ISMP Gap Analysis Tool for Safe IV Push Medication Practices

ISMP

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Acknowledgements

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Baxter

Volunteer Reviewers

ISMP is grateful to the following medication safety practitioner volunteers, who helped inform/review the content of the ***ISMP Gap Analysis Tool (GAT) for Safe IV Push Medication Practices*** and/or tested the data submission portal:

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Invitation to Participate

Dear Healthcare Provider:

The Institute for Safe Medication Practices (ISMP) is pleased to provide our nation's healthcare providers with the ***ISMP Gap Analysis Tool (GAT) for Safe IV Push Medication Practices***. This tool, funded by Baxter Healthcare Corporation, offers hospitals, long-term care facilities, and certain outpatient facilities, such as oncology/infusion clinics, ambulatory surgery centers, emergency/urgent care facilities, and endoscopy centers, a unique opportunity to evaluate the safety of systems and practices with IV push medication use in adults.

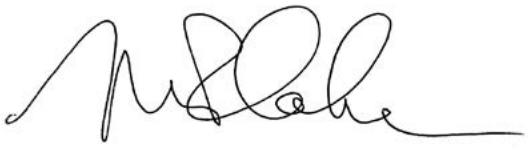
This analysis tool is based on the recommendations found in the ***ISMP Guidelines for Safe Practice of Adult IV Push Medications***. The items for this targeted evaluation were assembled and reviewed for relevance against current literature and professional standards, error reports from ISMP's National Medication Errors Reporting Program (MERP), and thorough external review by select medication safety practitioners.

Healthcare facilities that complete the ***ISMP Gap Analysis Tool for Safe IV Push Medication Practices*** will be able to identify specific challenges and opportunities for improvement as well as track their experiences over time. Use of the GAT will also help providers evaluate their current compliance with local policies and procedures for the management of IV push medications, as well as some of the required standards set forth by various state and federal regulatory agencies, such as the Centers for Disease Control and Prevention and the Centers for Medicare & Medicaid Services. Healthcare facilities that submit their findings to ISMP anonymously via a secure internet portal by **March 31, 2019 Midnight ET** will be able to obtain a gap analysis total score. After close of a submission period and ISMP analysis, participants will also have access to aggregate data so that they can compare their facility's experiences to the experiences of demographically similar healthcare facilities.

In addition to the usual high standard of confidentiality associated with any information submitted to ISMP, we are also a federally-recognized patient safety organization (PSO). If information for the GAT is collected within the health system's patient safety evaluation system and submitted to ISMP as patient safety work product, the information is granted protection from discovery in connection with a federal, state, or local civil, administrative, or disciplinary proceeding. No contract with ISMP is required for this legal protection.

We encourage you to participate in this important activity by completing the GAT as directed in the instructions enclosed and by submitting your findings anonymously to ISMP. We welcome the opportunity to work with you as you assess the safety of adult IV push medications in your facility!

Warm regards,



Michael R. Cohen, RPh, MS, ScD (hon), DPS (hon), FASHP
President, ISMP

Purpose

The ***ISMP Gap Analysis Tool for Safe IV Push Medication Practices*** is designed to:

- Heighten healthcare practitioners' awareness of safe medication systems and practices associated with intravenous (IV) push medication use in adult patients
- Assist healthcare practitioners with identifying and prioritizing opportunities for reducing patient harm when preparing, dispensing, and administering IV push medications in adults
- Create a baseline of national efforts to enhance safety when acquiring, preparing, dispensing, and administering IV push medications in adults

ISMP is not a standard setting organization. As such, the items in this tool are not purported to represent a minimum standard of practice and should not be considered as such. In fact, some of the items represent innovative practices and system enhancements that are not widely implemented in healthcare facilities today. However, their value in reducing errors is grounded in scientific research and/or expert analysis of errors with IV push medications and their causes. Like the current Guidelines, the scope of this tool is limited to adult patients. While some of the items contained within this GAT may apply to the safe use of IV push medications in neonatal and/or pediatric populations, due to the unique nature and dosing of medications required for these patients, safe IV push medication practices specifically for the neonatal and pediatric populations are not addressed in this GAT.

