

ISMP Survey on Mixing Injectable Medications and Infusions Outside the Pharmacy

If you are a practitioner who prepares sterile, injectable medications and/or infusions outside of a pharmacy for administration to patients (e.g., intravenous [IV] push, IV infusion, intramuscular [IM] injection, epidural medications), please take our survey! Mixing sterile medications and infusions outside the pharmacy requires practitioners to take steps to identify, reduce, and eliminate errors and their causative factors to minimize the risk of patient harm. Please help ISMP learn more about mixing practices outside the pharmacy by completing our survey by **October 9, 2020**, which can be found at: www.ismp.org/ext/533.

This survey is focused on mixing medications outside of a pharmacy department. If you are a pharmacist or pharmacy technician who compounds sterile preparations in the pharmacy, please see ISMP's survey on pharmacy compounding by visiting: www.ismp.org/ext/526.

Frequency of Mixing

1 Please tell us how often you mix the following types of sterile, injectable medications and/or infusions (outside the pharmacy).

Sterile, Injectable Medications and Infusions	Frequency					Comments
	Never	Rarely	Some-times	Often	Always	
a IV push medications (e.g., reconstitution of a powder, transfer drug from a vial into a syringe, dilution of a drug)						
b IV intermittent infusions (e.g., antibiotics, antiemetics, anti-convulsants)						
c IV continuous infusions or titrations (e.g., vasopressors, insulin, oxytocin)						
d Epidural and/or other neuraxial injections or infusions						
e IM injection medications						

Key

Never = 0% of the time; **Rarely** = 1 to 10% of the time; **Sometimes** = 11 to 50% of the time; **Often** = 51 to 95% of the time; **Always** = greater than 95% of the time

If you never mix any sterile, injectable medications and/or infusions outside the pharmacy, please skip to question 8.

Mixing Practices

2 Please tell us the extent to which you agree or disagree with the following statements.

Statements	Strongly Disagree		Strongly Agree			Comments
	1	2	3	4	5	
a Practitioners mix one sterile, injectable medication and/or infusion at a time						
b My organization has established standard mixing procedures for sterile, injectable medications and/or infusions when the mixing is done outside the pharmacy						
If score 3 or above: Practitioners follow the organization-defined standard mixing procedures						
c My organization has established a standard process for labeling sterile, injectable medications and/or infusions mixed outside the pharmacy (e.g., a standard label that includes drug name, concentration, date and time prepared, initials of preparer, as appropriate)						
If score 3 or above: Practitioners follow the organization-defined labeling process for sterile, injectable medications and/or infusions						
d My organization requires practitioners who mix sterile, injectable medications and/or infusions outside the pharmacy to undergo formal training and an annual competency assessment and verification						
e I have been formally trained to mix sterile, injectable medications and/or infusions outside the pharmacy, and my competency for these tasks is assessed and verified annually						

> Survey — continued from page 5

3 Please tell us all the locations where you mix sterile, injectable medications and/or infusions. (check all that apply)

- In a segregated area designated for mixing sterile ingredients
- In a medication room
- On a counter/desk in the nursing station
- On a computer workstation
- On an anesthesia workstation
- At the bedside
- In a laminar airflow hood located outside the pharmacy
- Other (please specify): _____

4 When you mix sterile, injectable medications and/or infusions, does your organization require another practitioner to independently double check that certain medications or infusions have been mixed correctly prior to administration?

- No
 - Don't Know
 - Yes
- If yes, which medications and/or infusions? _____

Training to Mix

5 At what point in your career did you learn how to perform sterile, injectable medication and/or infusion mixing tasks? (select one best answer)

- Primarily "on the job;" I never received any formal training for these tasks
- Primarily during my professional training program and/or residency program
- Primarily during orientation from my preceptor
- Other (please specify): _____

Mixing Errors

6 Are you aware of or personally experienced any errors when mixing sterile, injectable medications and/or infusions during the past 12 months in your organization?

- No
 - Don't Know
 - Yes
- If yes, please specify the error types and whether you are aware of and/or personally experience the error(s).

Error Types	Personally Experienced	Aware of Happening
a. No label or an error in drug labeling		
b. Incorrect drug used		
c. Incorrect drug dose, concentration, and/or volume used		
d. Incorrect diluent used		
e. Incorrect diluent volume used		
f. Expired drug		
g. Wrong preparation technique (e.g., not using a filter)		
h. Other (please specify):		

7 What is the biggest safety challenge or other concerns/comments you have related to mixing sterile, injectable medications and/or infusions?

About Your Facility and You

8 Please select the categories that best describe your profession, clinical setting, and work setting.

- Profession:** Nurse Nurse anesthetist Advanced practice nurse Anesthesiologist Other physician
 Physician assistant Other (please specify): _____
- Clinical setting:** Adult critical care Adult medical-surgical Pediatric/neonatal critical care Pediatrics
 Oncology Perioperative Emergency Labor and delivery Cardiac catheterization lab
 Interventional radiology Outpatient setting Long-term care Other (please specify): _____
- Work setting:** Acute care hospital Specialty hospital Ambulatory infusion center Ambulatory surgery center
 Long-term care Physician office/clinic Other (please specify): _____