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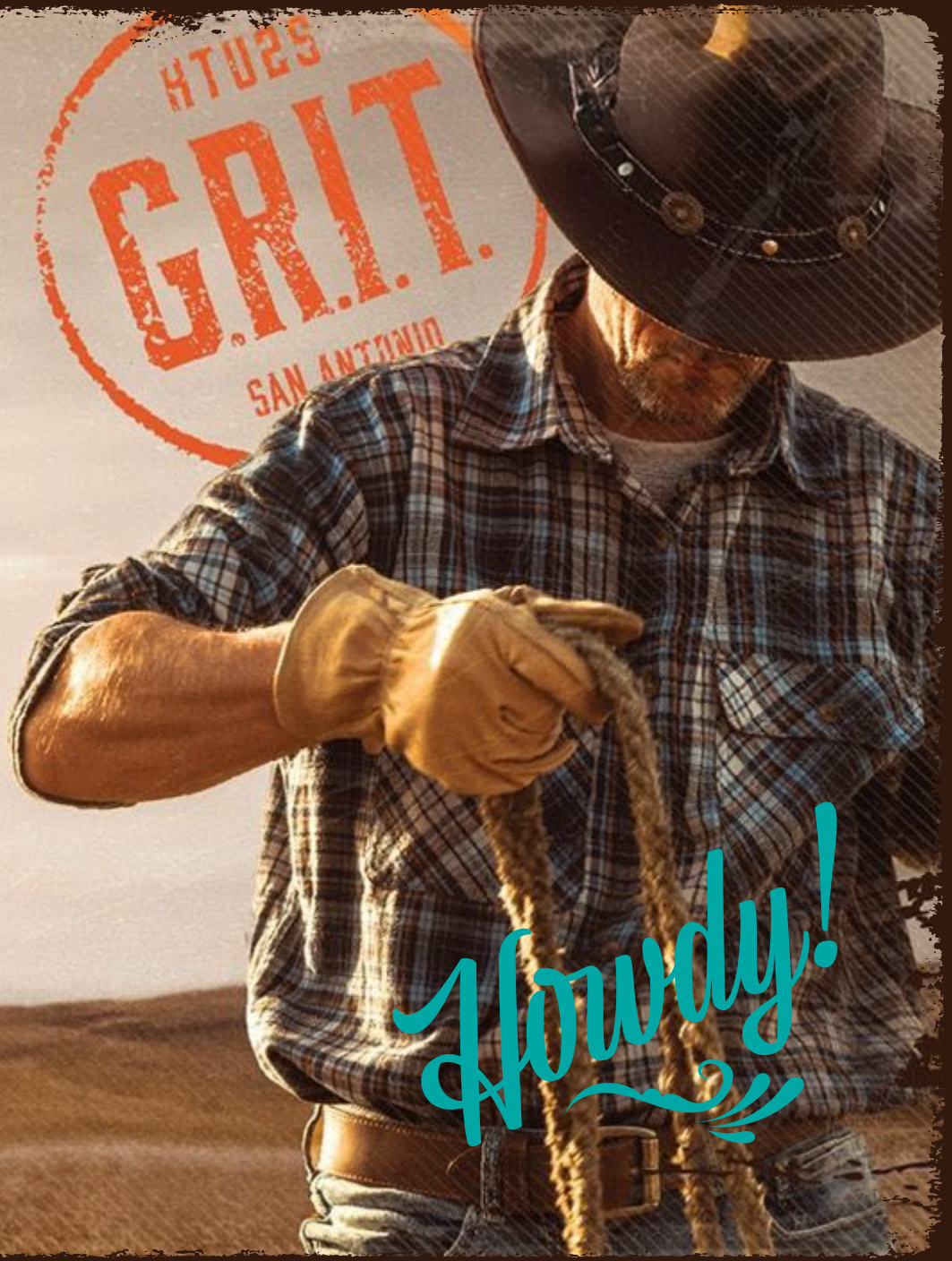
Standardization, an Elusive Dream to Catch for Multisite Acute Care Systems



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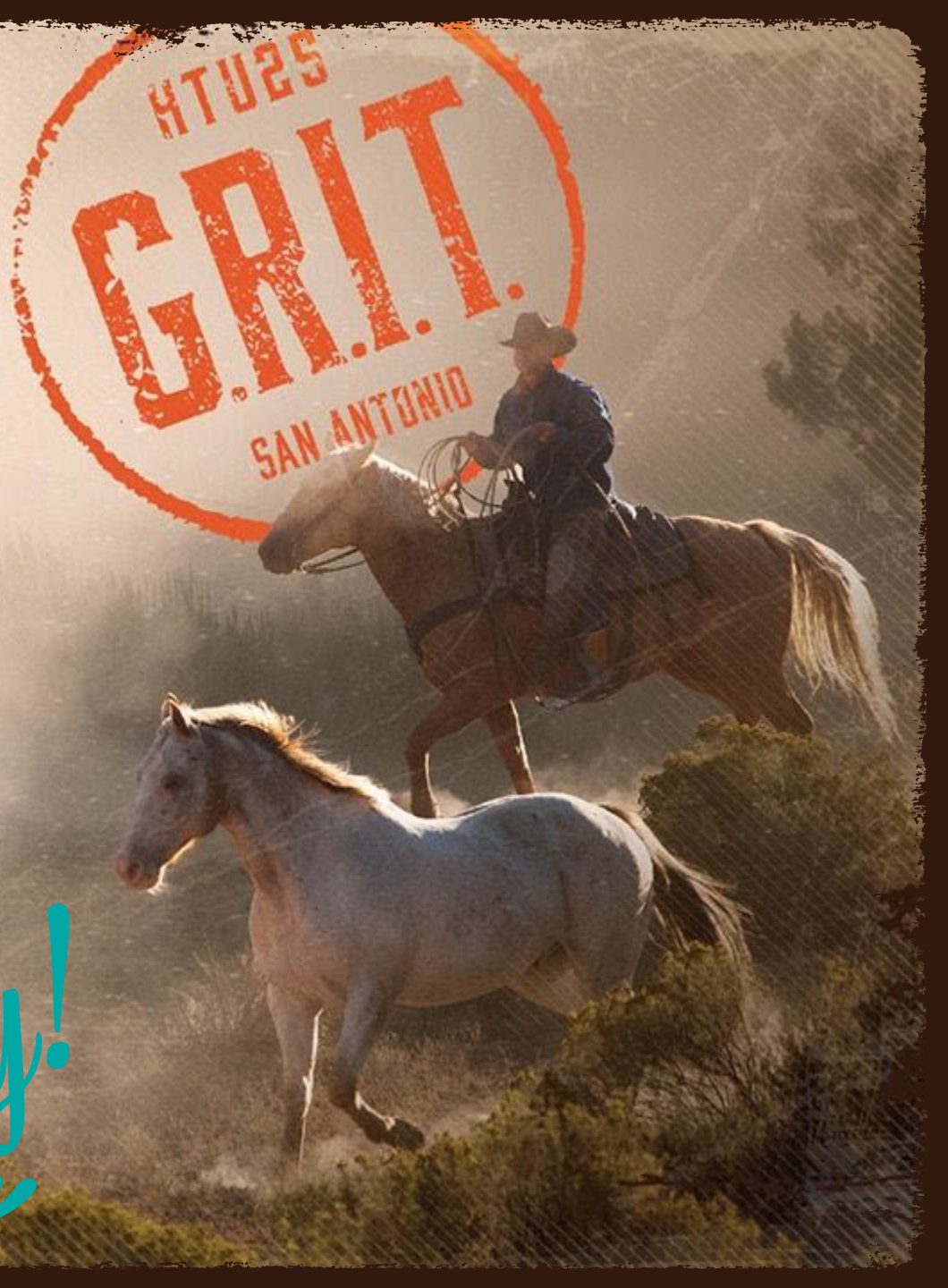
Standardization, an Elusive Dream to Catch for Multisite Acute Care Systems

