Introduction and Preliminary Survey Review

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Introduction

- Welcome!
- Purpose
  - Evaluate the safety of intravenous (IV) infusion systems used for medication administration
  - Contexts (cost, workforce, environment, etc...)
- Previous Consensus Conferences
  - Pharmacist, physician, and nurse experts
  - 1999
  - 2008
• Evaluated the relative safety of (non-electronic) drug delivery systems then available

• Decision-analysis method ranked 6 systems
  – Safety, cost, simplicity-of-use, and training required

• Highest scored: manufacturer-prepared, point-of-care activated, and pharmacy-based admixture systems

• Need for a combination of systems was discussed
  – Lack of availability of highly rated systems

Second Consensus Development Conference – 2008

- Ranked 5 systems, noting few major developments in availability of systems
  - Applicability, ease-of-use, regulatory compliance, cost, safety, and resources required
- Manufacturer-prepared ranked highest again
- Panel noted complexity of IV medication delivery had increased
  - No single system meets all needs and situations

IV Drug Delivery Since 2008...

- Regulatory and standards changes
  - Proposed revisions to USP <797> and <800>
  - Updates to National Patient Safety Goals
  - Passage of the 2013 Drug Quality and Security Act
  - Standardize for Safety

- Development and expansion of technology
  - IV workflow, interoperability and automation
  - Robotics

- Clinical challenges
  - Drug shortages
  - Pricing and access

PRELIMINARY SURVEY DATA
Results highlight evolutions in IV drug delivery system use

1. IV admixture use in health-systems is safer today than it was 5 years ago.  
   - Percentage Agree (2008): 76%  
   - Percentage Agree (2018): 90%  
   - (N)  

2. USP Chapter 797 has improved the safety of manually compounded admixtures.  
   - Percentage Agree (2008): 58%  
   - Percentage Agree (2018): 87%  
   - (N)  

3. The majority of US hospitals have standardized all possible IV admixture concentrations.  
   - Percentage Agree (2008): 20%  
   - Percentage Agree (2018): 26%  
   - (N)  

4. Health-systems today maximize their use of premixed, point-of-care activated and ready-to-use products.  
   - Percentage Agree (2008): 49%  
   - Percentage Agree (2018): 52%  
   - (N)

5. Smart pumps have improved the safety of intravenous drug administration at my facility. 76% (50)
8. Outsourcing intravenous admixtures is a safe practice. 57% (51)
9. Outsourcing intravenous admixtures is cost-effective. 59% (49)
10. My hospital utilizes bar-code patient verification technology for the administration of intravenous products. 45% (31)

- **Percentage Agree (2018)**
- **N = 31**

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<tr>
<th>Question</th>
<th>Percentage Agree</th>
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<td>6. My hospital evaluates error-reduction alerts regularly and determines if staff are responding to them appropriately.</td>
<td>68%</td>
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<td>7. My hospital does a comprehensive review and site visit of an outsourcing company as part of our due diligence when choosing a vendor.</td>
<td>65%</td>
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<td>11. In the past 5 years, my hospital administrators have been more willing to provide financial support for cleanroom changes.</td>
<td>74%</td>
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<td>12. My institution consistently uses electronic health record operability to interface between the intravenous pump and the electronic health record.</td>
<td>19%</td>
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13. My hospital uses an automated IV workflow management system to improve the safety and efficiency of the medication use process.

14. Although intravenous infusion pumps are consistently used, transitions of care may result in the use of alternative pumps. This transition can result in medication infusion errors.

15. My hospital has a proactive system in place to identify and mitigate diversion of intravenous products.

16. The majority of US hospitals have a complete understanding of the various factors that contribute to the cost-effectiveness of delivering safe IV admixtures to patients (i.e., product, staffing, waste).
17. My hospital is preparing for the updated revisions of USP scheduled to be released in December 2019.

18. My hospital has experienced a disruption of supply from manufacturers or outsourced (503B) compounding entities.

19. My hospital has experienced a patient safety event related to a supply disruption.

20. My hospital has shifted to using more IV push and less IVPB for intermittent IV medications.

Percentage Agree (2018)  N = 31

94%  97%  81%  71%
Summary Observations

• Respondents suggest IV admixture use is safer today than 5 years ago
  – 90% agree, improving from 76% in 2008

• Approximately 50% of respondents maximize pre-mix, POC-activated, ready-to-use products (no change from 2008)

• 45% agree outsourcing IV admixtures is cost-effective (59% in 2008)
  – No respondents (0%) had a complete understanding of factors that contribute to cost-effectiveness

• 97% of respondents experienced a supply disruption
  – 81% experienced a patient safety event related to a disruption
Call to Purpose!