

## **Development of Tailored Diabetes Education and Hypoglycemia Protocol for Staff Nurses**

**Janet Engvall, RN-BCMSN, CDOE, Amy Krajewski, RN, BSN  
Stephanie DesRoches, RN, BSN, Martha Carnes, RN  
Celia Gomes McGillivray, BSN, MPH, CHES  
Audrey Nicolas, RN, BSN**

**Purpose:** To standardize Diabetes care and the treatment of hypoglycemic episodes at the bedside for better patient outcomes.

**Research Question:** How Can Informatics Use Expedite the Development of Tailored Diabetes Education and a Nurse-Driven Hypoglycemia Treatment Protocol?

**Design/Methodology:** To evaluate nurses' diabetes care knowledge, this research council invited all staff nurses to voluntarily participate in an IRB approved, pre/post-test study. Participants completed the Diabetes Basic Knowledge Test (DBKT) (Cronback's  $\mu = .824$ ) and the Diabetes Self-Report Tool (DSRT) ( $\mu = .91$ ), that had been made accessible and confidential on our hospital intranet's learning site. Performance on the tests was processed for statistical significance. An education module, tailored to the identified weakest knowledge areas, was developed and provided online. After receiving the online education, participants completed post-testing on the same materials. Pre- and post-test responses revealed surprising deficits in the management and care of persons with Diabetes.

**Results:** The use of informatics facilitated this project in several ways. Over one hundred participants were able to access the knowledge tests and online education. Computerized statistics tools provided results quickly, while guarding against human error or bias. Among our findings, it was learned that 89% of our staff nurse participants incorrectly selected the most appropriate treatment of acute hypoglycemic episodes. The finding spurred discussion and frustrations regarding glycemic control, realizing need for standardization of hypoglycemia treatment at the bedside. This research group consulted interdisciplinary teams to construct a nurse-driven acute hypoglycemia protocol and order set. Online research databases, interdisciplinary teams in-house and among partnering hospitals all contributed to determining best practice standards for our protocol.

**Practice Implications:** The CDC estimates that there currently are 24 million Americans with Diabetes. This prevalence and associated risks are significant health concerns; especially considering the unexpected sequel of poor diabetes control. Our tailored education and evidence-based treatment protocol guides nurses in decision-making, therefore improving patient safety and quality of care. Further, given this example of a successfully identified and improved a bedside concern, staff nurses are empowered to continue to seek best practice. Our research team was fortunate for quick, accurate statistics relating our staff's knowledge provided by informatics tools. Our online learning site allowed accessibility to education and sharing of bedside experiences in a professional space. The ability to connect instantly with interdisciplinary professionals at multiple locations accelerated our protocol's development. As we proceed with the accepted protocol, we intend to again use online learning tools and efficiently follow-up with the project's impacts.