ISMP Best Practices for 2018-2019

Ann Jankiewicz, PharmD, BCPS, FASHP
Medication Safety Officer
Rush University Medical Center
Chicago, IL

The speaker has no conflicts of interest to disclose.

Are you familiar with the Institute for Safe Medication Practice (ISMP) Best Practices?

A. YES
B. NO

Have you worked on implementing an ISMP Best Practice?

A. YES
B. NO

Learning Objectives – Pharmacists and Technicians

- List the Institute for Safe Medication Practices (ISMP) 2018-2019 Targeted Medication Safety Best Practices.
- Review strategies for compliance with the ISMP recommendations.
- Identify barriers to achieving compliance with the ISMP recommendations.

*"The purpose of the Targeted Medication Safety Best Practices for Hospitals is to **identify, inspire, and mobilize widespread, national adoption of consensus-based best practices for specific medication safety issues** that continue to cause fatal and harmful errors in patients, despite repeated warnings in ISMP publications."*[1]

[1] http://www.ismp.org/Tools/BestPractices/TMSBP-for-Hospitalsv2.pdf

History of the ISMP Best Practices

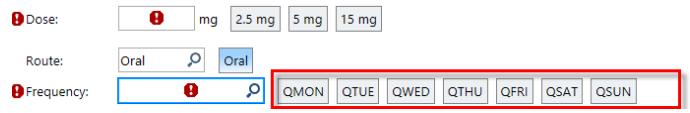
- ISMP Best Practices 2014-2015
  - 6 best practices
- ISMP Best Practices 2016-2017
  - #2 and #3 revised
  - #7-11 added
- ISMP Best Practices 2018-2019
  - #4 and #7 revised
  - #12-14 added
- Full compliance ranges from 38% to 94%

Best Practice #1: Dispense vincristine and other vinca alkaloids in a minibag (not syringe)

- To avoid the mistake of administering vincristine intrathecally (can be fatal)
- RUMC changed to minibags only for adults and peds in inpatient and outpatient pharmacies in 2014
- National Comprehensive Cancer Network (NCCN) started their "Just Bag It!" campaign for safe vincristine handling in 2016
- The Oncology Nursing Society (ONS) also endorsed this change in 2016 and has recommendations for safe administration
- At RUMC, we do the following
  - Gravity drip when given peripherally
  - Nurses to remain with the patient to monitor for extravasation
  - Flush line after infusion completed

BEST PRACTICE 2: METHOTREXATE

a) Use a weekly dosage regimen default for oral methotrexate in electronic systems when medication orders are entered.

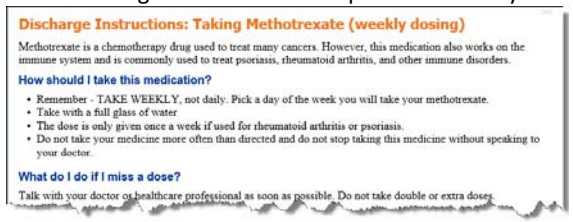


b) Require a hard stop verification of an appropriate oncologic indication for all daily oral methotrexate orders.

BEST PRACTICE 2: METHOTREXATE

c) Provide specific patient and/or family education for all oral methotrexate discharge orders.

- Developed one page patient discharge education sheet specific to weekly oral methotrexate



Discharge Instructions: Taking Methotrexate (weekly dosing)

Methotrexate is a chemotherapy drug used to treat many cancers. However, this medication also works on the immune system and is commonly used to treat psoriasis, rheumatoid arthritis, and other immune disorders.

How should I take this medication?

- Remember - TAKE WEEKLY, not daily. Pick a day of the week you will take your methotrexate.
- Take with a full glass of water
- The dose is only given once a week if used for rheumatoid arthritis or psoriasis.
- Do not take your medicine more often than directed and do not stop taking this medicine without speaking to your doctor.

What do I do if I miss a dose?