Instructions for Completing the Gap Analysis Tool (GAT)

It is important that each facility within a multifacility system complete the GAT individually. For example, a health system should submit one completed GAT for each of its hospitals, as well as separate evaluations for each of its other sites (e.g., an ambulatory infusion center, surgical center, and/or ambulatory practice sites).

1. Access the GAT and related materials at www.ismp.org/node/1188

» Create a username and password

» Save your username and password to complete the tool and to gain access to your facility's results

2. Establish a team for the gap analysis

Establish a core interdisciplinary team consisting of a variety of practitioner types with knowledge of IV push medication use practices to complete the gap analysis. Consider the following participants:

» Senior leader, ideally a chief nurse or chief operating officer

» Nurse managers/directors representing different care settings

» Anesthesia provider(s)

» Frontline nurses representing different care settings

» Frontline technician who administers IV push medications

» Pharmacy director

» Staff pharmacist(s)

» Medication safety or patient safety officer/manager

» Risk management and quality improvement professional(s)

Choose a team leader from among the core team. The team leader and core team should participate in the review of the demographic questions as well as be present during item review.

Prior to the team meeting(s), team members should be provided with sufficient time to review items in this tool, and be charged with the responsibility to evaluate, accurately and honestly, the status of IV push medication systems and practices in your facility. **Because IV push medication use is a complex, interdisciplinary process, the value and accuracy of this tool is significantly reduced if it is completed by a single discipline.**

3. Read the instructions and provide the demographic questions, key definitions, items, and frequently asked questions (FAQs) to team members

Read and review the instructions, demographic questions, key definitions, items, and FAQs before beginning the gap analysis process. The team leader may want to provide each core team member with either a hardcopy or electronic version of the tool, including the key definitions, and FAQs for review before the first team meeting. Copies of these materials can be found at: www.ismp.org/node/1188.

4. Choose an option for completing the tool

There are two options for completing the demographic questions and the GAT.

- **Option 1:** Print and use a PDF copy of the demographic questions and the GAT to share with team members. Complete the sections of the demographic form. Fill in your choice (A through D, or Not Applicable) for each item of the GAT. Have a team member submit the facility's responses to ISMP online to receive a score.
- **Option 2:** Use the online form found at www.ismp.org/node/1188 to view the demographic questions and GAT items at team meetings, and select your choice (A through D, or Not Applicable) for each item, while saving your entered information between meetings. Submit your facility's responses to ISMP using the online form to receive a score.

5. Verify and enter demographic information

In the GAT online, you must first complete and submit the general demographic questions before gaining access to the GAT items. The demographic questions do not ask for any contextually identifiable information. Completed demographic data will only be used to analyze the aggregate findings from the tool and allow demographically similar facilities to compare themselves to others. All facilities submitting GAT data to ISMP for a score must complete the demographic questions.

For the first team meeting, convene the core members to complete the general demographic questions. Log onto the GAT link using your facility's username and password and enter demographic responses online.

6. Convene team meeting(s) to complete the items in the GAT

Once the demographic questions have been completed, begin to consider and respond to the items in the tool. Discuss each item and evaluate your facility's success with implementing the item.

Because the responses to the gap analysis should be based on current practice, not what is in policies or what ought to occur, the core team members should directly observe and as necessary hold small group conversations with frontline staff involved in any of the aspects of IV push medication use. For example, including feedback from a radiology technician who prepares and administers IV push medications would be equally as appropriate as gaining insight from frontline nurses and anesthesia providers. Focusing on a systems-based approach to identifying latent failures and deficiencies, rather than blaming individuals for not following a policy, provides an opportunity for leaders to demonstrate that they understand and practice the principles of a safe and just culture.

As necessary, investigate and verify the level of implementation with other healthcare practitioners outside your team. When a consensus on the level of implementation for each item has been reached, select the appropriate choice (A through D, or Not Applicable), using the following scoring key and guidelines:

Scoring Key

A	There has been no activity to implement this item.
B	This item has been formally discussed and considered, but it has not been implemented.
C	This item has been partially implemented in some or all locations or fully implemented in some locations.
D	This item has been fully implemented in all locations.

Facilities may want to consider assigning an individual to record any discussion generated around each item and the rationale behind the selected choice. This information, meant for internal use only, can assist the team when reviewing scores for individual items or reassessing your facility at a later date. This information will provide insight into why the choice was selected.

