In Search Of The "Best Practice" For Central And Peripheral Line Blood Drawing In The Neonatal And Pediatric ICU

In this feature, Neonatal Intensive Care interviews clinicians and healthcare providers about the actual application of specific products and therapies. This interview is with NeuroNICU educator Shannon Tinkler, RN, BSN, RNC-NIC, and clinical nurse specialist Michelle D Rhein, MSN, RN, CNS, RNC-NIC, of Stanford Children's Health/Lucile Packard Children's Hospital, Stanford about the Hummi Micro Draw Device.

Neonatal Intensive Care: How long have you been using the Hummi Micro Draw system?
Michelle D Rhein: We have been using the Hummi Micro Draw device for over 5 years at different institutions.

NIC: How would you rate the ease of adoption and use when using the Hummi system for drawing blood in the NICU vs others you have tried?
MR: Onsite training and clinical support was superb and allowed for easy adoption in the clinical setting. Since previously there was no dedicated system for closed blood draw, the clinicians were appreciative of having a product designed specifically for this purpose, instead of having to piece together different components to achieve a closed system.

NIC: What clinical improvement does the Hummi system provide for your premature infant population vs other methods of drawing blood you have used?
MR: The Hummi provides a closed system for drawing blood which decreases the exposure for infection by eliminating the use of multiple stopcocks and exposure induced by opening the line. The Micro Draw System minimizes the amount of blood displaced when sampling arterial lines. Clinically, it is important to remove only the blood necessary for waste and sample, as we know there are detrimental effects on cerebral oxygenation when larger blood volumes are withdrawn.

NIC: Since the Hummi system is a closed system in use, have you seen an impact in your infection (CLABSI) rates since you began using the Hummi closed system?
MR: In a quality improvement effort to reduce our CLABSI rates, we implemented many changes simultaneously, including the Hummi Micro Draw device. While we have seen a reduction in our CLABSI rate in this reporting period, it cannot be attributed solely to implementation of the Hummi, but has been a valuable asset in elimination of stopcocks as recommended by the CDC and NANN.

NIC: What type of catheter blood draws are you doing routinely with the Hummi closed system? Peripheral? Umbilical? PICC? Other types of Central Lines? Blood Culture?
MR: We are using the Hummi to withdraw samples from umbilical venous and arterial lines, peripheral arterial lines, and double lumen PICC catheters (we don't draw from PICC lines less than 2.6 Fr). We do not use the Hummi for blood cultures on these lines, we have a separate process for sterile blood culture samples.

NIC: Overall blood and fluid volume movement when drawing blood in the premature infant is very important. How does the Hummi system meet your needs for hemodynamic stability when drawing blood in the premature infant?
MR: Changes in cerebral blood volume and oxygenation are blunted by reduction in sample volume (Roll, et al., 2006 & Hüning, et al., 2007). The Hummi micro draw blood system enables clinicians to displace the minimal amount of blood necessary to ensure hemodynamic stability and limit changes to cerebral oxygenation during umbilical sampling.

NIC: Do you find the training and support materials provided by the manufacturer and distributor of the Hummi system to be of help to you and your staff when learning to use the system?
MR: The training and support materials were very helpful in justifying change in practice to the staff. The support provided by the vendor was outstanding. The vendor was present at multiple skills days, with a realistic hands-on model and demonstration that the nursing staff felt was valuable, and helped adequately prepare them for adoption of the Hummi into practice. The nurses and staff also valued the evidence provided that supported the Hummi micro draw device as a best practice.

NIC: Would it be of benefit to your patient care from an infection control aspect, if the Hummi system was available to you in a fully assembled manner fully integrated into your umbilical catheter?
MR: Yes, if the Hummi system was available prefabricated, it would eliminate the chance of incorrect set-up and allow for seamless integration into the workflow. A prefabricated system would reduce the number the number of connections when setting up a fluid administration set, therefore eliminating potential contamination sites.

NIC: How would you rate your overall satisfaction clinically with the Hummi Micro Draw system?
MR: Overall, the Hummi Micro draw device is phenomenal, and when paired with the outstanding customer service and issue resolution, we highly recommend the device to everyone searching for a closed draw system for the NICU.

If you would like to participate in this feature, as a company or healthcare provider, please contact Steve Goldstein at s.gold4@verizon.net.