The RITE Program: Use of a Team-Based, Project-Based Multidisciplinary Quality Improvement Course to Facilitate Improvement in an Academic Medical Center

David B. Larson, MD, MBA, L. Jake Mickelsen, BS, Kandice Garcia RN, MS

BACKGROUND

In summer of 2014, radiology was tasked with 55 major improvement projects. At the time, the department had no structured mechanism to accomplish them. Projects included a variety of categories:

1. Ongoing improvement initiatives that had not reached their objectives
2. Projects motivated by patient safety events
3. Projects to increase efficiency
4. Patient and referring clinician dissatisfaction

Front line staff had limited training and no formal structure to effectively solve these problems.

HYPOTHESIS

Multiple intra- and inter-departmental improvement initiatives could be successfully completed by training and empowering front line teams to work together to solve meaningful problems within an organized improvement framework.

PURPOSE

The purpose of this project was to develop and implement an educational program that could simultaneously:

1. Facilitate the successful execution of quality improvement (QI) projects
2. Provide an effective practical education in QI methods using a team- and project-based model.

The program had three primary objectives:

1. Provide practical education in quality improvement
2. Empower front line teams to make change
3. Produce sustainable results and processes

MATERIALS AND METHODS

A 10-session, 20-week course was developed and implemented in the radiology department, with strong support from both the hospital and medical school leadership. The program was initially given the name Radiology Improvement Team Education (RITE), but the name was changed to Realizing Improvement through Team Empowerment (RITE) to better reflect its mission and its inclusion of teams outside Radiology. Candidate projects were nominated based on identified needs from department leaders and staff. Projects were submitted and preliminarily evaluated prior to a project prioritization meeting.

A project prioritization matrix (Fig. 1) was developed to projects' likelihood feasibility and impact on the organization, with an emphasis on patient safety.

RESULTS

A total of 41 individuals participated in cohort 1:

- 9 administrative leaders
- 9 residents/fellows
- 7 technologists
- 6 faculty physicians
- 5 administrative staff
- 5 nurses

The course was led by a radiologist (associate department chair) and two QI coaches. Projects included:

1. Improving mammography positioning
2. Decreasing MRI missed appointments
3. Improving communication with clinicians
4. ED stroke code response time
5. Improving MRI capacity and efficiency
6. Improving adequacy of clinical histories
7. Reducing wait time for inpatient transfers
8. Improving efficiency of MRI protocols

The average project progress score increased from 1.4 (out of a possible 5) to 4.0/5, with 5 projects achieving substantial improvement and 3 projects achieving sustained substantial improvement by the completion of the course (Fig. 4). Run charts of 3 selected projects are shown in Figure 5.

CONCLUSIONS

The multidisciplinary RITE course was effective in simultaneously facilitating the successful completion of multiple departmental improvement projects and improving participants’ self-assessed skills in QI methodology. Total time spent in class was 20 hours, with half of that time occurring during the lunch hour. Participants reported a high level of satisfaction, though trainee satisfaction was lower than that of other participants. The authors identified 10 key elements that were believed to contribute to the success of the program:

10 keys to a successful QI education program

1. People who do the work teamed up to solve meaningful problems
2. QI coaches to assist the teams with QI methods and tools
3. Physician director with QI expertise and organizational authority
4. Program director who can orchestrate program and projects
5. Supportive department leaders who mentor, protect time, remove barriers
6. Weekly “walk the wall” sessions to ensure project progress
7. Applicable, timely, and focused QI education material
8. Structured problem solving methods (A3, run chart, Pareto diagram, process map, etc.)
9. Environment where projects are done simultaneously to promote team to team learning and peer recognition
10. Frontline teams given authority to test and develop significant departmental changes

Figure 1. Project Prioritization Matrix. See Larson DB, Mickelsen L. AJR 2015;205:W470-W477.

Figure 2. Screen captures of didactic videos (www.youtube.com/user/StanfordRadQuality).

Figure 3. A3 template used in the RITE program.

Figure 4. Project Progress Scale and results by team.

Figure 5. Run charts of 4 selected projects.

Figure 6. Results of self-assessment of achievement of learning objectives.

Figure 7. Results of self-assessment of achievement of learning objectives.