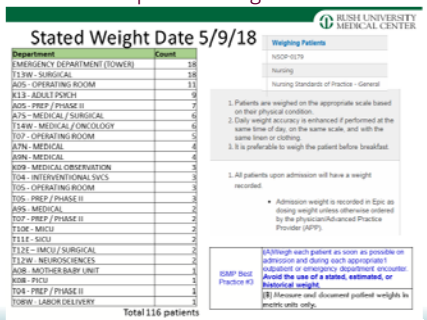
Talk with your doctor or healthcare professional as soon as possible. Do not take double or extra doses.

- To do—Add teaching point to Patient Education Activity so that teaching can begin during hospital stay
  - Include reminder to give patient/family discharge education sheet

BEST PRACTICE 3:

a) Weigh each patient as soon as possible on admission and during each appropriate outpatient or emergency department encounter. Avoid the use of a stated, estimated, or historical weight.

b) Measure and document patient weights in metric units only (kg).



Stated Weight Date 5/9/18

RUSH UNIVERSITY MEDICAL CENTER

Department	Count
EMERGENCY DEPARTMENT (TOWER)	18
T13W - SURGICAL	18
A05 - OPERATING ROOM	11
K13 - ADULT PSYCH	9
A05 - PREP / PHASE II	7
A7S - MEDICAL / SURGICAL	6
T14W - MEDICAL / ONCOLOGY	6
T07 - OPERATING ROOM	5
A7N - MEDICAL	4
A9N - MEDICAL	4
K09 - MEDICAL OBSERVATION	3
T04 - INTERVENTIONAL SVCS	3
T05 - OPERATING ROOM	3
T05 - PREP / PHASE II	3
A9S - MEDICAL	2
T07 - PREP / PHASE II	2
T10E - MICU	2
T11E - SICU	2
T12E – IMCU / SURGICAL	2
T12W - NEUROSCIENCES	2
A08 - MOTHER-BABY UNIT	1
K08 - PICU	1
T04 - PREP / PHASE II	1
T08W - LABOR DELIVERY	1

Total 116 patients

Weighing Patients

NSOP-0179

Nursing

Nursing Standards of Practice - General

1. Patients are weighed on the appropriate scale based on their physical condition.
2. Daily weight accuracy is enhanced if performed at the same time of day, on the same scale, and with the same linen or clothing.
3. It is preferable to weigh the patient before breakfast.

1. All patients upon admission will have a weight recorded.

- Admission weight is recorded in Epic as dosing weight unless otherwise ordered by the physician/Advanced Practice Provider (APP).

ISMP Best Practice #3

a)Weigh each patient as soon as possible on admission and during each appropriate outpatient or emergency department encounter. **Avoid the use of a stated, estimated, or historical weight.**

b) Measure and document patient weights in metric units only.

BEST PRACTICE 3: Weighing Patients

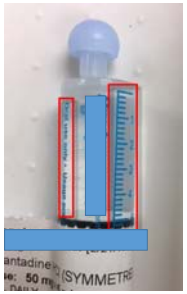
- Barriers to implementing Best Practice #3
  - Leadership buy-in
    - Inpatient and outpatient
    - Also buy-in from all disciplines (MD, RN, Engineering)
  - Cost
    - Buying new scales
    - Buying new carts with scales for the ED
  - Technology
    - Not able to lock down only entering weights in metric units
    - Not able to lock down all current bed scales and standing scales to metric only
  - Size of the organization
    - # of scales, bed scales needed
    - Many clinics with scales
  - We think in "pounds"

BEST PRACTICE 4: (REVISED) Ensure that all oral liquid medications that are not commercially available in unit dose packaging are dispensed by the pharmacy in an oral or ENFit syringe.

- RUMC--Oral liquids are dispensed by pharmacy in oral syringes marked with Oral Use Only
- Conversion to ENFit is in discussion stage
- Do not stock bulk oral solutions of medications on patient care units

BEST PRACTICE 5: Purchase oral liquid dosing devices (oral syringes/cups/droppers) that only display the metric scale.

