

Accession Number: H0265	ECRI Priority: High	Published: 07/08/2015
Channel: Devices	FDA: Not Specified	Last Updated: 07/08/2015
Infusion Pump Occlusion Alarms Cannot Detect Infiltrations [ECRI Exclusive Hazard Report]		

Product Identifier(s)

Infusion Pumps [Capital Equipment]

Problem

1. A common misconception persists that infusion pump occlusion alarms can detect infiltrations (i.e., when fluid enters tissue outside vessels).
2. Infusion pumps will alarm for occlusions only when downstream pressure reaches a specified value; elevated pressures resulting from infiltration are typically far lower than levels triggering occlusion alarms.
3. Infiltration may lead to a patient not receiving necessary fluids or medications.
4. Infiltration can lead to tissue injury and even tissue necrosis.

ECRI Recommendations

Clinical Staff

1. Instruct staff members that infusion pumps do not detect infiltrations.
2. IV sites should be periodically assessed to examine for infiltration.
3. Symptoms of infiltration may include pain, burning, or stinging at or around the IV site.
4. Special attention should be paid to infusions in neonatal intensive care units since neonates are more susceptible to serious injury resulting from infiltrations.
5. Infusions of chemotherapeutic drugs, which may exacerbate the effects of infiltration, should be closely monitored.

Clinical Engineering staff

1. If an infusion pump is received for servicing because of an infiltration, inform personnel that infusion pumps associated with infiltration incidents can be returned for clinical use after a routine inspection if no problem is found.
2. Monitor pump repair work orders for pumps associated with infiltration. An increase in work orders may indicate the need for additional clinician training on avoiding and detecting infiltration.
3. If a pump is submitted for service because of an infiltration incident, distribute this Alert to clinical staff for education.

Background

- We have received several reports from clinical engineering personnel that infusion pumps were considered faulty by clinicians because infiltration occurred and the occlusion alarm was not triggered. Clinician expectation and a common misconception is that as an infiltration progresses, sufficient extravascular pressure will develop to trigger an occlusion alarm.
- ECRI Institute is not aware of any large volume infusion pump that can detect infiltration.
- Most manufacturers state in the user manual that their pumps are not designed or intended to detect infiltrations.

References & Source Documents:

1. Infusion Nurses Society. Infusion Nursing Standards of Practice. Journal of Infusion Nursing, Supplement to January/February 2011. Vol. 34, Number 1S, 48. Pg. S66-S68.

2. Infusion Nurses Society. Recommendations for frequency of assessment of the short peripheral catheter site [position paper online]. 2012 Jul 5. Available from Internet: [Click here](#).

UMDNS Term(s)

Infusion Pumps [16495]

Software, Infusion Pump System, Control/Programming [27367]

Geographic Region(s)

Worldwide

Suggested Distribution

Clinical/Biomedical Engineering, Nursing, Risk Management/Continuous Quality Improvement, IV Therapy

Comment

- This alert is a living document and may be updated when ECRI Institute receives additional information. In circumstances in which we determine that it is appropriate for customers to repeat their review of an issue (e.g., when additional affected product has been identified), we will post a separate update alert. In other cases, we may add information, such as additional commentary, recommendations, and/or source documents, to the original alert. For additional information regarding the format of this alert, refer to our [HDA Format Guide](#).