

# Evidence You Can Use

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**Purpose:** This EBP project was needed to improve the compliance, competence, and confidence of bedside nurses in the use of CPR using the Resuscitation Quality Improvement (RQI) program.

**Target audience:** All nursing staff (RN, LPN, and NA), and house medical staff

CPR skills are a core skill for all healthcare providers, compliance with the training can be difficult in a small community hospital with limited staff. The time for traditional classes can take much-needed staff of the units for 4-12 hours at a time, depending on the certifications needed. The traditional classes need to be renewed every two years to remain compliant (Jones-Schenk, 2022). Resuscitation Quality Improvement (RQI) has been studied and has been shown to improve and retain the skills needed for effective CPR (Mota, 2023). The clinical education department is responsible for tracking and teaching all of the CPR, ACLS, and PALS classes for this community hospital. During COVID the classes were not available in person and many fell out of compliance with the 2 year recertification, and it was becoming increasingly more difficult to get staff to come to classes outside of the normal work hours.

RQI was discussed as a potential solution to the inability of staff to have time for traditional classes, due to decreased staffing. After the initial meeting with RQI, a subsidiary of Laerdal Medical, the team was able to complete a return on investment report for the hospital and funding for the startup of RQI. The cost was presented to the hospital administration and funding was going to be difficult for this small community hospital. The coordinator of the American Heart Training Center

at the hospital arranged a meeting with a philanthropic group called the Hospital Foundation. The foundation raises money for education and other needs of the hospital and their board decides where to spend the money. The foundation reviewed the need and the program and then offered to fund the first two years of the hospital access to the RQI program. Funding the RQI program was in part funded by the yearly employee campaign.

RQI is a mobile unit that is delivered to the hospital completely assembled, with an adult and infant mannequin attached to a computer with feedback and tracking through the attached computer system. The clinical education department is responsible for the continued general maintenance of the cart, but all the electronics and mannequins are maintained by RQI. This hospital has one unit set up outside the clinical education department door, there is a second unit at the sister site of the hospital near clinical education as well.

The learner needs to complete an online case study-based session and then complete the hands-on portion at the station. As the learner completes the hands-on portion of the learning a visual display of the learner's compressions and breaths is easily seen in color on the computer screen as part of the feedback of skills. These sessions are quarterly and the completion cards are updated with the completion of each session to be 2 years from that date. Cards can be printed by the learner for personal use, but the system tracks all user activity which can be downloaded in spreadsheet format by the clinical education department and regularly sent to human resources to update employee certification profiles. Regular and brief practice in CPR skills has been demonstrated to lead to better overall skills. The American Heart Association's RQI Program is a groundbreaking new approach to maintaining competence in CPR

skills (RQI, 2024).

After a review of the ROI from RQI and the funding approval from the foundation, RQI was launched in April of 2021 with an initial group of super users which included unit managers, clinical education staff, and a select group of unit staff. After a month of trialing the program with the super user group all nursing, respiratory, and medical staff were initiated into the system for basic life support (BLS), and then ACLS and PALS were added. All orientation groups were put into the learning system following the launch and continue to be added as needed. This is a subscription program and the price is based on the number of enrolled users. If employees leave the organization they are removed from the system and the spot can be utilized for the next new employee.

Many of the experienced staff commented on their skills in the beginning not realizing how poorly they performed the skills. The feedback for each breath and compression was a little alarming at first. However, they also commented on how much they have improved in just a few sessions, and when they come to test out now are pleased with the higher scores they are getting. The online portion is a set of evolving case studies moving through the basic, and advanced skills required for each certification. It allows for review of the incorrect answers providing rationale for each, as well as praise for the correct answers. The cognitive assessments for ALCS and PALS are considered adaptive learning, meaning, that the system will tailor education to the individual user to concentrate on their strengths and support the learner's weaknesses.

A review of the data at the first anniversary of the implementation of the RQI system showed improved compliance in this community hospital from 45% to 95%, improved competence using feedback devices for adult compressions by 38%, infant

compressions by 124%, adult ventilations by 36% and infant ventilations by 68%. The RQI data report is very helpful in the review of the program and the team at RQI helps present the statistical data to support the ROI and the continuance of the program.

Confidence was not reported within the system so a short survey was developed for the users to take during the 4th quarter of the year to determine if this was something that the staff wanted to continue and if there was an improvement in individual confidence. Confidence was reported as increased by 90% of the nursing staff. The majority of the staff appreciated the reinforcement of skills using the program and noticed improvement in their skills, and some of the nursing staff get competitive to try to achieve 100% on all of the skills. One challenge of the program that was identified early was keeping employees compliant. Reminders are automated by the system and sent to the emails registered with the system. The clinical education office sends a quarterly report to human resources and emails all noncompliant users to provide an additional reminder to staff. Furthermore, it was noted that completion over the quarter starts strong, weakens out, and then increases towards the end. Another challenge is breaking old habits and the "this is how it has always been" mindset. With the system being completely automated a fundamental shift in learning had to take place. Staff moved from a passive method of learning, sitting in a classroom and gaining information, to being the central part of the education process. Employees must be active in the system to gain benefit from the method of teaching, and while most adopted the system quickly some employees who did not understand the technology or were bound by an antiquated education mindset struggled early on in the program.

The most significant impact of the RQI program is the completion time of each learning module. BLS through RQI can be completed in as little as 15 minutes including the hands-on skills station. ACLS and PALS can be completed in upwards of 20-

30 minutes depending on the learner's ability to read, comprehend, and answer the associated questions. Because the mega codes for ACLS and PALS are all included in the online format, there is no need to see or meet with an in-person instructor. The skills testing station is available 24/7 for use which accommodates all shifts without a limitation to access, and the cognitive testing platform is web-based and available on all hospital computer workstations.

The hospital is continuing with the current system and exploring the idea of adding additional education to the cart. It has also led to a bigger discussion of quality improvement of the code response system, debriefing framework, and the root cause analysis of code events, to look for areas of opportunity for improvement. The hospital Training center continues to offer full classes for the community and providers outside the hospital, as well as a complete course for new graduate nurses in ACLS and PALS during the orientation and residency program. Once the new graduate nurses complete the face-to-face class they are entered into the RQI system for the maintenance of their certifications.

The ROI for the first year of the RQI program implementation was \$74, 501.26. This was the total cost of traditional classes for ACLS, PALS, and BLS for instructors and all providers at both sites during one year for renewal and complete classes minus the annual cost of the RQI subscriptions for all programs. This is a significant cost savings to the community hospital and continuation of the program is supported by the hospital board and administration. ■

## References:

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