The GAT online form can be accessed at any time by logging into your facility's account with your username and password, and if necessary, responses can be saved between meetings.

Important Choice Selection Guidelines

For items with multiple components in a single item: Full implementation (choice of D) is evidenced **only if all components** are **present for all** patients, orders, drugs, or staff. If only one or some of the components have been partially implemented in all patients, orders, drugs, or staff, **or** fully implemented for only some patients, orders, drugs, or staff, responses should not exceed level C.

For items with an option of "Not Applicable": Select "Not Applicable" only if your facility meets the "Not Applicable" scoring guideline text provided for that item.

***If you have questions about a term found in* SMALL CAPITAL FONT**, refer to the Key Definitions located in the right-hand column of the online form, or on page 14 of this document.

If you need clarification about an item, look for a frequently asked question (FAQ) symbol. FAQs are available in the online version, or on page 15 of this document.

If you need additional assistance, submit a question to ISMP using either the "Contact Us" link on the ISMP website www.ismp.org/contact, (and choose self assessments) or use the "Need help?" link found on the online form.

7. Submit your facility's GAT responses to ISMP using the secure online form

Once you have answered all of the items, choose the "submit" button to log your responses in the ISMP database and obtain a score. Following the submission deadline, further information will be provided about gaining access to the national results for comparison.

To submit your responses to ISMP online and receive a score, please go to: www.ismpassessments.org/iv_push.

8. Compare your facility's results to the national data

At the end of a data submission period and analysis of the data, facilities that submitted their GAT to ISMP will be able to log into their GAT account in order to obtain aggregate results for which to make comparisons. Once the data submission period is over, facilities can feel free to access the GAT at any time to re-evaluate their IV push practices and monitor improvements.

Security and Protection of GAT Information Submitted to ISMP

All information submitted to ISMP is stored in a secure database maintained solely by ISMP. All information is submitted anonymously.

Although demographic information is collected as part of the aggregate evaluation process, ISMP will NOT be able to identify individual facilities that have entered and/or submitted information. Further, the database does not allow viewing of demographic information associated with individual information. All information is contextually de-identified, and the demographics are used only for aggregate data reports. Usernames and passcodes required for submitting information to ISMP are created by the facilities and can be as non-descriptive as desired by the facility.

In addition to the usual high standard of confidentiality associated with any information submitted to ISMP, we would also like to remind participants that ISMP is a federally certified patient safety organization (PSO). If information is collected within the facility's patient safety evaluation system and submitted to ISMP as patient safety work product, the information is granted protection from discovery in connection with a federal, state, or local civil, administrative, or disciplinary proceeding. No contract with ISMP is required for this legal protection. Further guidelines regarding submitting information to ISMP as a PSO can be found on our website at: www.ismp.org/report-error/pso. Please contact ISMP by email ismpinfo@ismp.org if you have any questions about this topic.

For more information regarding ISMP's **Guidelines for Safe Practice of Adult IV Push Medications**, go to: www.ismp.org/guidelines/iv-push.

Gap Analysis for Safe IV Push Medication Practices

Answer all questions below to complete the tool. Please consider the following response choices for each of the items below:

Scoring Key

A	There has been no activity to implement this item.
B	This item has been formally discussed and considered, but it has not been implemented.
C	This item has been partially implemented in some or all locations or fully implemented in some locations.
D	This item has been fully implemented in all locations.

Note: A "Not-applicable" choice will be offered with explanatory text for some items. Only answer "N/A" if your organization meets the listed criteria.

ACQUISITION AND DISTRIBUTION OF ADULT IV PUSH MEDICATIONS		A	B	C	D
1.	The facility purchases **READY-TO-ADMINISTER** injectable medications for **IV PUSH** use when they are available.				
2.	Adult **IV PUSH** medications are dispensed in a **READY-TO-ADMINISTER** form (to minimize the need for manipulation and product re-labeling outside of the **PHARMACY STERILE COMPOUNDING AREA**).				
3.	Only commercially-available or pharmacy-prepared, prefilled syringes of an appropriate IV solution are used to **FLUSH** and **LOCK VASCULAR ACCESS DEVICES (VAD)**.				
4.	The facility has designed and implemented an interdisciplinary plan to manage drug shortages that have the potential to impact **IV PUSH** medication use.				

