. Particularly in this age of reengineering and downsizing, methods to improve quality have been found laborious and time consuming, resulting in "too little too late." Deming (1980) commented that, "Long-term commitment to new learning and new philosophy is required of any management that seeks transformation. The timid and the fainthearted, and people who expect quick results, are doomed to disappointment."

Quality improvement embodies a management philosophy as well as scientifically-based methods. It is embraced by individuals who prefer to manage from a base of factual knowledge, rather than guesswork. Improving quality requires a scientific and systematic way of thinking, discipline, and unwavering commitment from the top. Thus, it is not for all organizations. But in this age of accountability, with advanced technologies in place, it would seem irresponsible to choose a lesser alternative.

References

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