Laurie Perkins, PharmD
Director, Clinical Pharmacy Operations
HealthTrust

Carley Warren, PharmD, BCPS, CPPS
Manager, Medication Safety
HCA Healthcare



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Learning Objectives

At the end of this session, participants should be able to:

- Recall current challenges in medication management system standardization.
- Recognize strategies to standardize medication management practices through effective planning and leadership.
- Identify real-world examples of benefits from standardized medication management practices at the facility or enterprise level.

Agenda

Welcome & Announcements	Carley Warren
Current Unavoidable Challenges in Standardization	
Effective Structures to Shepherd Subject Matter Experts	
Execution on Effective Communication Leading Change	Laurie Perkins
Case Example: IV Pumps Abbreviated Case Example: Formulary Management Standards	
Case Example: Independent Double Check Standards Abbreviated Case Examples: Antibiotic Indication Screens	Carley Warren
Closing Remarks with Q & A	Laurie Perkins

HCA Healthcare

HCA Healthcare is one of the nation's leading providers of healthcare services, comprised of approximately **2,400** ambulatory sites of care, including **190** hospitals, in **20** states and the United Kingdom.

By the numbers

~316K
colleagues

99K+
registered nurses

44K+
active and affiliated physicians

Ranked 207
in Fortune 500*

Other sites of care:

Surgery Ventures Powered by HCA Healthcare

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SARAH CANNON Fighting Cancer Together

PARALLON HCA Healthcare

GALEN COLLEGE OF NURSING

Poll Question #1

Which of the following is the hardest step in the process of creating standards with your current structure?

A. Completing discovery work
B. Identifying and recruiting subject matter experts
C. Recognizing key stakeholders
D. Implementing standards

Poll #1 Results

Which of the following is the hardest step in the process of creating standards with your current structure?

Turn to your neighbor, introduce yourself and share with them your challenge and a recent project where this challenge occurred.

