

## Standardize 4 Safety Webinar Series

1. Background and purpose of the Standardize 4 Safety Initiative – Let’s go back in time
2. A look at current and future S4S medication lists – Where are we now?
3. How the S4S lists are being evaluated – What does the data say?
4. Challenges with implementation of the S4S Initiative – Jumping over the hurdles
5. How to ensure successful implementation of the S4S initiative – Gather your tools
6. **Implementation of the S4S Initiative at two Academic Medical Center – An adoption story**



## Implementing Standardize 4 Safety Standards: Adoption Stories

**Mary Ann Kliethermes, Pharm.D.**  
Director, Medication Safety and Quality ASHP

**Sean O’Neill, Pharm.D.**  
Chief Clinical Officer Bainbridge Health



## ASHP and Bainbridge Health Collaboration

- Goal of collaboration: to enhance the distribution, adoption, and sustainability of the Standardize 4 Safety Initiative
- Bainbridge Health unlocks the full value of intravenous medication data from infusion pumps to improve safety, drive standardization, and scale scarce clinical resources

1/13/2022  
Press Release

### **ASHP Innovation Center and Bainbridge Health Collaborate to Improve Patient Safety, Increase Use of Standardized Medication Concentrations in Health Systems**



## Learning Objective

- Understand the process and overcoming challenges to adopt Standardize 4 Safety concentrations



## A Discussion with:

Michael Dejos, PharmD, BCPS, DPLA  
Medication Safety Officer  
Methodist Le Bonheur Healthcare  
Memphis, Tennessee

Paul Milligan, Pharm.D., B.S.Pharm.  
System Medication Safety Pharmacist  
BJC HealthCare  
Saint Louis, Missouri

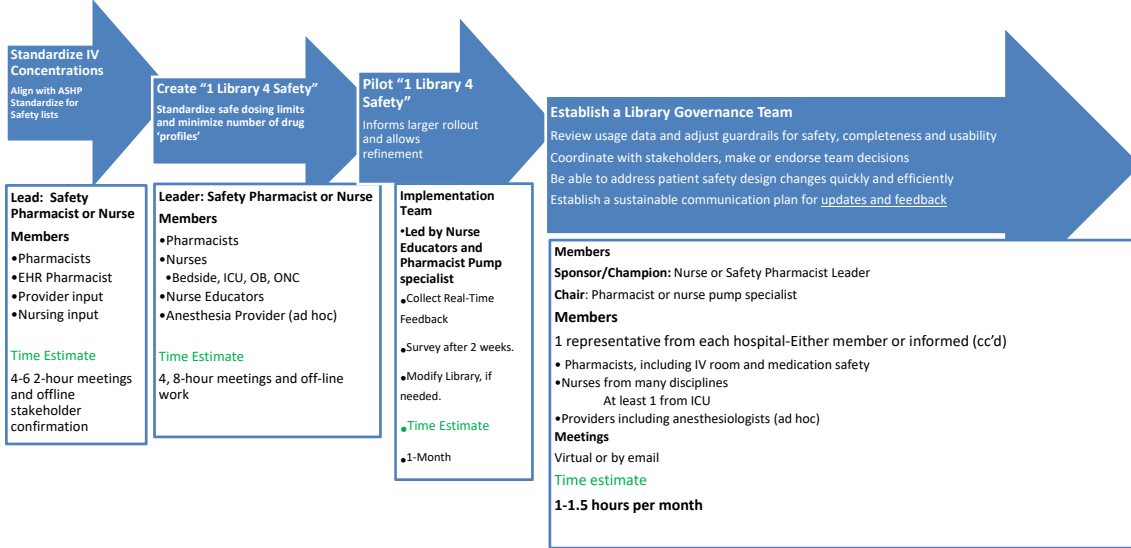


## Questions

- How do you get started adopting S4S?
- What were your major barriers?
- How has the adoption gone in acceptance, uptake and results?