A	No activity to implement
B	Considered, but not implemented
C	Partially implemented in some or all locations
D	Fully implemented in all locations

ASEPTIC TECHNIQUE

		A	B	C	D
5.	Appropriate hand hygiene is used *prior to* the **PREPARATION** and administration of an **IV PUSH** medication or solution.				
6.	A new syringe (and needle as necessary) is used for every **IV PUSH** injection.				
7.	The medication access diaphragm on a vial or neck of an ampule is disinfected with facility-defined disinfectant solution and allowed to air dry prior to accessing an **IV PUSH** medication or solution.				
8.	The IV access port, needleless connector, or other **VASCULAR ACCESS DEVICE (VAD)** is disinfected with facility-defined disinfectant solution and allowed to air dry prior to administration of an **IV PUSH** medication or solution.				
9.	Personal protective equipment (PPE) is used if contact and exposure to blood or bodily fluids are possible when administering an **IV PUSH** medication or solution.				
10.	Appropriate hand hygiene is used *after* the **PREPARATION** and administration of an **IV PUSH** medication or solution.				

PRACTITIONER PREPARATION

		A	B	C	D
11.	**IV PUSH** medications are withdrawn from glass ampules using a filter needle or straw.				
12.	**IV PUSH** medications are only diluted when recommended by the manufacturer, supported by evidence in peer-reviewed biomedical literature, or in accordance with approved institutional guidelines.				
13. **FAQ**	When **DILUTION** or **RECONSTITUTION** of an **IV PUSH** medication becomes necessary outside of the **PHARMACY STERILE COMPOUNDING AREA**, these tasks are performed immediately prior to administration. *Choose Not Applicable (N/A) if medication dilution or reconstitution never occurs outside of the pharmacy sterile compounding area.* ***If you choose N/A for this item, you must also choose N/A for items 13-17.***				

○ **Not applicable (N/A)**

A	No activity to implement
B	Considered, but not implemented
C	Partially implemented in some or all locations
D	Fully implemented in all locations

PRACTITIONER PREPARATION (CONT.)

		A	B	C	D
14.	When **DILUTION** or **RECONSTITUTION** of an **IV PUSH** medication becomes necessary outside of the **PHARMACY STERILE COMPOUNDING AREA**, these tasks are performed in a clean, uncluttered, and functionally separate location. *Choose Not Applicable (N/A) if medication dilution or reconstitution never occurs outside of the pharmacy sterile compounding area.* ***If you choose N/A for this item, you must also choose N/A for items 13-17.***				
		◯ **Not applicable (N/A)**			
15.	When **DILUTION** or **RECONSTITUTION** of an **IV PUSH** medication becomes necessary outside of the **PHARMACY STERILE COMPOUNDING AREA**, these tasks are performed using facility-approved, readily-available drug information resources. *Choose Not Applicable (N/A) if medication dilution or reconstitution never occurs outside of the pharmacy sterile compounding area.* ***If you choose N/A for this item, you must also choose N/A for items 13-17.***				
		◯ **Not applicable (N/A)**			
16.	When **DILUTION** or **RECONSTITUTION** of an **IV PUSH** medication becomes necessary outside of the **PHARMACY STERILE COMPOUNDING AREA**, these tasks are performed using sterile equipment and supplies. *Choose Not Applicable (N/A) if medication dilution or reconstitution never occurs outside of the pharmacy sterile compounding area.* ***If you choose N/A for this item, you must also choose N/A for items 13-17.***				
		◯ **Not applicable (N/A)**			
17.	When **DILUTION** or **RECONSTITUTION** of an **IV PUSH** medication becomes necessary outside of the **PHARMACY STERILE COMPOUNDING AREA**, **PREPARATION** instructions and access to the proper diluent are provided. *Choose Not Applicable (N/A) if medication dilution or reconstitution never occurs outside of the pharmacy sterile compounding area.* ***If you choose N/A for this item, you must also choose N/A for items 13-17.***				
		◯ **Not applicable (N/A)**			
18.	Outside of the **PHARMACY STERILE COMPOUNDING AREA**, **IV PUSH** medications are NOT withdrawn from commercially-available, cartridge-type syringes into another syringe for administration. *Choose Not Applicable (N/A) if your facility never supplies medications in cartridge-type syringes to any user.* ***If you choose N/A for this item, you must also choose N/A for item 19.***				
		◯ **Not applicable (N/A)**			

A	No activity to implement
B	Considered, but not implemented
C	Partially implemented in some or all locations
D	Fully implemented in all locations

PRACTITIONER PREPARATION (CONT.)