UNAVOIDABLE CHALLENGES IN STANDARDIZATION & EFFECTIVE SHEPHERDING OF SUBJECT MATTER EXPERTS

Carley Warren, PharmD, BCPS, CPPS

Manager, Medication Safety

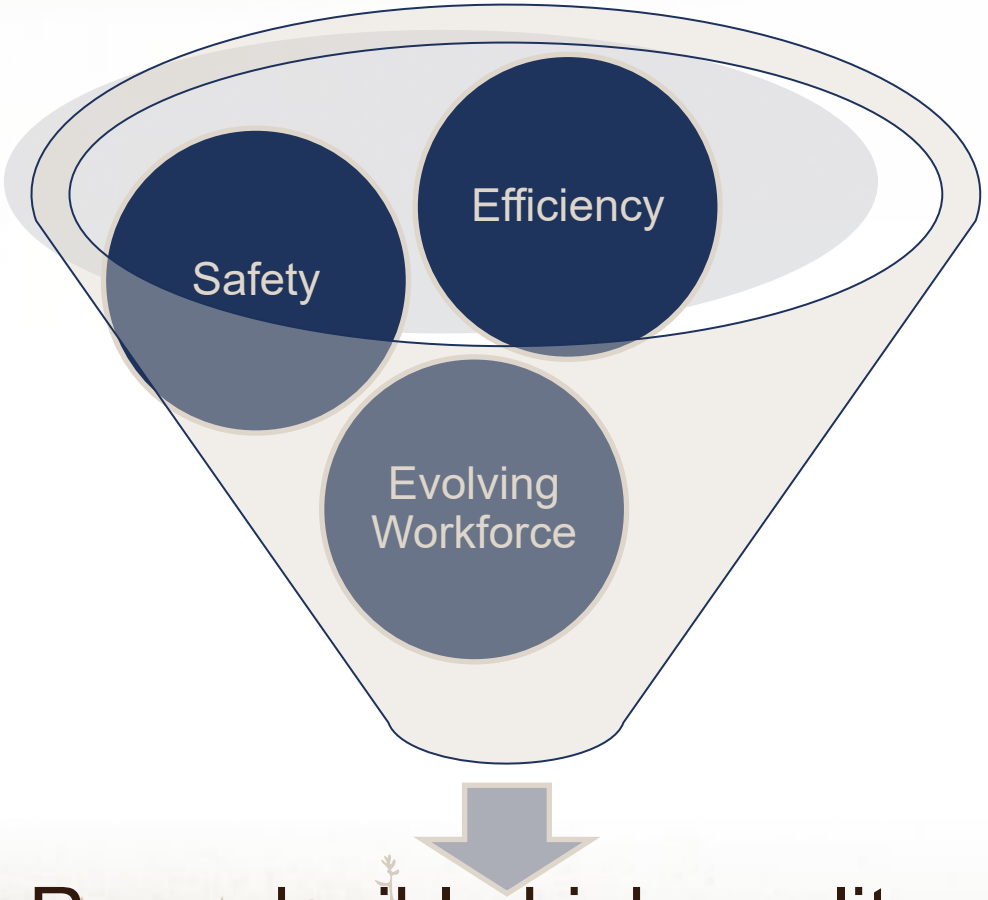
Medication Management System Challenges

Improving patient safety and quality of care through collaboration with interdisciplinary team

Procurement	Storage	Ordering/ Transcribing	Preparing/ Dispensing	Administration	Monitoring/ Evaluation
Manage inventory to ensure medications in utilization match smart pump library (i.e., concentrations)	Safe storage practices by utilizing dividers, labels, and clear organizational patterns	Incorporate mandatory “read back” procedures	Include indication on order/label	Utilize barcode medication administration technology	Ensure patients have appropriate monitoring orders
Conduct effective analysis to determine formulary stance	Determine appropriate care areas to store mediations outside of pharmacy	Optimize technology for accurate orders with helpful clinical decision support	Provide appropriate auxiliary labels with warnings	Implement independent double checks where appropriate	Monitor for signs/ symptoms of ADEs* related to medications given
Prior to procuring new medication determine if it needs additional safety measures	Signage for high-alert and look-alike sound-alike medications, especially same med multiple concentrations	Limit the use of verbal orders to reduce error	Use barcode scanning to increase reliability of right drug selection	Ensure effective utilization of smart infusion pump	Report and assess errors and near misses

*Adverse Drug Event (ADE)

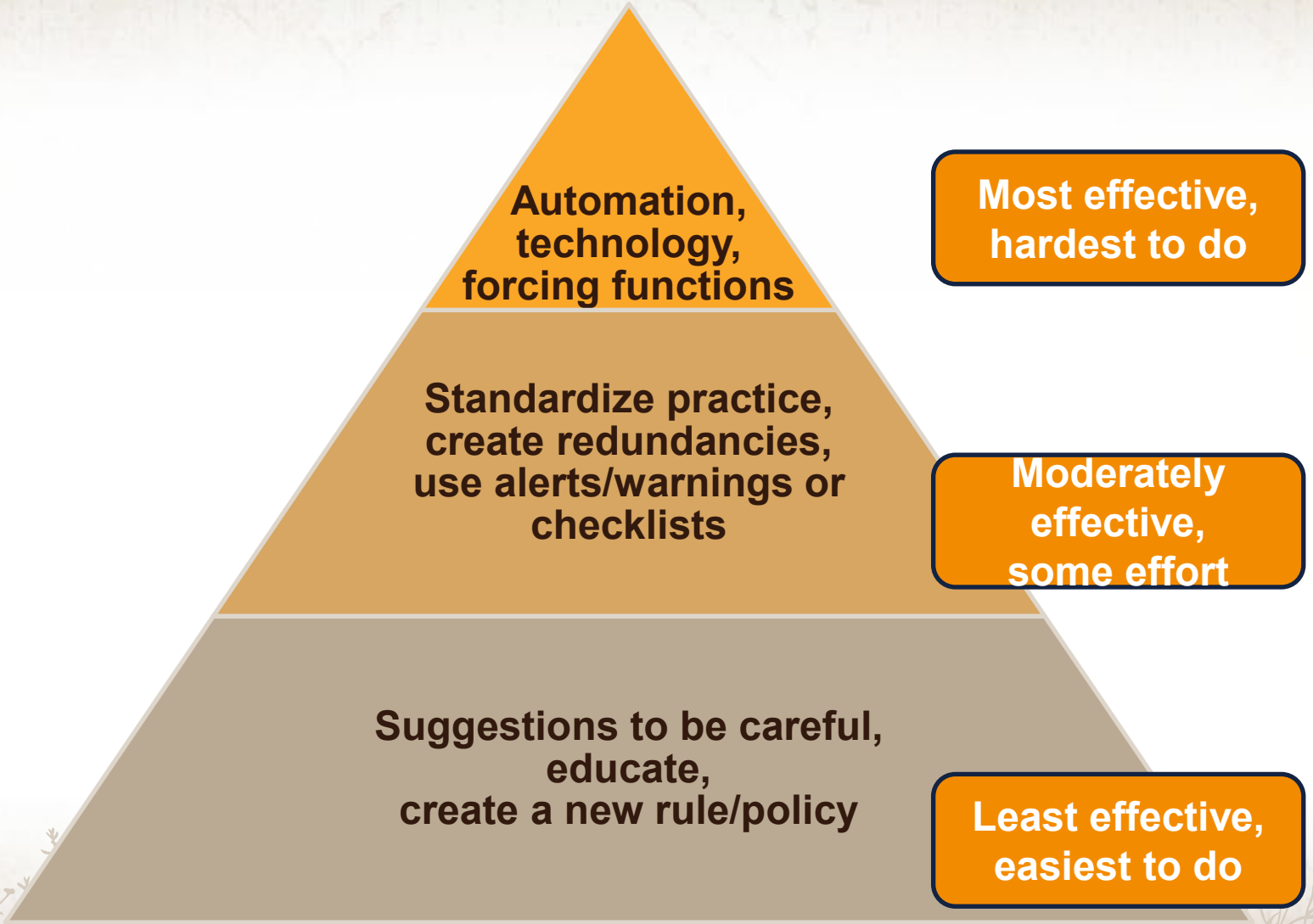
Standardization Creates Systems that Reduce Risk



