

## Unsafe Infusion and Injection Practices

Administering patient medication injections as well as intravenous (IV) infusions is a common function for nurses working at the bedside. While these basic tasks are taught in nursing school, serious errors continue to occur such as administering medications or IV solutions with a visible precipitate and reusing syringes between patients. These poor practices may cause harm and possibly death to patients. Here's a brief overview of these two issues.

### Medications with a Visible Precipitate

Liquid medications or IV solutions that contain a precipitate such as crystals, haziness or cloudiness, should not be administered to patients. Precipitates are caused by drug or diluent incompatibilities and can lead to drug ineffectiveness or catheter occlusions. More critically, precipitate matter may become dislodged, enter the bloodstream and block blood vessels resulting in thrombophlebitis, multi-organ failure and death. Other causes of precipitates include compounding or flushing errors in which the wrong diluent, flush or base solution, or concentration/dose was used.<sup>1</sup>

### Reusing Prefilled Saline Flush Syringes

Prefilled saline flush syringes should only be used once and should not be administered to multiple patients. Reusing saline flushes is an extremely unsafe practice as it increases the risk for transmission of bloodborne diseases such as hepatitis C.

Nurse managers and healthcare administrators should be notified of these dangerous practices as they may indicate an endemic problem requiring further education and monitoring. Several strategies to reduce the occurrence of these practices include:

### Education

- Provide orientation and annual competency checks on injection and infusion safety for new, permanent and temporary nursing staff.
- Review and reinforce basic concepts of infection control and aseptic technique and emphasize that syringe and/or needle reuse is dangerous and prohibited.
- Instruct all nurses, pharmacists and pharmacy technicians to inspect medications and solutions for precipitates and if found, the drug should not be administered to the patient.
- Review which solutions should be clear versus cloudy.
- Provide examples or pictures of precipitates so that clinicians know what to look for.
- Ensure practitioners know how to identify and avoid drug incompatibilities and review strategies such as thoroughly flushing lines between administration of incompatible drugs or utilizing separate injection ports and sites.
- Use in-line filters for solutions that are known to precipitate; however, precipitates may still form in the tubing below the filter and filters may also become clogged.

### Policies and Procedures

- Ensure your institution policies and procedures related to injections and infusion practices comply with principles of infection control, aseptic technique, Center for Disease Control and Prevention (CDC) safe injection practices guidelines, and Institute for Safe Medication Practices

### References

1. Institute for Safe Medication Practices. (2017). *Nurse Advise-ERR*. Retrieved from Institute for Safe Medication Practices: <http://www.ismp.org/newsletters/nursing/issues/NurseAdviseERR201705.pdf>

(ISMP) Safe Practice Guidelines for Adult IV Push Medications. Protocols should be very clear in communicating the importance of avoiding or immediately stopping any injection or infusion if particulate matter is found.

#### **Surveillance**

- Develop a plan to monitor compliance with correct injection and infusion techniques in all areas where medications are prepared and administered. Utilize checklists such as the CDC safe injection practices guideline that provides a model for surveillance and data collection. Immediately correct syringe reuse habits and notify patients of potential exposure to bloodborne pathogens and the need for testing.

#### **References**

1. Institute for Safe Medication Practices. (2017). *Nurse Advise-ERR*. Retrieved from Institute for Safe Medication Practices: <http://www.ismp.org/newsletters/nursing/issues/NurseAdviseERR201705.pdf>