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Rural Health  
Research Center

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## **Implementing Patient Safety Initiatives in Rural Hospitals: An Evaluation of the Tennessee Rural Hospital Patient Safety Demonstration**

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Executive Summary

August 2007



*The Upper Midwest Rural Health Research Center  
is a partnership of the University of Minnesota  
Rural Health Research Center and the  
University of North Dakota Center for Rural Health*

## EXECUTIVE SUMMARY

Processes to improve patient safety are under scrutiny at all levels of health care. Many initiatives have been identified as central in the patient safety process. The goal of the Tennessee Rural Hospital Patient Safety Demonstration project was to improve patient safety in eight rural hospitals by strengthening their capacity to implement priority patient safety initiatives. The project included: 1) the implementation of three patient safety initiatives in eight rural Tennessee hospitals using a collaborative model, and 2) an evaluation of the process and tools used in the implementation to inform future rural patient safety initiatives.

Hospitals participating in the demonstration project completed two or three rounds of the Agency for Healthcare Research and Quality (AHRQ) patient safety culture survey tool over the project period. The survey is intended to help each hospital assess the extent to which it emphasizes the importance of patient safety, facilitates open discussion of errors, encourages error reporting, and creates an atmosphere of continuous learning and improvement.

After each round of surveys, the results were shared at both the individual hospital and the aggregate project level and compared to the AHRQ benchmarks. Presentation of the results was made at the group level and then each hospital shared its individual results with its board, staff and community. The hospitals developed action plans based on the areas that needed improvement that were identified in the survey. At monthly conference calls and quarterly face-to-face meetings, project participants shared their experiences as they worked on various improvement activities. Staff from the Tennessee Hospital Association (THA), Q-Source (the state quality improvement organization), BlueCross BlueShield of Tennessee and the University of Southern Maine all provided technical assistance, resources and structure to this process.

Significant improvement from baseline occurred in 10 out of 12 of the dimensions of patient safety culture in the AHRQ survey. All of the hospitals' scores were higher than those reported in the AHRQ 2004 benchmark data. In particular, the group focused on improvement activities, such as error/event reporting, non-punitive response to errors and open communication. The hospitals embarked on new quality and patient safety improvement techniques, such as leadership walk-arounds, medication management tools, hand-off reviews, patient safety staff training and orientation sessions, and strategies to increase event reporting and feedback.

In the PDA intervention activity, participating hospitals identified appropriate clinical staff to receive a PDA device and requisite training. Project funds covered the cost of the 130 PDAs, software, training and technical assistance. These devices were pre-loaded with a drug database software program (Epocrates) that enabled the users to quickly check drug information, such as dosing, drug-drug interactions and adverse reactions, as well as formulary and pricing information. In addition, the software provided many clinical tools, including diagnostics such as lab reference values, clinical tables and guidelines, symptom assessment, disease and condition compendium, and medical calculators.

A team of staff from the Tennessee Hospital Association and local and non-local state universities trained the PDA users. Ongoing technical assistance was provided, including site visits, technical assistance conference calls and 'listserv' communications. In the participating rural hospitals, the enthusiasm for this intervention was quite high and project staff were very encouraged by the willingness of clinicians to embrace this new technology. For many physicians in the project, this was their first experience with clinical support software and, for some, a gateway use of technology in the clinical setting.

In a post intervention survey 5-6 months after PDA delivery and training, more than 75% of the PDA users reported improved drug decision making for one or more decisions per week, improved efficiency with time saved, and a reduced frequency of drug related adverse events. Following the success of the initial training, project funds were used to train a second round of PDA users, primarily nursing staff. The hospitals reported significant interest in point-of-care technology via handhelds at nursing stations, hospital pharmacies, emergency departments, off-site clinics and the bedside.

Participating hospitals also completed an inventory of current ER protocols in their own facilities and Q-Source compiled the inventory on a CD for all participants to share. The QIO provided technical assistance for this intervention through sharing of best practices and coaching of intervention plans and activities. All eight facilities worked in their own teams to decide which protocols to adopt, adapt, approve and/or implement. A number of the hospitals indicated some resistance to change from nurses and physicians, but found buy-in through the review process and ER staff champions. Participants reported substantial benefit in standardizing treatment regardless of shift in order to reduce staff variances and improve patient flow, hand-offs and transfers. It was noted that protocols are even more necessary at small facilities as the frequency of certain clinical events is less likely.

The results of the project demonstrate that:

- Rural hospitals are interested in and willing to invest in patient safety initiatives.
- The opportunity to meet external requirements (e.g. Joint Commission reporting) increases the interest of rural hospital participation in patient safety initiatives.
- A collaborative model between rural hospitals, a payer, a hospital association, a QIO, and academic institutions can efficiently and effectively support patient safety activities in rural hospitals.
- The AHRQ patient safety culture survey can be used to identify and target opportunities that lead to actionable items that improve the patient safety culture of rural hospitals. The administration of the survey to clinical and non-clinical staff helps hospitals move toward the goal of having all staff responsible for patient safety.

- Clinician use of PDAs leads to reported improvements in their patient care effectiveness and efficiency, particularly related to medication safety. More than 75% of PDA users reported an increased drug knowledge base, improved drug-related decision making, and Epoproterenol assistance with clinical decisions at least once a week.
- Effective ER protocol development and use requires a long-term investment of time and resources. This intervention is still in progress at the participating hospitals.
- The trio of patient safety interventions provides a balanced three-pronged approach in rural hospitals. The patient safety culture survey helped to stimulate the environment for patient safety; the PDA use led to observable short-term benefits, particularly with respect to prescribing practice; and the ER protocols require a longer term to observe improvement in patient safety.

The success of the Tennessee Rural Hospital Patient Safety Demonstration Project has implications for the implementation of patient safety interventions in rural hospitals. Within the eight participating rural hospitals, the project has provided the confidence necessary to consider additional patient safety projects in the areas of hand washing, fall prevention, and the labeling of medications.

Statewide expansion of the project to include all rural hospitals in Tennessee will need to address the issues of how to sustain intervention capacity (i.e. technical assistance, implementation of new technology and group processes) and how to develop a rural hospital patient safety database that will allow rural hospitals to compare their experiences with peer institutions in Tennessee. At the heart of the sustainability issue is how to keep the key stakeholders (i.e. rural hospitals, BlueCross BlueShield, the state hospital association, the QIO, and academic institutions) active and participating in the collaborative model that was the driving force behind the demonstration project. A starting point will be to quantify the benefits of participation for all of the stakeholders identified above. The development of a statewide patient safety database can be useful for benchmarking purposes for individual rural hospitals as well as serving as a support for policy and payment initiatives by health care purchasers. The recent creation of a patient safety center at the Tennessee Hospital Association can help support the development of the database discussed above.

Finally, the active participation of BlueCross BlueShield of Tennessee in this demonstration program highlights how a health plan can build supportive relationships with rural hospitals and clinicians. It also provides a model for how health plans in other states can help improve rural hospital patient safety by leveraging health plan linkages with their provider networks, state hospital associations, and Quality Improvement Organizations.