- Hospitals varying in size and services
- Non-24-hour pharmacy hospitals
- Offsite pharmacy services (e.g., Free Standing Emergency Departments [FSEDs])
- Differing state laws
- Evolving healthcare practices and technology
- Resistance from healthcare professionals

Reproducible high-quality care

Risk-reducing Strategies to Prevent Medication Errors



Source:
ISMP's Hierarchy of Effectiveness of Risk-Reduction Strategies, available at:
https://www.ismp.org/resources/implement-strategies-prevent-persistent-medication-errors-and-hazards

Picking & Shepherding Subject Matter Experts (SMEs)

Current & Relevant Expertise

- Expert's knowledge must not be outdated or based on old standards of care
- Ideally has developed expertise through experience, not just inherent knowledge

Collaborator – Willingness to Share

- Has ability to see the big picture, challenge others and is willing to work with others
- Open-minded to others' challenges and vantage points

Strong Communicator

- Proven track record of accountability and adherence to deadlines
- Able to articulate ideas and explain complex concepts
- Engages in discussion without much prompting

Availability of SMEs often dictates most convenient way to manage them while moving work forward at appropriate pace

Assessment Question #1

Which of the following is an example of an effective strategy to standardize medication management practices through planning and leadership?

A. Creating a new policy

B. Utilizing a check list

C. Providing quarterly education

D. Designing a forcing function

Assessment Question #1: Correct Response

Which of the following is an example of an effective strategy to standardize medication management practices through planning and leadership?

A. Creating a new policy

B. Utilizing a check list

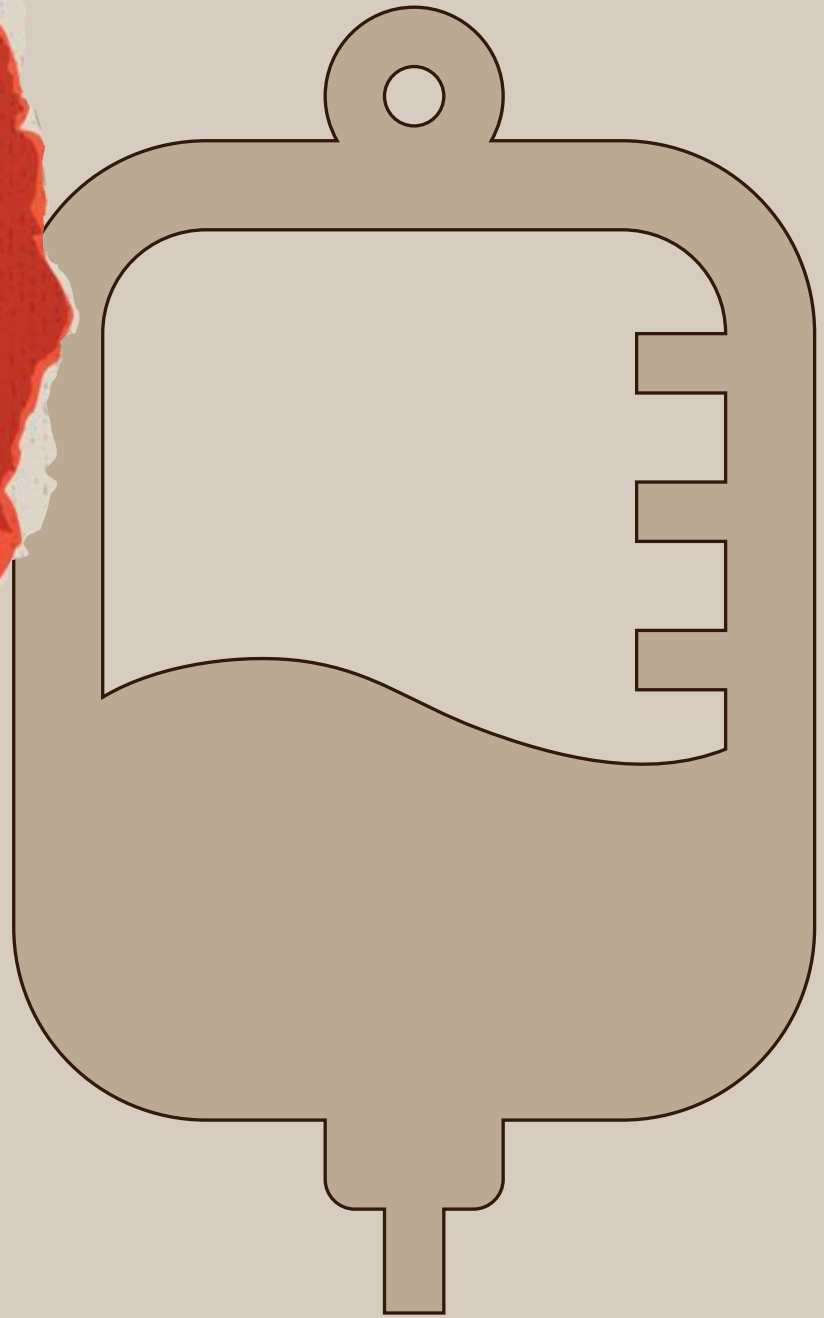
C. Providing quarterly education

D. Designing a forcing function

EXECUTION ON EFFECTIVE COMMUNICATION LEADING CHANGE

Laurie Perkins, PharmD

Director, Clinical Pharmacy Operations



Source: Microsoft PowerPoint icon library.

Change R_X

Define

Communicate

Action

Measure

Hardwire

Planned Change (Lewin)	Diffusion of Innovation (Roger)	Phases of Change (Lippitt)	Change Model (Kotter)
Unfreezing	Knowledge	Awareness	Urgency
Moving	Persuasion	Relationship	Guide
Refreezing	Decision	Definitions	Vision
	Implementation	Goals	Communicate
	Confirmation	Implementation	Enable
		Acceptance	Wins
		Redefine	Build
			Anchor

Sources

1. Adelman-Mullally T et al. Planned change in modern hierarchical organization: a three-step model. https://doi.org/10.1016/j.profnurs.2023.02.002. Accessed May 28,2025.
2. Hussain ST et al. Kurt Lewin's Change Model: A critical review of the role of leadership and employee involvement in organizational change. https://doi.org/10.1016/j.jik.2016.07.002. Accessed May 28, 2025.
3. Mitchell G. Selecting the best theory to implement planned change. https://doi.10.7748/nm2013.04.20.1.32.e1013. Access May 28, 2025.

