Improving Newborn Car Seat Safety Before Hospital Discharge

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Abstract
Background: A significant cause of infant and childhood injuries and mortality is motor vehicle accidents. Assessment and remediation studies have determined there are many common errors parents make regarding positioning of a newborn in a car safety seat (CSS). A multi-phased project was undertaken to determine CSS misuse rates at baseline and after implementing a newborn CSS positioning educational strategy among parent/newborn dyads at a large urban 60-bed postpartum unit. The study also investigated the efficacy of an alternative means of education.

Method: A 12 registered nurse trained quality improvement team using a 7-point checklist based on the American Academy of Pediatrics Positioning Recommendations, conducted dyad assessments at baseline and phase I (N=192). In phase I, a step-by-step CSS positioning educational pamphlet was added to mothers’ discharge teaching. In phase II, a CSS positioning YouTube demonstration video was introduced to 14 maternal-child nurses. Phase II data collection metrics included website viewing and educational tool evaluation of the CSS parental video.

Results: At baseline CSS 7-point criteria was met by few (n=20; 20.8%) dyads with most dyads (n=76) demonstrating one or more positioning errors. Shoulder-strap misalignment was the highest criteria missed. After education, CSS criteria was met by 67 (69.8%) dyads. For phase II, all of the nurse evaluators considered both tools useful and would welcome both types of CSS education on the unit.

Conclusion: CSS positioning education at the point of care supports parent safety behaviors.

Discussion
Meeting the Triple Aim
Sustained implementation of teaching aids would improve patients’ experiences of care, especially when it comes to the quality and satisfaction of care they receive regarding car seat safety education. Additionally, sustained implementation would also mean the facility would be improving the health and wellbeing of the tiniest patients, newborns. Finally, the economic benefits of the proposed child safety seat misuse reduction education tactics could mean the mean injury cost of injured children in child seats could be reduced.

References

Video Rubric Used by Nurse Evaluators

Phase I Results
Ready-To-Use Educational Handout
- Of the 192 dyads, at baseline the CSS 7-point criteria was met by few (n=20; 20.8%) dyads with most dyads (n=76) demonstrating one or more positioning errors.
- Shoulder-strap misalignment was the highest criteria missed. After education, CSS criteria was met by 67 (69.8%) dyads.

Phase II
Handout to Locate Online Resource
Phase II expanded parent education strategies to include the use of a point of care user-friendly CSS social media resource video. The handout resource contained a hyperlink as well as a QR code, which could both be used to access a YouTube website that contains video and audio of a Registered Nurse explaining how to appropriately place an infant into a CSS. The video covers all 7 correct usage points and was viewed and evaluated by 14 mother-baby nurses.

Conclusion
Providing sound and accurate car seat education is the responsibility of healthcare providers because their main duty is health promotion. Although the two methods of education are passive, they are informative and exclaim that practicing healthy car seat behaviors should start with the very first use. The findings suggest hospital personnel providing resources and support before discharge can aid in preventing unnecessary infant injuries or death throughout the lifespan. However, further studies are needed that would evaluate the CSS misuse rates when providing education by pamphlet versus video.

Research Questions
1) Does passive car seat safety perinatal education increase the frequency of parents correctly using a car safety seat during first time use?
2) Would maternal-child health nurses consider a car seat safety video, accessed through a mobile application, to be a useful CSS parental educational tool?

Phase II Outcomes
Of the seven video performance criteria, all had some nurses that gave the highest evaluation possible. The nurses’ considerations of use were very positive, with the lowest, out of a possible 100 total score, being 92. Two nurses gave a score of 100. All of the nurses chose to implement both teaching methods and thus allow the parents decide which method they prefer to use to self-educate themselves.