- All medicine cups changed on nursing units and inpatient pharmacy October 2015
- All oral syringes have metric scale markings only



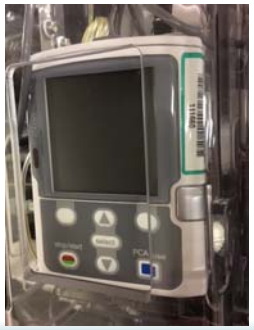
BEST PRACTICE 6: Eliminate glacial acetic acid from all areas of the hospital.

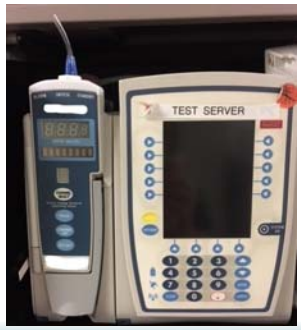
- Removed from RUMC inpatient pharmacy in 2013
- Purchase dilute acetic acid products

How does your institution keep neuromuscular blockers (rocuronium, cisatracurium, vecuronium) away from other medications?

BEST PRACTICE 7: (REVISED) Segregate, sequester, and differentiate all neuromuscular blocking agents (NMBs) from other medications, wherever they are stored in the organization.

BEST PRACTICE 8: Administer high-alert intravenous (IV) medication infusions via a programmable infusion pump utilizing dose error-reduction software (SMART PUMP)

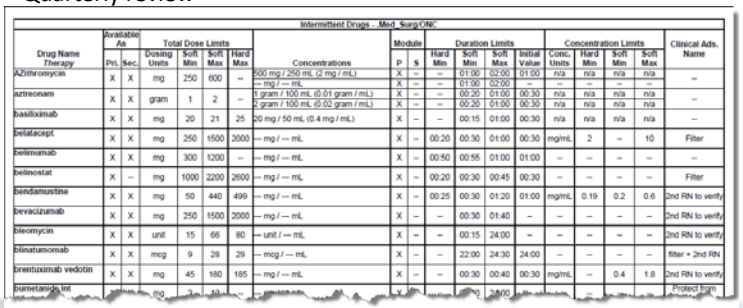




BEST PRACTICE 8: Administer high-alert intravenous (IV) medication infusions via a programmable infusion pump utilizing dose error-reduction software

