Providing Optimal Treatment Continuity through a Comprehensive Continuous Renal Replacement Therapy Nursing Education Program

Cynthia McMillan BSN RN CNN, Nicole Henley RN BSN CCRN, Ruth Morgan RN

Background

New Continuous Renal Replacement Therapy (CRRT) machines were introduced to all ICUs.

ICU nurses shared feedback indicating anxiety regarding lack of sufficient knowledge and comfort in monitoring and troubleshooting the new machines.

Multiple clotted systems reported.

Physician staff expressed concern regarding the lack of continuity of treatments.

Purpose:

To develop competencies for management of CRRT

To provide an ongoing support for system troubleshooting

To integrate CCRT education into staff orientation

To assess effectiveness through evaluations, interviews, and prolonged CRRT system function

Methods: A multifaceted education plan was developed in a Medical Intensive Care Unit. The plan was derived from nursing interviews, CRRT machine-run information, and on-site evaluation of machine management. Educational methods included didactic and hands-on learning. Classroom instruction involved dialysis principals, machine familiarity, and hands-on simulation. The completion of the session, attendees received a handout reference to reinforce the material taught. Continued support through experienced CRRT preceptors was also integrated into the process to maintain staff expertise with the process.

Interventions

Stage 1 – CRRT class designated “mandatory” for orientation. (usually taken around the 1 year mark on the unit)

- View NxStage computer based learning prior to class
- Includes machine components, machine set up and troubleshooting alarms.

Stage 2 – CRRT class

- Principals of dialysis
- Anticoagulation options and implications.
- Review of all machine components including information available from the viewing screen.
- Hands on procedures with experienced staff: review of frequent complex issues and review history screen of alarms to determine issues when system went down

Stage 3 – In the ICU

Designated CRRT champions chosen by the Nursing Education Coordinator. CCRT champions have extensive knowledge, comfort working with the machine and implementing troubleshooting steps during alarm states to aid new staff.

- Champions assigned to new staff as preceptors
- Pairing new user with experienced staff for supervised hands on practice.

Results

Currently, 71% of MICU RNs are competent to provide CRRT to their patients

Conclusion

The educational program was successful. Fewer concerns are identified. The CRRT system run times have improved. The clotting of cartridges decreased. Nursing confidence regarding troubleshooting and maintaining continuity of patient care increased

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