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Homecare Nurse Online Education for Central Line Care

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Homecare is provided to an estimated 12 million patients annually (National Association for Home Care & Hospice, 2010). The homecare nurse provides continuity of care as the patient transitions from hospital to home. Providing safe, quality care in the home is a priority for the homecare nurse. The variety of nursing care provided in the home demands a variety of skills, and excellent critical thinking skills.

The types of care needed in the home include post-surgical care, wound care from simple to complex wound vac therapy, chronic disease management such as diabetes, post-transplant care, infusion therapy, and central line care. Homecare has specialty areas such as hospice care, pediatric home services, general medical homecare, and infusion therapy. Some general medical homecare agencies also provide infusion therapy and central line care. The homecare nurse has extensive, yearly skills training and is supported by a nurse educator. Despite the supportive, knowledgeable environment, there is such a wide variety of skills needed in the home that some skills are rarely used by the homecare nurse. Infusion therapy with central line care is one area in which the nurse employed by a general medical homecare agency may have some previous experience, but does not use this skill on a regular basis.

The Medicare and Medicaid population must be cared for by a Medicare certified agency to ensure reimbursement for nursing services provided in the home. The number of Medicare clients with a central line is a small percentage of the general homecare agency clients. The nurse may not care for a client with a central line for months after the annual education session. This infrequency presents the problem that whenever a skill is not practiced on a regular basis, the homecare nurse's knowledge and confidence may be diminished (Bowden, Rowlands, Buckwell, & Abbott, 2012). Because the homecare nurse is providing care in the home

independently, this situation is more stressful and resources for consultation related to how to provide a specific skill are more limited.

At Fairview Homecare, a general homecare agency certified by Medicare, the nurse educator provides annual skills classes about central line care for homecare nurses. These skills classes provide an opportunity for homecare nurses to review how to care for peripherally inserted central catheters (PICC), access Port-a-Cath (Port), and use anti-thrombolytic medication (Alteplase) for occluded central lines. Due to the infrequency of using these skills, the knowledge, skill, and confidence of these homecare nurses to competently provide central line care are quickly decreased.

The Infusion Nurses Society (INS) defines competency with a skill as performing the skill on a weekly basis (2011, p. S11). Some of the Fairview Homecare nurses provide central line care infrequently (less than weekly), thus the homecare nurses requested a system to review the skills needed to provide central line care. One of the considerations for developing this system is that homecare nurses are not based in an office, and therefore, this educational system for skill review needs to be easily accessible from multiple sites, including the client's home.

This project describes a system that was developed by the author to provide homecare nurses with access to education about central line care using online videos. These online videos do not provide a comprehensive overview of central line care skills, but were developed to supplement the annual central line care skills class, and use as a refresher for the specific central line care skills that are performed most frequently in the home. The purpose of this project is to provide an online educational resource for homecare nurses who provide central line care to clients in the home.

Survey of Homecare Nurses

The Infusion Nurses Society (INS) Standards of Practice (2011) state that competency is validated “initially and on an ongoing basis” (p. S11). The yearly skills review with IV therapy and central line care meet this standard. The INS states that a high-risk task is an “invasive procedure with the potential to be harmful” (INS, 2011, p. S11). To meet this standard, nurse educators must assure homecare nurses have the knowledge, skill, and confidence to provide the care with competence. To assess the knowledge, skill, and confidence of Fairview Homecare nurses related to providing central line care in the home, the author developed a survey to determine how often they provide peripherally inserted central catheter (PICC) cares in the home and their level of confidence related to providing central line care. This survey was completed by the Fairview Homecare nurses prior to attending the annual central line care class.

A total of 24 Fairview Homecare nurses were surveyed; 9 nurses (37.5%) perform PICC care on a weekly basis and 15 nurses (62.5%) perform PICC care with a frequency of once every 2-12 months. The 24 nurses were also surveyed for port-a-cath (Port) accessing frequency; no nurses perform this skill on a weekly basis and 4 nurses (16.6%) access Ports on a monthly basis. Thirteen of 24 nurses (54%) used Alteplase in the last year for occluded central lines, but no homecare nurses used Alteplase in the month prior to the survey.