Drug Library—Guardrails

- Quarterly review

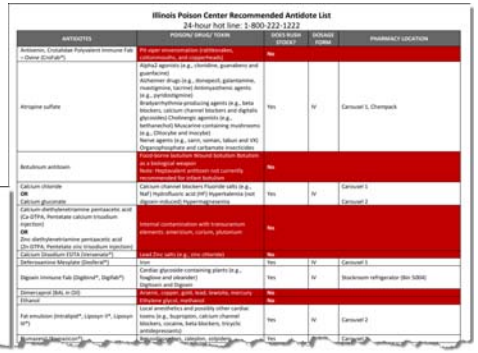


Intermittent Drugs - Med_Surg/CNC

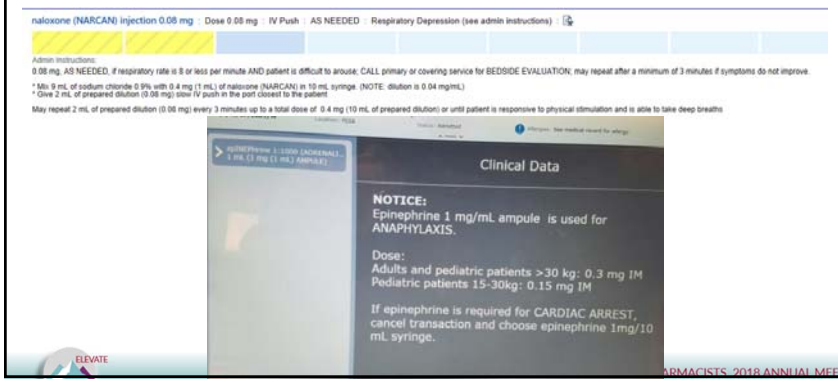
Drug Name Therapy	Available As Prn.	Sec.	Total Dose Limits Dosing Units	Soft Min	Soft Max	Hard Max	Concentrations	Module P	S	Duration Limits Hard Min	Soft Min	Soft Max	Initial Value	Concentration Limits Conc. Units	Hard Min	Soft Min	Soft Max	Clinical Advs. Name
AZithromycin	X	X	mg	250	600	--	500 mg / 250 mL (2 mg / mL)	X	--	--	01:00	02:00	01:00	n/a	n/a	n/a	n/a	--
							-- mg / -- mL	X	--	--	01:00	02:00	--	--	--	--	--	
aztreonam	X	X	gram	1	2	--	1 gram / 100 mL (0.01 gram / mL)	X	--	--	00:20	01:00	00:30	n/a	n/a	n/a	n/a	--
							2 gram / 100 mL (0.02 gram / mL)	X	--	--	00:20	01:00	00:30	n/a	n/a	n/a	n/a	
basiliximab	X	X	mg	20	21	25	20 mg / 50 mL (0.4 mg / mL)	X	--	--	00:15	01:00	00:30	n/a	n/a	n/a	n/a	--
belatacept	X	X	mg	250	1500	2000	-- mg / -- mL	X	--	00:20	00:30	01:00	00:30	mg/mL	2	--	10	Filter
belimumab	X	X	mg	300	1200	--	-- mg / -- mL	X	--	00:50	00:55	01:00	01:00	--	--	--	--	--
belinostat	X	--	mg	1000	2200	2600	-- mg / -- mL	X	--	00:20	00:30	00:45	00:30	--	--	--	--	Filter
bendamustine	X	X	mg	50	440	499	-- mg / -- mL	X	--	00:25	00:30	01:20	01:00	mg/mL	0.19	0.2	0.6	2nd RN to verify
bevacizumab	X	X	mg	250	1500	2000	-- mg / -- mL	X	--	--	00:30	01:40	--	--	--	--	--	2nd RN to verify
bleomycin	X	X	unit	15	66	80	-- unit / -- mL	X	--	--	00:15	24:00	--	--	--	--	--	2nd RN to verify
blinatumomab	X	X	mcg	9	28	29	-- mcg / -- mL	X	--	--	22:00	24:30	24:00	--	--	--	--	filter + 2nd RN
brentuximab vedotin	X	X	mg	45	180	185	-- mg / -- mL	X	--	--	00:30	00:40	00:30	mg/mL	--	0.4	1.8	2nd RN to verify
bumetanide_Int			mg					X	--									Protect from

BEST PRACTICE 9: Ensure all appropriate antidotes, reversal agents, and rescue agents are readily available.

- Have standardized protocols and/or coupled order sets in place that permit the emergency administration of all appropriate antidotes, reversal agents, and rescue agents used in the facility.



BEST PRACTICE 9: Have directions for use/administration readily available in all clinical areas where the antidotes, reversal agents, and rescue agents are used.



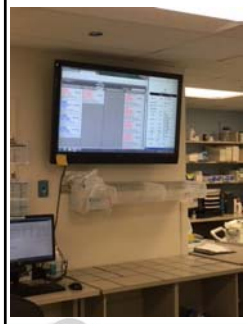
BEST PRACTICE 10: Eliminate all 1,000 mL bags of sterile water (labeled for "injection," "irrigation," or "inhalation") from all areas outside of the pharmacy.