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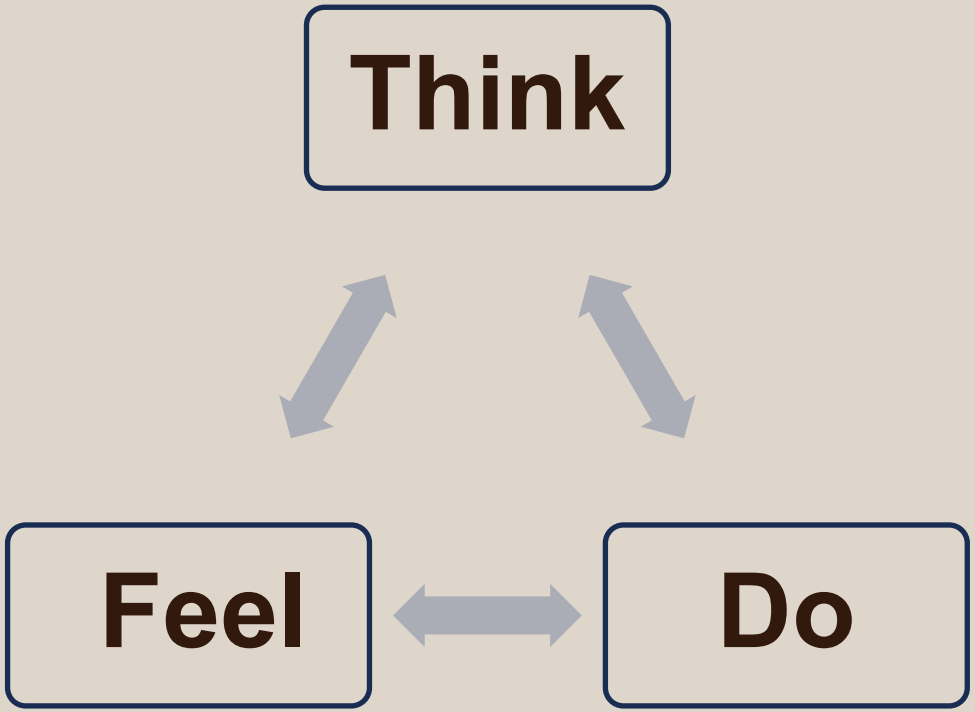
Change $R_{X,}$ *continued*

Awareness (Think)

Empowerment (Feel)

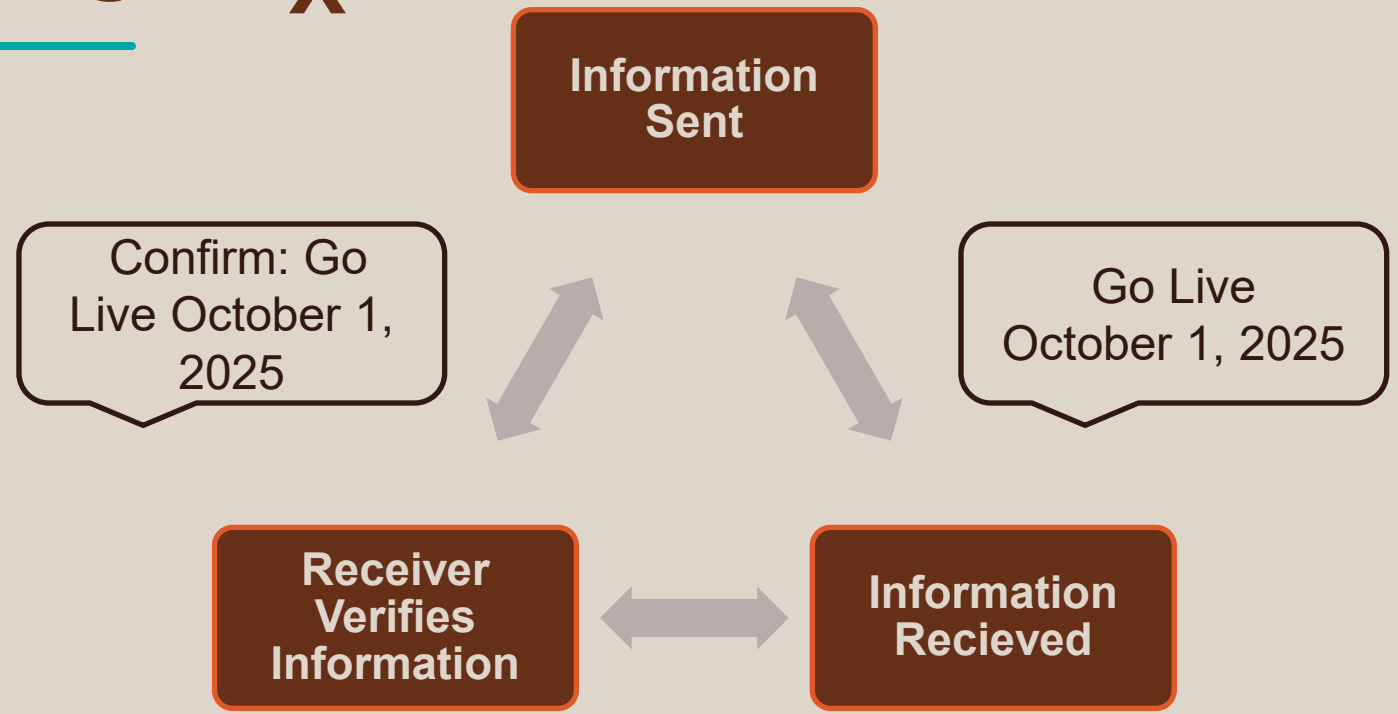
Action (Do)



Source: Flusberg SJ, Holmes KJ, Thibodeau PH, Nabi RL et al. The psychology of framing: how everyday language shapes the way we think, feel, and act. https://doi.org/10.1177/15291006241246966. Accessed May 29, 2025.

