

A Change in Flow: Safely Moving from Heparin to Citrate-Based Anticoagulation

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This report describes a program change from heparin to citrate-based anticoagulation (CBAC). The primary focus was on the acquisition of necessary skills to bedside providers with a safety engineered design. A multidisciplinary team defined primary endpoints. Education (ED) targeted the primary prevention of critical incidents. Post-implementation surveillance was planned to identify unforeseen patient hazards to be addressed and reinforced in the re-ED cycle. The new CBAC was developed and implemented in a 8-month period. New skills were acquired through site visits to established programs and local protocols reformatted. The ED program emphasized hands-on application of the new techniques and validation of learning was confirmed with post-testing. Over the next four-months, 3 patients successfully received CBAC. Prospective surveillance identified several unforeseen hazards: citrate removal during the process of blood priming, as well variability in expected ionized calcium levels. The responsive design of the ED program effectively promoted adaptive changes to the skill-set of staff. The immediate follow-up and re-ED cycles emphasized patient safety. Notably, with the focus directed at safety rather than individual performance, staff were open to accept personal learning opportunities. The use of a patient safety-based approach demonstrated that a supportive and responsive system can successfully predict and identify hazards.

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