- Respiratory Therapy stocked 1L Sterile Water for Inhalation
  - Request to change to 2L bag
    - Concern if 2L bag too heavy for the ventilators
    - Switched to 2L bags--completed March 2016
- Malignant Hyperthermia kits
  - Contain 1L Sterile Water bags for reconstitution of dantrolene
  - Not enough room for 2L bag
  - Kits are locked in 3 OR locations
    - Kit locks are checked daily by pharmacy tech and monthly by pharmacist
    - Pharmacist is notified when kit is used to aid in preparation

How does your institution make sure the right ingredients in the right amounts are added to IV bags/ syringes during sterile IV preparation?

A. Syringe pull back method
B. Pharmacist watching IV preparation process
C. IV workflow software (use of cameras/ barcode scanning)
D. IV robot

BEST PRACTICE 11: When compounding sterile preparations, perform an independent verification to ensure that the proper ingredients (medications and diluents) are added, including confirmation of the proper amount (volume) of each ingredient prior to its addition to the final container.



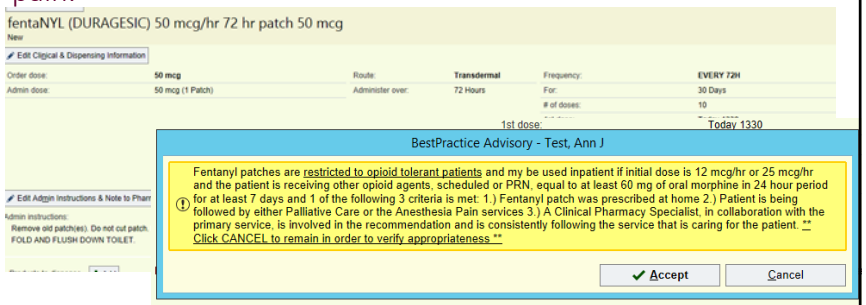
IV workflow software:

- Displays key preparation details, including dose calculations, preparer, products used, lot numbers and expiration dates
- Visualization of each preparation step (camera/pictures)
- Includes barcode scanning of all products used in preparation

BEST PRACTICE 11: Sterile IV Preparation

- Barriers to Best Practice #11
  - Cost of IV workflow management systems
  - Resources
    - Pharmacist to staff IV room at all times
    - Time for training all staff to use the IV workflow software
  - Space for cameras, computers
  - Technology
    - Resources to implement and support new systems

BEST PRACTICE 12: Eliminate the prescribing of fentaNYL patches for opioid-naïve patients and/or patients with acute pain.



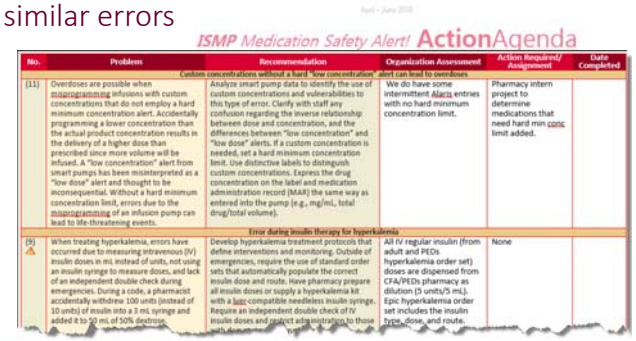
To do—ability to document the patient's opioid status in the health record

- Have this information easy to find when prescribing

BEST PRACTICE 13: Eliminate injectable promethazine from the hospital.

- Removed the promethazine 50 mg/mL strength in October 2006
  - After the ISMP alert describing life and limb-threatening extravasations
- Later removed the 25 mg/mL in January 2007

BEST PRACTICE 14: Seek out and use information about medication safety risks and errors that have occurred in other organizations outside of your facility, and take action to prevent similar errors


