HEALTHTRUST
Education & Clinical Resources

Supply Disruption

Blood & Fluid Warming

Healthcare systems across the nation are experiencing supply chain disruptions and product shortages due to the ongoing influence of COVID-19. Factors such as raw material shortages with subsequent impact on component production, shipping port logjams, freight costs, and more have significantly affected the availability of critical patient care items and devices in many categories. Early recognition of potential supply shortages, fully understanding the utilization (where and why) of these products, and implementing conservation strategies will support effective management of these products throughout the disruption. Blood fluid warming supplies have been identified as a potential area of supply shortage, and healthcare facilities may consider the following information in their response to this shortage.

Background

- The cardiovascular, gastrointestinal, endocrine, immune and coagulation systems are negatively impacted by hypothermia, which can be exacerbated in trauma patients through the infusion of large amounts of insufficiently warmed blood and blood products.[1]
- Other conditions which may necessitate blood or fluid warming to prevent ill effects of hypothermia include: treatment of intraoperative hypothermia, plasma exchange for therapeutic apheresis in patients known to have clinically significant cold agglutinins, neonate exchange transfusions or during replacement of large blood volumes (adults more than 50 mL/kg/hr and children more than 15 mL/kg/hr).[1,2]

Clinical Practice Guidelines

- The American Red Cross and the Society of Infusion Nursing advise blood warming should only be performed with devices specifically designed for that purpose, in accordance with the manufacturer's directions.[2,3,4] These devices should have a visible thermometer, an audible warning alarm and be properly maintained.[2,3] The Red Cross recommends using only FDA-approved devices to avoid hemolysis.[4]
- If the tubing is long, consider insulating tubing to reduce heat loss.[5]

Considerations

- The following measures may be helpful to consider in efforts to conserve blood and fluid warming tubing:
    - Review the HealthTrust Blood and Fluid Warming Product Feature Summary for alternative suppliers.
    - Remove the tubing from locations where it is rarely used and centralize it to one location.
    - Establish appropriate use guidelines and audit to ensure the guidelines are followed.
    - Re-educate staff on other measures for patient temperature management when blood and fluid warming are not appropriate. Review the HealthTrust Clinical Evidence Summary and Product Feature Summary on Patient Temperature Management for additional information.

References

1. Ghosh I & Haldar R, Blood warming in trauma related transfusions-Precepts and Practices. *J Cardiovasc Med Cardiol.* 2019;6(4):94-97. DOI: 10.17352/2455-2976.000101
2. Gorski LA, Hadaway L, Hagle ME, et al. Infusion therapy standards of practice. *J Infus Nurs.* 2021;44(suppl1):S1-S224. DOI:10.1097/NAN.0000000000000396
3. A compendium of transfusion practice guidelines: 4th edition. *American Red Cross. 2021.* *https://www.redcrossblood.org/content/dam/redcrossblood/hospital-page-documents/334401_compendium_v04jan2021_bookmarkedworking_rwv01.pdf*

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