A Likert scale from 0-10 was used by the 24 homecare nurses to self-rate their confidence levels. A rating of 6-10 was considered competent. Prior to the annual central line care class, 17 of 24 nurses (71%) rated their confidence level for caring for peripherally inserted central catheters (PICC) in the range of 6-10. The confidence level for caring for PICCs after the class increased to 91%, with 22 of 24 nurses rating their confidence level at 6-10. Twelve of 24 nurses (50%) rated their confidence for accessing Ports between 6-10 prior to class. Following

class, 22 of 24 nurses (91%) rated their confidence level at 6-10 for accessing Ports. Thirteen of 24 nurses indicated their confidence with administration of Alteplase for occluded central lines prior to class at 6-10. After class, 22 of 24 nurses (91%) indicated they were confident in the use of Alteplase for occluded central lines. The administration of the drug is not as complicated as central line care, and once the skill is reviewed, a nurse usually feels confident in providing this skill.

The results of the survey indicate that after attending the central line care class, the Fairview Homecare nurses reported improved confidence levels with how to care for PICCs, how to access Ports, and the use of Alteplase. However, the survey results also indicated that the homecare nurses provide these skills infrequently (less than weekly as recommended by the INS to maintain competence) and suggests that an educational intervention for reviewing these skills prior to providing central line care in the home would increase their knowledge, skills, and confidence in performing these skills competently in the home.

Literature Review

Several studies describe the use of online videos to promote learning skills for nursing students. McKenny (2011) utilized online video for demonstration of sterile wet to dry dressing for nursing students enrolled in an associate degree program. The 29 students in group 1 had the online video, and the 10 students in group 2 had direct demonstration of the sterile wet to dry dressing by the instructor. There was no difference in the student demonstration of the skill between the two groups.

A study with first year accelerated nursing students had positive results for the use of online videos and acquiring skills (Bloomfield & Jones, 2013). The study evaluated the e-learning experience of the 83 nursing students. The video learning of skill demonstrations was

perceived as the most useful resource. The researchers concluded that using a blended approach with both traditional skill demonstration and accessible video demonstration provides positive support for learning a skill (Bloomfield & Jones, 2013).

Holland et al. (2013) conducted a study using videos to learn oral medication administration. There were 322 first year undergraduate nursing students divided into two groups. Group A received the standard lecture and skills lab for medication administration. Group B received the same lecture and skills lab, in addition they had unlimited access to videos demonstrating medication administration. The pass/fail results were similar for both groups; however, for “borderline” students, Group B had a positive result with “fewer students failing in the Intervention group” (Holland et al., 2013, p. 665).

Finally, Cardoso et. al. (2012) conducted a study with 26 undergraduate nursing students and the use of a video for Port accessing. The students watched a Port accessing video three times, and then demonstrated the skill. The students were evaluated with a pre-test and post-test. The study described improved knowledge and skill for Port accessing by watching a Port accessing video demonstration.

Intervention

The Home Infusion division of Fairview is utilized to support and teach central line care to the Fairview Homecare division. Several central line classes were conducted for homecare nurses, who were taught by the author in conjunction with the Fairview Homecare Nurse Educator. Procedures for central line dressing changes for PICC lines, Port accessing, and the use of Alteplase for occluded central lines were reviewed during these central line classes. After the review, the homecare nurses demonstrated each procedure.