ISMP Medication Safety Alert! ActionAgenda

No.	Problem	Recommendation	Organization Assessment	Action Required/ Assignment	Date Completed
	Custom concentrations without a hard "low concentration" alert can lead to overdoses				
(11)	Overdoses are possible when misprogramming infusions with custom concentrations that do not employ a hard minimum concentration alert. Accidentally programming a lower concentration than the actual product concentration results in the delivery of a higher dose than prescribed since more volume will be infused. A "low concentration" alert from smart pumps has been misinterpreted as a "low dose" alert and thought to be inconsequential. Without a hard minimum concentration limit, errors due to the misprogramming of an infusion pump can lead to life-threatening events.	Analyze smart pump data to identify the use of custom concentrations and vulnerabilities to this type of error. Clarify with staff any confusion regarding the inverse relationship between dose and concentration, and the differences between "low concentration" and "low dose" alerts. If a custom concentration is needed, set a hard minimum concentration limit. Use distinctive labels to distinguish custom concentrations. Express the drug concentration on the label and medication administration record (MAR) the same way as entered into the pump (e.g., mg/mL, total drug/total volume).	We do have some intermittent Alaris entries with no hard minimum concentration limit.	Pharmacy intern project to determine medications that need hard min conc limit added.	
	Error during insulin therapy for hyperkalemia				
(9)	When treating hyperkalemia, errors have occurred due to measuring intravenous (IV) insulin doses in mL instead of units, not using an insulin syringe to measure doses, and lack of an independent double check during emergencies. During a code, a pharmacist accidentally withdrew 100 units (instead of 10 units) of insulin into a 3 mL syringe and added it to 50 mL of 50% dextrose.	Develop hyperkalemia treatment protocols that define interventions and monitoring. Outside of emergencies, require the use of standard order sets that automatically populate the correct insulin dose and route. Have pharmacy prepare all insulin doses or supply a hyperkalemia kit with a luer compatible needleless insulin syringe. Require an independent double check of IV insulin doses and correct administration to those	All IV regular insulin (from adult and PEDs hyperkalemia order set) doses are dispensed from CFA/PEDs pharmacy as dilution (5 units/5 mL). Epic hyperkalemia order set includes the insulin type, dose, and route.	None	

To do—share this information with all staff

What are some of the barriers at your institution in implementing the ISMP Best Practices?

Barriers to implementation

- Staff and/ or management do not perceive a risk with current workflow
- Resources to work on each of the Best Practice projects
- Limitations with the electronic health record
  - Computer system itself cannot support the change
  - Not enough IT support to work on the project
  - Competing resources for the IT support
- Not happy with partial implementation
- Not sure how to implement the best practice without technology
- Space/ equipment limitations
  - Enough physical space, refrigerator space

ISMP Best Practices for 2018-2019: Are we there yet?

Post-test Questions

1. Which are examples of ISMP Best Practices for 2018-2019.
   A. Provide patient education for all warfarin discharge orders.
   B. Eliminate glacial acetic acid from all areas of the hospital.
   C. Avoid the use of stated, estimated, or historical weights.
   D. B and C

2. Lack of leadership buy-in, cost and technology are barriers to implementing the ISMP Best Practices.
   A. True
   B. False

3. The ISMP Best Practices have been fully implemented in greater than 90% of hospitals.
   A. True
   B. False

4. Some ways to segregate, sequester and differentiate all neuromuscular blocking agents from other medications, wherever they are stored in the organization, include:
   A. Use of lidded bins
   B. Use of cubies or lock-lidded bins in Pyxis
   C. Store neuromuscular blocking agents in alphabetical order on shelves
   D. Add an auxiliary sticker stating “Warning: Paralyzing Agent—causes respiratory arrest, patient must be ventilated” to bins where these are stored
   E. A and B
   F. A, B, and D

5. Vincristine should be prepared in minibags instead of an IV syringe to avoid what safety issue?
   A. Patients receiving the medication on a daily basis instead of a weekly basis
   B. Patients receiving the medication as an intrathecal injection instead of an IV injection
   C. Patients receiving the medication dosed using the wrong weight
   D. Patients receiving the medication infused at the wrong rate