# Pathway to Improved Smart Pump Usage and Governance



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## 2015 Current State

Infusions	# Hospitals	Conc/ml (n)	Fluid (n)	Amt / vol (n)	Volume in ml (n)	Notes
Eptifibatide Infusion	7	0.75 mg/ml (7)	premix (7)	75 mg/100 ml (7)	premix (7)	
Esmolol Infusion	8	10 mg/ml (8) 20 mg/ml (1)	250 (7) 100 (1) - central line ? (1)	2500 mg/250 ml (7) 2000 mg/100 ml (1) 10 mg/ml (1)	NS (7) ? (1)	
Famotidine Infusion	1	0.32 mg/ml (1)	NS (1)	80 mg/250 ml (1)	250 (1)	
Fenoldopam infusion	4	0.04 mg/ml (4)	NS (4)	10 mg/250 ml (3) 20 mg/500 ml (1)	250 (3) 500 (1)	
FentaNYL Infusion	11	8 mcg/ml (1) 10 mcg/ml (6) 25 mcg/ml (2) 50 mcg/ml (3)	NS (8) ? (2) undiluted (1)	2000 mcg/250 ml (1) 2500 mcg/250 ml (3) 2500 mcg/50 ml (1) 1000 mcg/100 ml (1) 5000 mcg/100 ml (1) 500 mcg/50 ml (1) 50 mcg/ml (1) 10 - 25 mcg/ml (2)	50 (3) 100 (2) 250 (4) ? (2)	mcg/ml: 8, 10, 25, 50 Some are CADD
Furosemide Infusion	11	1 mg/ml (8) 2 mg/ml (2) 4 mg/ml (1) 10 mg/ml (1)	NS (8) DSW (3) ? (1)	100 mg/100 ml (7) 200 mg/100 ml (2) 250 mg/250 ml (1) 1000 mg/250 ml (1) 10 mg/ml (1)	100 (9) 250 (2) ? (1)	

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## Example of tracking document

Yellow = ASHP standard concentration  
 Green = Both standards agree  
 Pink = P & T standard concentration

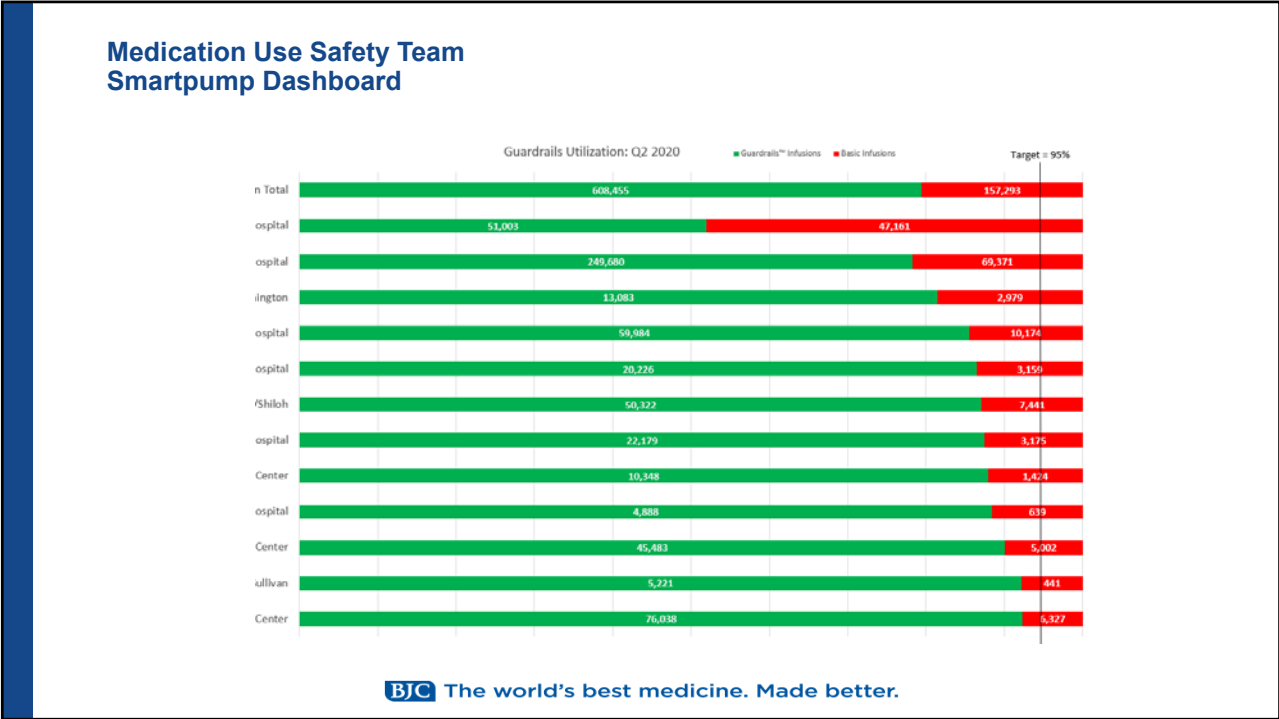
Drug	Conc. 1	Conc. 2	Conc. 3	Conc. 4	Dosing Units	Fluid	Amount/Vol.	Commercially Available
Esmolol	10 mg/mL	20 mg/mL			mcg/kg/min		2500 mg/250 mL (peripheral) 2500 mg/100 mL (central)	Yes
*ASHP Comments: 10 mg/mL for peripheral, 20 mg/mL for central. Most institutions use the 10 mg/mL premix but dosing ranges indicate the 20 mg/mL is more appropriate based upon fluid volumes.								
FentaNYL <sup>4</sup>	10 mcg/mL	50 mcg/mL			mcg/hour	NS	2500 mcg/50 mL 1000 mcg/100 mL 5000 mcg/100 mL 500 mcg/50 mL	No
*ASHP Comments: Ease of prep, can make 2500 mcg (50 mL) in 250mL to make 10 mcg/mL (need to remove volume of drug and overfill) or use straight drug of 50 mcg/mL								
Furosemide	1 mg/mL	2 mg/mL	10 mg/mL		mg/hour	NS	100 mg/100 mL	No, and the 10 mg/mL is administered undiluted