		A	B	C	D
19.	If your facility uses medication cartridge syringes, associated syringe cartridge holders are available to support intended administration without manipulation. *Choose Not Applicable (N/A) if your facility never supplies medications in cartridge-type syringes to any user.* ***If you choose N/A for this item, you must also choose N/A for item 18.***				
		◯ **Not applicable (N/A)**			
20.	**IV PUSH** medications are NOT **DILUTED** or **RECONSTITUTED** by drawing up the contents into a commercially-available, prefilled flush syringe of 0.9% sodium chloride.				
21.	When necessary to **PREPARE** more than one medication in a single syringe for **IV PUSH** administration, **PREPARATION** is limited to the **PHARMACY STERILE COMPOUNDING AREA**.				
22.	IV solutions, such as 0.9% sodium chloride injection, in containers intended for infusion, including minibags, are NEVER used as **COMMON-SOURCE CONTAINERS** outside of the **PHARMACY STERILE COMPOUNDING AREAS** to **PREPARE** IV flush syringes or to **DILUTE** or **RECONSTITUTE** medications for one or more patients in clinical care areas.				

LABELING

		A	B	C	D
23.	All practitioner-prepared syringes of **IV PUSH** medications or solutions are appropriately labeled (as defined by the facility), unless the medication or solution is **PREPARED** at the patient's bedside and immediately administered to the patient without any break in the process.				
24.	If the practitioner needs to **PREPARE** and administer more than one syringe of medication or solution to a single patient at the bedside, each medication or solution is **PREPARED** separately and immediately administered before **PREPARING** the next syringe **OR** each syringe is labeled as it is being **PREPARED** and prior to the **PREPARATION** of any subsequent syringes.				
25.	If a practitioner **PREPARES** one or more medications or solutions away from the patient's bedside, each syringe is immediately labeled, one at a time, before **PREPARING** the next medication or solution.				

A	No activity to implement
B	Considered, but not implemented
C	Partially implemented in some or all locations
D	Fully implemented in all locations

LABELING (CONT.)

		A	B	C	D
26.	Only labeled syringes for a single patient are brought to the bedside for administration.				
27.	Blank or printed, ready-to-apply labels, including sterilized labels, are provided to clinical units where needed, to support safe labeling practices.				
28.	Unattended, unlabeled syringes containing any type of solution are immediately discarded.				
29.	Empty syringes are never pre-labeled in anticipation of use.				

PRACTITIONER ADMINISTRATION

		A	B	C	D
30.	An appropriate, facility-defined, clinical and vascular access site assessment of the patient is performed *prior to* the administration of **IV PUSH** medications.				
31. FAQ	Barcode scanning or similar technology is used immediately prior to the administration of **IV PUSH** *medications* to confirm identification of both the patient and the medication, unless its use would result in a clinically significant delay and potential patient harm.				
32. FAQ	Barcode scanning or similar technology is used immediately prior to the administration of **IV PUSH** *flush solutions* to confirm identification of both the patient and the solution, unless its use would result in a clinically significant delay and potential patient harm.				
33.	**IV PUSH** medications and any subsequent IV flush are administered at the rate recommended by the manufacturer, supported by evidence in peer-reviewed biomedical literature, or in accordance with approved institutional guidelines.				
34.	An appropriate volume of the subsequent IV flush is used to ensure that the entire drug dose has been administered.				

A	No activity to implement
B	Considered, but not implemented
C	Partially implemented in some or all locations
D	Fully implemented in all locations

PRACTITIONER ADMINISTRATION (CONT.)

