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Featured Article

Improving Pediatric Nurses' Knowledge, Accuracy, and Confidence Through Code Documentation Simulation

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KEY WORDS

simulation;
acute care;
pediatric;
documentation;
mock code;
nurse

Abstract

Background: Simulation is a successful method to enhance learning, especially how to handle infrequent high-risk events, such as patient codes. However, no studies were found that examined methods for educating nurses in code documentation. The purpose of this study was to evaluate the impact of simulation on nurses' knowledge, confidence, and accuracy of code documentation.

Methods: A one-group pre- and posttest quasi-experimental design was used. Nurses completed a knowledge test and confidence survey before and after participating in two code simulations. Accuracy in documenting the simulated code events was also evaluated. The impact of the simulations on code documentation knowledge pre- and postsession and on the accuracy of code documentation for the two simulations per session was determined by paired-sample *t*-test and the impact on confidence pre- and postsession was determined by Wilcoxon signed-rank test.

Results: Forty-eight pediatric acute care nurses from three units participated in nine simulation sessions. There was a statistically significant increase in knowledge test scores from presimulation ($M = 3.45$, $SD = 1.46$) to postsimulation ($M = 5.68$, $SD = 0.73$) ($t[47] = 9.47$, $p < .001$ [one tailed]). Documentation accuracy improved from the first simulation ($M = 4.59$, $SD = 1.63$) to the second simulation ($M = 6.36$, $SD = 1.66$) ($t[43] = 8.33$, $p < .001$). A statistically significant increase in confidence was found following participation in the simulation session ($z = -6.206$, $p < .0001$) with a large effect size ($r = 0.64$). The median confidence level also increased from presimulation ($Mdn =$ a little confident) to postsimulation ($Mdn =$ somewhat confident).

Conclusion: Simulation can be used to increase nurses' knowledge, confidence, and accuracy with code documentation.

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Introduction

High-fidelity patient simulations and debriefing have been shown to facilitate learning and improve confidence among nurses and other health care professionals (Levett-Jones &

Key Points

- The use of simulation methods for learning code documentation has not been tested.
- Simulation increases pediatric acute care nurses' knowledge, confidence, and accuracy in code documentation.

Lapkin, 2014; Weaver, 2011). As an educational method, simulation has been effective in increasing nurses' self-reported confidence in recognizing patient deterioration (Delac, Blazier, Daniel, & N-Wilfong, 2013) and performance of technical and nontechnical code skills (Dowson, Russ, Sevdalis, Cooper, & De Munter, 2013; Schiak, Plant, Diane, Tsang, & O'Sullivan, 2011). Use of simulation exercises has also been shown to improve nurses' retention of cardiopulmonary resuscitation priorities (Sullivan et al., 2015).

Review of medical record documentation is often the determining factor in establishing whether a breach in the standard of care has occurred (Painter, Dudjak, Kidwell, Simmons, & Kidwell, 2011). According to Painter et al. (2011), "Documentation that is clear, concise, honest, accurate, readable, and timely is essential if liability and cost are to be minimized" (p. 316). Although clear documentation of assessments and interventions is required in critical patient care situations, few studies have examined nurses' knowledge or confidence with this aspect of critical care. Current literature reveals the need for improvement in documentation (Frisch, Reynolds, Conde, Gruen, & Callaway, 2014; Whitcomb et al., 2012; Wright & Everett, 2015); however, no studies found have examined the most effective approach to educating staff to ensure accuracy and confidence in code documentation.

In an effort to improve the quality of code documentation, a new code documentation tool was designed and implemented at our institution. The new tool was introduced to hospital nursing staff in staff meetings and by e-mail and included a video link of a simulated code that could be used to practice documenting along with an example of a "gold standard" completed code documentation tool. Along with the deployment of the tool to nursing staff, a Likert scale survey was sent to 900 pediatric nurses by members of the emergency response team, to assess their experience and comfort levels in code documentation. Of the 225 nurses who responded, the majority, 72%, rated their comfort levels in documentation as "not at all comfortable," to "somewhat comfortable." Self-identified barriers to comfort in documentation reported by survey respondents included a lack of experience with actual code events and few opportunities to document codes. Based on these survey findings, we conducted a study to examine the

effectiveness of code simulations as an educational approach to teaching pediatric acute care nurses about documenting codes using the newly introduced tool. We developed a series of code simulation scenarios and examined nurse knowledge, confidence, and accuracy of code documentation before and after the simulations.

Methods

Study Design

The effects of a code documentation simulation on pediatric acute care nurses' knowledge, confidence, and accuracy were evaluated using a one-group pre- and posttest quasi-experimental design. The study was approved by the hospital quality committee as part of a larger code documentation quality improvement effort and thus was not submitted to the IRB. Pediatric nurses from three inpatient acute care units of a 288-bed, free-standing, university-affiliated, tertiary care, and urban children's hospital in the Midwestern United States were invited to participate in the code documentation simulations. Patients on these units are typically hospitalized with pulmonary, surgical, gastrointestinal, hematology, and oncology diagnoses.

Recruitment

An e-mail introducing the simulation and implementation project was sent to the nursing educators of the three acute care units from February 14 to 26, 2016. A total of 48 nurses volunteered to participate in code documentation simulations held between March 2 and April 11, 2016. On the simulation day, nurses were informed of the simulation by their unit leadership either through a text message to their work phones or by face-to-face notification. In addition to these notification procedures, the unit educator on one unit pressed the "staff assist" button, similar to a "code blue" button to prompt nurse participants to come to one of the simulations. All nursing staff who participated in the simulation did so voluntarily and were reimbursed for their time. No other incentives were provided for participation in the study. Written consent for participation was not obtained as all data were deidentified and reported in aggregate for publication.

Simulation Procedure

On arrival to the simulation, nurses were informed that the simulation environment is a safe learning zone and that specific information regarding an individual's performance in the simulation would not be shared. Although pre- and postdata from individual participants were linked, there were no participant identifiers included in the pre- and postsimulation data. Because the integrity of data could be

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