Change R_X *continued*

Closed Loop Communication



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CASE EXAMPLES

Large Volume Smart Infusion Pump Standards
Laurie Perkins, PharmD

Independent Double Check Standards
Carley Warren, PharmD, BCPS

Large Volume Smart Infusion Pump Standards

Goal:

Standardize content of drug libraries across pump vendors within limitations of vendor software

3 Pump Vendors

15 Divsions

190 Hospitals

BD Alaris, Baxter, ICU Medical

Division & Facility Standard Library

190+ Opinions multiplied by 10

New Electronic Medical Record

Interoperability

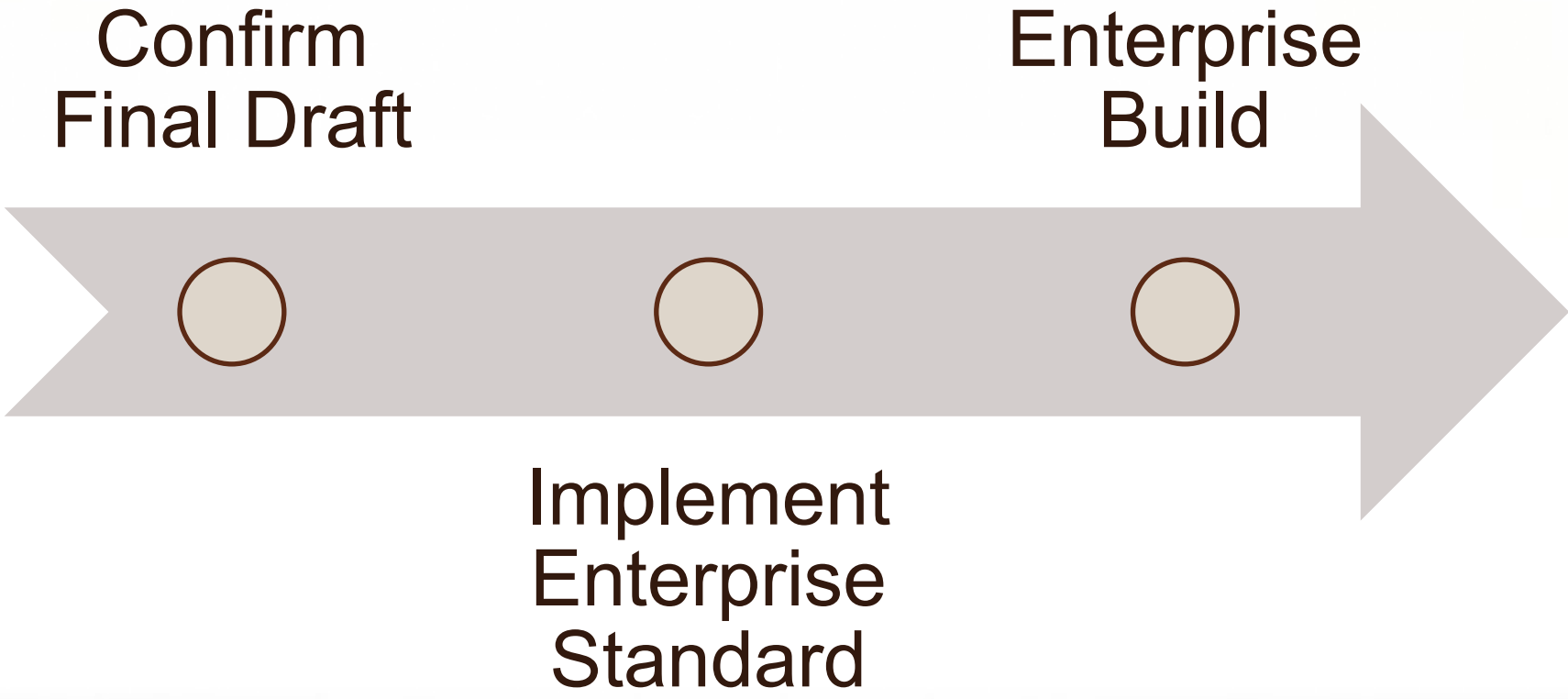
Chasing the Elusive Dream 1.0

- Library standardization ongoing for 2 years
- Facility & division libraries combined
- Team divided into 3 subgroups to review contents of library
- Spreadsheet with final recommendations
- Ready to implement

NOTE:

- **Final recommendations are not always final**
- **Change control**
- **Change control**
- **Change control**

Chasing the Elusive Dream 2.0



Pump Library Basics – Level Set

Master Library		
Pump 1	Pump 2	Example
Clinical Care Areas	Profiles	Emergency Department Med-Surg Labor & Delivery
Modifiers	Therapies	units/kg/hr or units/hr hyponatremia or ICP
Guardrails	Guardrails	concentration, dose, duration

Standards

Societal and Internal

- ASHP Standardize 4 Safety
- Institute for Safe Medication Practices
- Preferred preparation or concentration
- IV push

Interdisciplinary Collaboration

- Nursing
- Nursing
- Nursing
- Informatics
- Anesthesia
- Vendor
- Biomed

Pharmacy

- Technology
- Billing / Regs
- Operations
- Clinical
- Subject matter experts

Source: Standardize for Safety. American Society of Health-System Pharmacists. Updated September 2024. Accessed December 8, 2025. https://www.ashp.org/pharmacy-practice/standardize-4-safety-initiative?loginreturnUrl=SSOCheckOnly.

