



Cleaning and Disinfecting Prothrombin Monitoring Equipment

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Prothrombin monitoring meters (e.g., CoaguChek[®] XS System) are commonly used in home care to provide a quantitative prothrombin time and



Figure 1. Example of an “In-Use” CoaguChek[®] XS meter without the Test Strip Guide Cover on and not properly cleaned
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international normalized ratio (INR), important components of routine monitoring of home care patients on warfarin therapy. Capillary blood is typically sampled using a fingerstick device and tested with a portable prothrombin monitoring meter. During this procedure, blood-borne pathogens can be easily transmitted if infection prevention and control procedures are not meticulously adhered to. Between 2008 and 2013, there were several healthcare-associated outbreaks of the hepatitis B virus identified in patients receiving blood glucose monitoring testing from a home healthcare agency investigated by the Centers for Disease Control and Prevention. McGoldrick (2014) described the best practices for preventing patient-to-patient transmission of hepatitis B virus using glucose meters, and these same procedures can be applied to using a prothrombin monitoring device.

Figures 1 and 2 contain examples of prothrombin monitor-

ing devices observed during a home visit that were visibly soiled with patients’ blood. Figure 3 contains an example of a CoaguChek[®] XS PT Test Strips vial that was visibly soiled with a patient’s blood on the interior and exterior portion of the vial and stored inside a prothrombin monitoring device storage bag in the nurse’s trunk. The root cause of these problems was identified to be lack of staff education. The nursing staff were “shocked” to find the equipment and supplies stored in their possession to be visibly soiled with their patient’s blood. Despite their training and competence assessment activities, the staff were not aware that the prothrombin monitoring devices have movable components that allowed for cleaning and disinfection, and were not aware of infection prevention and control best practices. The staff were also not educated on the type of disinfectant to use, and the contact time for the disinfectant to remain wet on the surface of the prothrombin monitoring device.



Figure 2. Example of an “In-Use” Prothrombin Monitoring Device not properly cleaned
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Note: This image is an example of lack of cleaning only. Alere, Inc., the manufacturer of the INRatio[®] System has voluntarily withdrawn the meter from the marketplace, in collaboration with the Food and Drug Administration (FDA). In certain cases, it may have provided an INR result that was clinically significantly lower than a result obtained using a reference INR system (FDA, 2016).



Figure 3. Example of “In-Use” CoaguChek XS PT Test Strips
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The prothrombin monitoring meter should be cleaned and disinfected with either a 70% isopropyl alcohol wipe or a 10% sodium hypochlorite solution (i.e., manufacturer-prepared bleach wipe) (not a spray) for a minimum of a 1-minute contact time (McGoldrick, 2017). Sometimes a picture is “worth a 1,000 words,” and we can all learn to improve our patient care practices and keep our patients safe at home. ■

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The author declares no conflicts of interest.

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DOI:10.1097/NHH.0000000000000470

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