		A	B	C	D
35.	Once patency has been confirmed for a central venous access device using a 10 mL diameter-sized syringe filled with preservative-free 0.9% sodium chloride, **IV PUSH** administration of the medication is given in a syringe appropriately sized to measure and administer the required dose. *Choose Not Applicable (N/A) for this item if your organization NEVER manages patients with central venous access devices.*				
		◯ **Not applicable (N/A)**			
36.	When administering **IV PUSH** medications through an existing IV infusion line, a needleless connector that is proximal (closest) to the patient is used, unless contraindicated in current evidence-based literature, or if the proximal site is inaccessible for use, such as during a sterile procedure.				
37.	An appropriate, facility-defined, clinical and vascular access site assessment of the patient is performed *following* the administration of **IV PUSH** medications.				
38.	All appropriate antidotes, reversal agents, and rescue agents are readily available in the clinical setting where **IV PUSH** medications are administered.				
39. FAQ	Standardized protocols and/or coupled order sets including directions for use permit the emergency administration all appropriate antidotes, reversal agents, and rescue agents used in the facility where **IV PUSH** medications are administered.				

DRUG INFORMATION RESOURCES

		A	B	C	D
40. FAQ	Standardized, facility-approved, **IV PUSH** medication resources are available at the point-of-care to guide the safe practice of **IV PUSH** medication administration.				
41.	Internal facility policies define **IV BOLUS** and **IV PUSH** terms.				
42. FAQ	Facility-approved **IV PUSH** medication resources are free of error-prone abbreviations and dose expressions.				

A	No activity to implement
B	Considered, but not implemented
C	Partially implemented in some or all locations
D	Fully implemented in all locations

COMPETENCY ASSESSMENT	A	B	C	D
43. The facility has clearly defined which practitioners have privileges to perform **IV PUSH** medication **PREPARATION**.				
44. The facility has clearly defined which practitioners have privileges to perform **IV PUSH** medication *administration*.				
45. FAQ Competency assessments for **IV PUSH** medication **PREPARATION** and administration are standardized across disciplines within the facility and validated *at the time of hire*.				
46. FAQ Competency assessments for **IV PUSH** medication **PREPARATION** and administration are standardized across disciplines within the facility and validated *on an ongoing basis*.				
47. FAQ Practitioners who prepare, dispense or administer **IV PUSH** medications receive ongoing information about associated risks and errors that have occurred in the facility and have been reported by external organizations, and about strategies to minimize these risks and errors.				

ERROR REPORTING	A	B	C	D
48. Adverse events, close calls, and hazardous conditions associated with **IV PUSH** medications are reported internally within the facility.				
49. Adverse events, close calls, and hazardous conditions associated with **IV PUSH** medications are reported in confidence to external safety organizations such as ISMP for shared learning.				
50. Internal and external information about adverse events, close calls, and hazardous conditions associated with **IV PUSH** medications is used for continuous quality improvement.				

To submit your responses to ISMP online and receive a score, please go to: **www.ismpassessments.org/iv_push**

Key Definitions

COMMON-SOURCE CONTAINER: A container of solution used to prepare multiple doses of a drug or flush solution for multiple patients

DILUTION (OR DILUTED, DILUTE): To add a diluent (e.g., normal saline, sterile water) to a solution of medication to make it less concentrated or to provide additional solution for ease of administration and titration, or to decrease the tissue irritation of a medication

FLUSH: The act of moving fluids, medications, blood and blood products out of a vascular access device into the bloodstream, ensuring delivery of those components and verifying patency

INTRAVENOUS PUSH OR IV PUSH: Direct manual administration of a medication using a syringe, usually under pressure, connected to an IV access device; this may include a manually administered IV "bolus" dose in an emergency

IV BOLUS: A discrete dose of medication or solution given rapidly over a short period of time

LOCK: The instillation of a solution into a vascular access device to maintain device patency during periods of non-use

PHARMACY STERILE COMPOUNDING AREA: A critical area within the ISO Class 5 primary engineering control where critical sites are exposed to unidirectional HEPA-filtered air, also known as first air

PREPARATION (OR PREPARE, PREPARED): The act of dilution, reconstitution, and/or measurement of drugs and solution doses

READY-TO-ADMINISTER: An injectable product containing the active drug in solution at the required concentration and volume, presented in the final container (syringe, infusion bag, or elastomeric device), and ready to be administered to the patient

RECONSTITUTE (OR RECONSTITUTION, RECONSTITUTED): The act of adding diluent to a powder to create a solution

VASCULAR ACCESS DEVICE (VAD): Catheters, tubes, or devices inserted into the vascular system including arteries, veins, and bone marrow

Frequently Asked Questions (FAQs)

Item # 13

What does "immediately prior" mean? How far in advance can an IV medication be diluted or reconstituted when done at the bedside?