Reviewing the Data

Acetaminophen - Finalized Build

Status	Drug Final	Descriptor	Infusion Type	Drug Amount	Total Vol (mL)	Conc.	Lower Hard Limit	Lower Soft Limit	Upper Soft Limit	Upper Hard Limit
Final	acetaminophen	N/A	Intermittent	1000 mg	100 mL	10 mg/mL				

Status	Dose Mode	Lower Hard Limit	Lower Soft Limit	Starting Rate	Upper Soft Limit	Upper Hard Limit	Lower Hard Limit	Lower Soft Limit	Initial Time (hr:min)	Upper Soft Limit	Upper Hard Limit
Final	mg		500			1000	15 min		20 min	30 min	

Status	VTBI (mL)	Delivery Bag	Secondary Callback	Bolus	Load
Final	100 mL	P or S	Optional	none	none

Reviewing the Data

Acetaminophen - Finalized Build

Location Descriptor	
Adult CC/ED	Yes
Adult Med Surg	Yes
Adult Onc Inf TXP	No
Anesthesia	Yes
Cath Lab/Sp. Procedure	Yes
L & D / OB	No

Advisory
Preferred Route of Administration
Premix 1000 mg/100 mL
Decision
• Approval small teams 9/25/2024 and 10/22/2024
• Final spreadsheet – Yes - Analgesics

Reviewing the Data, *continued*

Status	Drug Final	Therapy / Modifier	Infusion Type	Drug Amount	Total Volume (mL)	Conc.	Lower Hard Limit	Lower Soft Limit	Upper Soft Limit	Upper Hard Limit
1 Final	Vanc 1250mg and Less		Intermittent			Variable mg/mL		3	7	
2 Final	Vanc 1250mg and Less		Intermittent	500 mg	100 mL	5 mg/mL				
3 Final	Vanc 1250mg and Less		Intermittent	750 mg	250 mL	3 mg/mL				
4 Final	Vanc 1250mg and Less		Intermittent	1000 mg	250 mL	4 mg/mL				
5 Final	Vanc 1250mg and Less		Intermittent	1250 mg	250 mL	5 mg/mL				

Status	Dose Mode	Lower Hard Limit2	Lower Soft Limit3	Starting Rate	Upper Soft Limit4	Upper Hard Limit	Lower Hard Limit	Lower Soft Limit	Initial Time (hr:min)	Upper Soft Limit	Upper Hard Limit
1 Final	mg		250		1250	1251	30 min			6 hr	
• Accommodates 500 mg dose administration through 1250 mg dose administration.											
2 Final 500	mg		250		1250	1251	30 min		1 hr	4 hr	
3 Final 750	mg		250		1250	1251	45 min		1 hr	4 hr	
4 Final 1000	mg		250		1250	1251	1 hr		1 hr 10 min	4 hr	
5 Final 1250	mg		250		1250	1251	1 hr 25 min		1 hr 30 min	4 hr	
							• Max rate 15 mg/min				

Status	VTBI (mL)	Delivery Bag	Secondary Callback	Bolus	Loading Dose
1 Final	N/A	P or S	Optional	None	None
2 Final	100	P or S	Optional	None	None
3 Final	250	P or S	Optional	None	None
4 Final	250	P or S	Optional	None	None
5 Final	250	P or S	Optional	None	None

CCA's / Profiles	
Adult CC/ED	Yes
Adult Med Surg	Yes
Adult Onc Inf TXP	Yes
Anesthesia	No
Cath Lab/Sp. Procedure	Yes
L & D / OB	Yes

Clinical Advisory

- TBD with clinical advisory standardization

Preferred Route of Administration

Vial Adapter - Vancomycin 500 mg/100 mL
Vial Adapter - Vancomycin 750 mg/250 mL
Vial Adapter - Vancomycin 1000 mg/250 mL
Compound in Pharmacy - Vancomycin 1250 mg/250 mL

Decision

- Approved in meeting 2/18/1025 and 2/25/2025
- Final spreadsheet – Yes - Antibiotics

Change Control

Date	Numb	Status	Infusion Syste	Drug Final (Lower Case and TALLman)	Therapy Name (Alaris) Modifier (Dose IQ)	Infusion Ty	Drug Ali	Drug Amou	Total Volume (n	Conc.
4/1/2025	2	Final	All	ceFAZolin 24hr Inf	None	Intermittent				Variable mg/mL
9/10/2024	2	Historical	All	ceFAZolin	24 hr Infusion	Intermittent				Variable mg/mL
4/1/2025	3	Final	All	ceFAZolin BELOW 3hr	None	Intermittent				Variable mg/mL
9/10/2024	3	Historical	All	ceFAZolin	Intermittent Infusion	Intermittent				Variable mg/mL
4/1/2025	7	Final	All	ceFAZolin BELOW 3hr	None	Intermittent		3000 mg	100 mL	30 mg/mL
9/10/2024	7	Historical	All	ceFAZolin	Intermittent Infusion	Intermittent		3000 mg	100 mL	30 mg/mL

Abbreviated Example: Formulary Management Process

1. Discovery Work: Process, Definition, Follow-up
2. Key SMEs: Division Directors of Clinical Pharmacy
3. Stakeholders: Administration, Providers, Nursing, Others
4. Implementation: Communication & Alignment

Assessment Question #2

Which of the following are examples of current challenges in medication management standardization?

A. Large number of subject matter experts
B. Historical precedent
C. Change control
D. Interdisciplinary support
E. All of the above

Assessment Question #2: Correct Response

Which of the following are examples of current challenges in medication management standardization?