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## After all the discussion, and a final list was sent out.....

- Bumetanide – which will be the standard? Recommend 12.5 mg/50 ml
- Calcium chloride - change standard default to 8 gm/D5W 1000 ml and remove other options unless other facilities also use this? Also need option for 8 gm/NS 1000 ml for diabetic patients. These are both currently restricted at BJH to be ordered from within the CVVHDF with Citrate order set only
- Cangrelor Infusion – add this item. 0.2 mg/ml concentration (50 mg/NS 250 ml)
- Cisatracurium – consider changing the standard to 200 mg/NS 100 ml because it comes in a 200 mg vial
- Clevidipine – which one will be the standard? I am told that Medicare only pays for the 25 mg, so maybe that should be the standard?
- Dexmedetomidine – which will be the standard? BJH currently uses 50 ml in the OR and 100 ml outside of the OR.
- Diltiazem – which will be the standard? BJH uses 100 mg/100 ml due to issues with Dose Edge
- Dobutamine – will the standard be 1000 mg/D5W 250 ml with an option for 1000 mg/NS 250 ml?
- Dopamine – which will be the standard?
- Furosemide – discussed at last meeting. BJH clinicians would prefer 2 mg/ml concentration (200 mg/NS 100 ml)
- Ketamine – change standard to 1000 mg/NS 100 ml and remove 5 mg/ml option. I think most facilities have already agreed on this.
- Naloxone – OB uses 0.4 mg/NS 1000 ml. Can this be built as the standard concentration in the OB order set?
- Nicardipine – allow options for 50 mg/NS 100 ml (central line) and 50 mg/NS 500 ml (peripheral line)
- Phenylephrine – would like to add additional option for 50 mg/NS 500 ml
- Procainamide – change base solution from NS to D5W since there is only stability in D5W in the package insert
- Sodium Bicarbonate – no standard listed. Recommend 250 mEq/250 ml (undiluted)
- Terbutaline – no standard listed. Recommend 3 mg/3 ml (undiluted)
- Vasopressin – there are two concentrations listed as standard. Are you able to do this? One is for hypotension/shock (20 units/100 ml) and one is for GI bleed (100units/100 ml)
- Zidovudine - change base solution from NS to D5W since there is only stability in D5W in the package insert

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## Questions & Feedback



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[www.ashp.org/standardize4safety](http://www.ashp.org/standardize4safety)



