

Project Title: Creating Online Newborn Intensive Care Unit (NICU) Networks to Educate, Consult & Team

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Organization: University of Southern Mississippi

Mechanism: RFA: HS05-013: Limited Competition for AHRQ Transforming Healthcare Quality through Information Technology (THQIT)

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Project Period: 09/05 – 09/09, Including No-Cost Extension

AHRQ Funding Amount: \$1,499,995

Summary Status as of: December 2008

Strategic Goal: Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions in care settings, and the use of electronic exchange of health information to improve quality of care.

Business Goal: Knowledge Creation

Summary: The Creating Online Newborn Intensive Care Unit (NICU) Networks to Educate, Consult & Team project brings together the University of Southern Mississippi; Forrest General Hospital, a county acute care hospital; Southern Mississippi Neonatology Group, a private neonatology practice; Hattiesburg Clinic, the largest multi-specialty clinic in the State; and Southeast Mississippi Rural Health Initiative and its nine rural family health centers, which serve medically underserved communities. This project will implement several health information technology (IT) solutions in the treatment of NICU infants and toddlers, including portable personal developmental/health records (PDHRs) and a system to facilitate electronic sharing of medical records from vendor Misys Connect. Specifically, technology will be used to prevent duplication of tests and increase direct consumer involvement in the health care decisionmaking process, resulting in improved neurological and general health of infants discharged from the NICU. NICU infants are often seen by many follow-up specialists, family practice physicians, nurse practitioners, and emergency room physicians in the first years of life. PDHRs created for the most at-risk infants will allow parents to have a portable, up-to-date health record, which they can provide to primary practitioners in the community, ensuring developmental follow-up and continuity of care. Evaluation of these tools will be measured by analyzing their use and surveying patient and physician satisfaction with the PDHR as compared to paper medical records, as well as gauging agency and personnel buy-in for the movement toward shared electronic medical records.

Specific Aims

- Facilitate adoption of an interoperable system for electronic sharing of medical records among agencies. **(Achieved)**
- Develop and test multimedia portable personal developmental/health records on CD/DVD. **(Achieved)**
- Develop and maintain multimedia Web-based resources to serve as a decision support system and for training and information sharing. **(Achieved)**
- Use telemedicine technologies to enhance and expand the use of developmental care practices in Mississippi NICUs. **(Achieved)**

2008 Activities: In 2008, the summative evaluation of PDHRs for NICU began with a mailed survey and telephone interviews, but patient response rates were very low and delayed the completion of the evaluation. As a result, the evaluation was redesigned to target selected patients who return to the NICU

Follow-Up Clinic at the hospital. In addition, a final version of the Web-based decision support tool, called the Developmental Surveillance for Children Born Prematurely, and an online evaluation tool were posted online in July 2008 for review by pediatricians. The link to the Web-based tool was disseminated through the National Academy of Pediatrics. Evaluation data were also collected for the use of telemedicine technologies to enhance and expand the use of developmental care practices in Mississippi NICUs. The project also completed work with the Misys Connect vendor to implement an interoperable system for electronic sharing of medical records between Forrest General Hospital and Hattiesburg Clinic. A focus group of physicians, administrators, medical records key staff, and IT key staff was conducted in late July 2008 to evaluate this system, and these qualitative data are in the process of being analyzed.

Preliminary Impact and Findings: The evaluation design planned for several aspects of the project included mailed parent questionnaires and phone interviews. However, response to the mailed questionnaire was very poor with less than a 10 percent response rate, and phone interviews were also problematic. Patients seem to avoid contact with anyone from the hospital, possibly due to concerns of bill collectors. Additionally, this population is very transient and difficult to locate post discharge. The project has revised this methodology to collect the data at the NICU Developmental follow-up clinic, where project staff can request participation in the evaluation face-to-face. This clinic only meets once a month, so it will take a number of months to collect sufficient data to begin to analyze this project.

Selected Outputs

Developmental Surveillance for Children Born Prematurely Tool: The tool, which has undergone continual development, evaluation, and revision, shows promise as a Web-based decision-support device to assist physicians and nurse practitioners in deciding when to refer or track infants and toddlers with histories of prematurity for neurodevelopmental testing. An article was published in *Neonatology Today* to describe the tool and its uses:

Atkinson TE, Daniels TH, Prehn J, et al. Monitoring preterm infant motor development: Web-based decision support. *Neonatology Today* 2009;4(3):5-6.

Grantee's Most Recent Self-Reported Quarterly Status: Substantial portions of this project were delayed by a multitude of issues. The evaluation portion of the project should have begun in October 2007, but was delayed for nearly 6 months due to difficulties with data collection, particularly with the parents of high-risk premature infants after they were discharged from the hospital. The project team plans to work with an evaluation consultant to collaborate with project staff in developing alternate strategies for collecting data, developing data collection instruments, and overseeing the evaluation.

Milestones: Progress is on track in some respects but not others.

Budget: Significantly under spent, approximately 5 to 20 percent.