My recommendation to develop online videos for central line care was well received by the Fairview Homecare Nurse Educator. The videos were developed using a mannequin model with a PICC and Port. The videos do not provide a comprehensive education about central line care, but rather a refresher to the class that provides a review of the skills for the homecare nurses. The camera shot is within 5 inches of the mannequin so the detail of the procedure is clear. The videos are short, approximately 5-8 minutes in length because the homecare nurses are very busy and need precise information. The videos were edited and uploaded to the Fairview Homecare website and are accessible to the Fairview Homecare nurses only with password protection. The Fairview Homecare nurses continue to attend the annual class about central line care and have been instructed by the nurse educator to view the video prior to performing the skill in the home. The homecare nurses recently were provided with I-phones so accessing the online educational videos is easier.

Recommendations

Hospitals and homecare agencies have always had policies and procedures. The written procedure is one way to learn the skill; however, to see a demonstration of the skill has proven to be more effective way to teach (Holland et al., 2013). Utilizing video is inexpensive and technologically easy to accomplish. The central line care videos are currently being utilized with the Fairview Homecare nurses in conjunction with the required annual central line class. Verbal feedback from the Fairview Homecare Nurse Educator has been positive for how videos are improving the confidence, knowledge, and skill of the Fairview Homecare nurses who provide central line care. The videos are also useful after hours for the triage nurse, when the Fairview Homecare Nurse Educator is not available for consultation. Further study is needed to determine

the use of online educational videos to promote the knowledge, skill, and confidence levels of Fairview Homecare nurses for performing other infrequently used skills.

Video education is not new to nursing. However, the concept of customized online education anywhere and anytime is new. Fairview has resources for education through the Learning Management System (LMS) or YouTube. However, it may take hours to find exactly what is needed, and it may not be consistent with agency policy. For learning to take place, the educational resource must be readily available and customized to the learner, and the skill needed to be learned and/or reviewed must be clearly presented and relevant to the learner (Bromley, 2010). By customizing these online videos about central line care and making these videos easily accessible, homecare nurses may be more likely to review these infrequently used skills before performing central line care in the home and be able to perform these skills more confidently and competently.

Fairview Home Infusion is participating in the Creighton University study related to total parenteral nutrition (TPN) clients and catheter related bloodstream infections (CRBSI). The TPN population has the highest rates of CRBSI among all patients receiving intravenous therapy. A uniformed client education video is being developed for online video demonstration for TPN set up. The client or caregiver will watch the online demonstration and follow the step by step guidelines. If the CRBSI rates for the TPN clients decrease, then the video education for clients will be expanded for other client populations receiving intravenous therapy in the home.

Conclusions

Developing a system for online video education has important implications for homecare nurses who perform specific skills infrequently for clients in the home as well as for clients who are receiving homecare services and their families. For homecare nurses, online video education

about specific skills that are performed infrequently in the home needs to be readily available and concise. Because homecare nurses have already learned the basic concepts and have demonstrated the ability to perform these skills safely and competently, homecare nurses need online video education resources that provide opportunities to review infrequently performed skills prior to actually performing the skill with clients in the home. For clients and their families, benefits of detailed online video demonstration are also important considerations related to developing a system of online video education. By seeing the demonstration multiple times, along with traditional written instructions, clients and their families are able to participate more actively and knowledgeably in their own care.

Online video education for learning nursing skills has been available for many years, but it has been underutilized, specifically in supporting the “just-in-time” education of homecare nurses who perform specific nursing skills infrequently in the home. With improved access and more effective use of existing technologies, homecare nurses are able to have concise instructions available on computers or internet capable phones. The survey developed by the author as part of this project identified the need for an easily accessible educational resource for central line care to support the knowledge, skill, and confidence of homecare nurses who perform central line cares infrequently. By developing online videos that are easily accessed by homecare nurses using existing technologies, this project describes an innovative application of online video education that may support the ability of homecare nurses to more competently and confidently perform infrequently used central line care skills in the home. Ultimately, this project provides an easy and cost-effective means to enhance the quality and safety of homecare nursing services that has the potential to improve patient outcomes by decreasing complications

related to central line home infusion therapy. It is the responsibility for all homecare agencies to place video education with easy online access to support nurses and clients in the home.

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