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Abstract Application for Nebraska ACC 2020 Annual Meeting

Background

Standards set by the Society of Thoracic Surgeons (STS) and Enhanced Recovery After Cardiac Surgery Society (ERAS-Cardiac) discourage the historical practice of milking and stripping to keep chest tubes patent (Engleman et al., 2019, p. 760). An alternative method to keep chest tubes patent is utilizing active clearance technology (ACT). Prior to implementing this new product into practice, Nebraska Medicine's Enterprise Quality Outcomes department conducted a Failure Modes and Effects Analysis (FMEA). Inpatient Cardiac Nursing Professional Development (NPD) Specialists assisted with the FMEA to assess for risk versus benefit for using this product. The FMEA detailed the steps from time of purchase all the way to the steps of discontinuation of the product post-patient use with the purpose to identify key patient safety processes and educational items for end-users.

Methods

The first action item addressed by the FMEA team was the systematic process of how to use the product. The team worked with the vendor to create a process map based on the instructions for use (IFU) and unique needs of patients and staff. Identifying where the product would be located and who would be responsible for each step.

The FMEA process helped the NPD Specialists identify that the IFU recommended clearing schedule was not realistic in the inpatient cardiac units where these products would be utilized. Work was done with the vendor to investigate the evidence behind the schedule listed in the IFU and what other hospitals found to work. NPD Specialists and department leadership approached Risk Council for guidance. The Risk Council approved a clinical trial of 10 patients following the IFU's actuation schedule and a follow-up trial of 10 additional patients following proposed actuation schedule developed by the Cardiac NPDS to compare patient outcomes.

Next, key stakeholders who cared for these patients were identified and provided education. The various specialties identified were IP cardiac bedside nurses, IP cardiac patient care technicians, providers, cardiac rehab nurses, physical and occupational therapists, and the radiology department. The education was individualized and appropriate for the continuum of care and the specific roles caring for the patient. Finally, the NPD Specialists worked to update the nursing policy that guides care and management of chest tubes.

Results

Our group was able to set the standard at our institution for introducing new products and map out workflow processes to identify barriers and key education points to optimize success of project and ensure safe outcomes for patients.

Conclusion

Completing the FMEA process the Cardiac NPD Specialists were able to identify critical elements to address with leadership and key points to educate on before introducing a new product into practice.

The trial gave sufficient evidence to risk council to approve the use of the product using the proposed actuation schedule developed at NM.

References

Engelman DT, Ben Ali W, Williams JB, et al. Guidelines for Perioperative Care in Cardiac Surgery: Enhanced Recovery After Surgery Society Recommendations. *JAMA Surgery*. 2019;154(8):755-766. doi:10.1001/jamasurg.2019.1153