Immediately prior indicates that there is no significant break in the process between drug **PREPARATION** and administration.

Items # 31 and 32

What is meant by the phrase "unless its use would result in a clinically significant delay and potential patient harm?"

Barcode scanning should always be employed unless there is an emergent situation, code blue, or patient crisis when the timeliness of **IV PUSH** medication administration is lifesaving, and the use of the barcode system prior to **IV PUSH** administration would cause enough of a delay to negatively impact the patient's outcome.

Item # 39

Why are standard protocols or coupled order sets necessary for the emergency administration of all appropriate antidotes, reversal agents, and rescue agents?

Orders are necessary for the administration of any medication, even those in an emergency. Therefore, it is important to have standardized protocols or linked orders for the administration of antidotes and rescue agents so qualified staff have the timely ability to treat a life-threatening reaction/overdose to **IV PUSH** medications without delay. Also, directions for use of the antidote or rescue agent should be available near where these agents are stored to avoid a delay or improper use during emergent administration of the agent.

Item # 40

What is meant by "standardized, facility-approved, IV PUSH medication resources?"

Standardized, facility-approved, **IV PUSH** medication resources include drug information for safe administration of **IV PUSH** medications including but not limited to the location of approved use and/or approved practitioner, drug name, approved dose range, type and amount of diluent, rate of administration, monitoring requirements, and rescue agents. These resources should be accessible online and immediately available to the frontline user for reference. Updates should be made to this document on a regular basis as new drugs are added to the formulary.

Item # 42

What is meant by the phrase "error-prone abbreviations and dose expressions?"

Refer to the ISMP website for the current list of error-prone abbreviations and dose expressions found at: https://www.ismp.org/recommendations/error-prone-abbreviations-list

Items # 45 and 46

What should be included in competency assessments associated with IV PUSH Medication Use?

IV PUSH competency assessments should cover elements of ISMP's **IV PUSH** Guidelines, facility-approved guidance for **DILUTION** practices, sterile compounding at the bedside, labeling, USP <797> immediate use, and Centers for Disease Control and Prevention (CDC) Safe Injection Practices.

Item # 47

What is an example of external information available to teach practitioners about medication errors associated with IV PUSH medication use?

ISMP newsletters and publications that focus on **IV PUSH** medication use should be shared as external sources of information. Many other external sources provide information on safe IV medication use including the Centers for Disease Control and Prevention (CDC) Safe Injection Practices, the American Society of Health-System Pharmacists (ASHP), and the Infusion Nurses Society (INS).

References

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About the Institute for Safe Medication Practices

The Institute for Safe Medication Practices (ISMP) is the only 501c (3) nonprofit organization devoted entirely to preventing medication errors. During its more than 30-year history, ISMP has helped make a difference in the lives of millions of patients and the healthcare professionals who care for them.

ISMP is known and respected as the gold standard for medication safety information. It also has served as a vital force for progress. ISMP's advocacy work alone has resulted in numerous necessary changes in clinical practice, public policy, and drug labeling and packaging.

Among its many initiatives, ISMP runs the only national voluntary practitioner medication error reporting program, publishes newsletters with real-time error information read and trusted throughout the global healthcare community, provides confidential consultation services to healthcare systems, and offers a wide range of unique educational programs, tools, and guidelines.

ISMP works with healthcare practitioners and institutions, regulatory and accrediting agencies, consumers, professional organizations, the pharmaceutical industry, and others to accomplish its mission. It is a federally certified patient safety organization (PSO), providing legal protection and confidentiality for patient safety data and error reports it receives.

As an independent watchdog organization, ISMP receives no advertising revenue and depends entirely on charitable donations, educational grants, newsletter subscriptions, and volunteer efforts to pursue its life-saving work. For more information or to make a donation that will help protect patients worldwide, visit ISMP online at www.ismp.org.

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