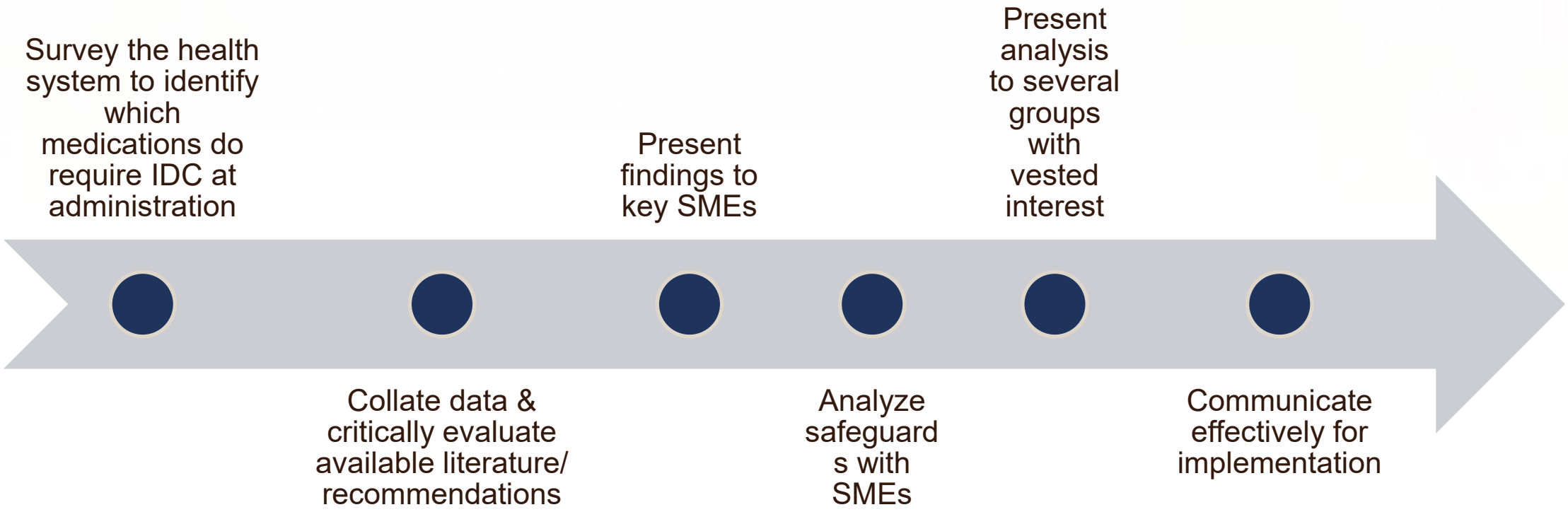
A. Large number of subject matter experts
B. Historical precedent
C. Change control
D. Interdisciplinary support
E. All of the above

Independent Double Check Standards

Why did we start this work?

Source: Getty Images. Used with permission of HealthTrust.

The Road to IDC Standards at Administration



Step 1: Discovery Work & Leadership Support

Survey they health system to identify medications that do require IDC at administration in current state

Understand current technical challenges & limitations

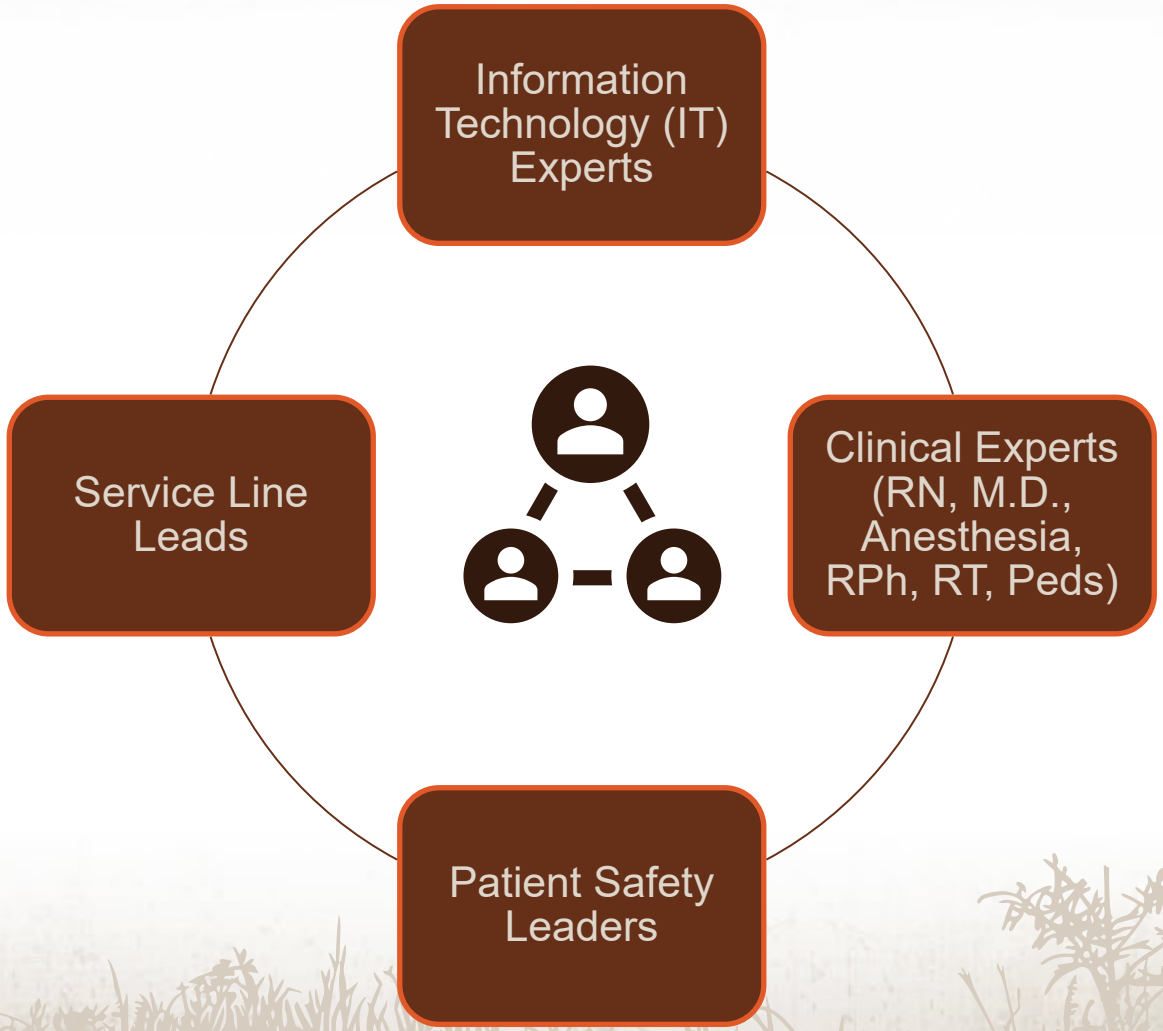
Collate data & critically evaluate available literature/recommendations

Intake project plan

Present findings to leaders and gain necessary buy-in, prioritization/attention to move forward

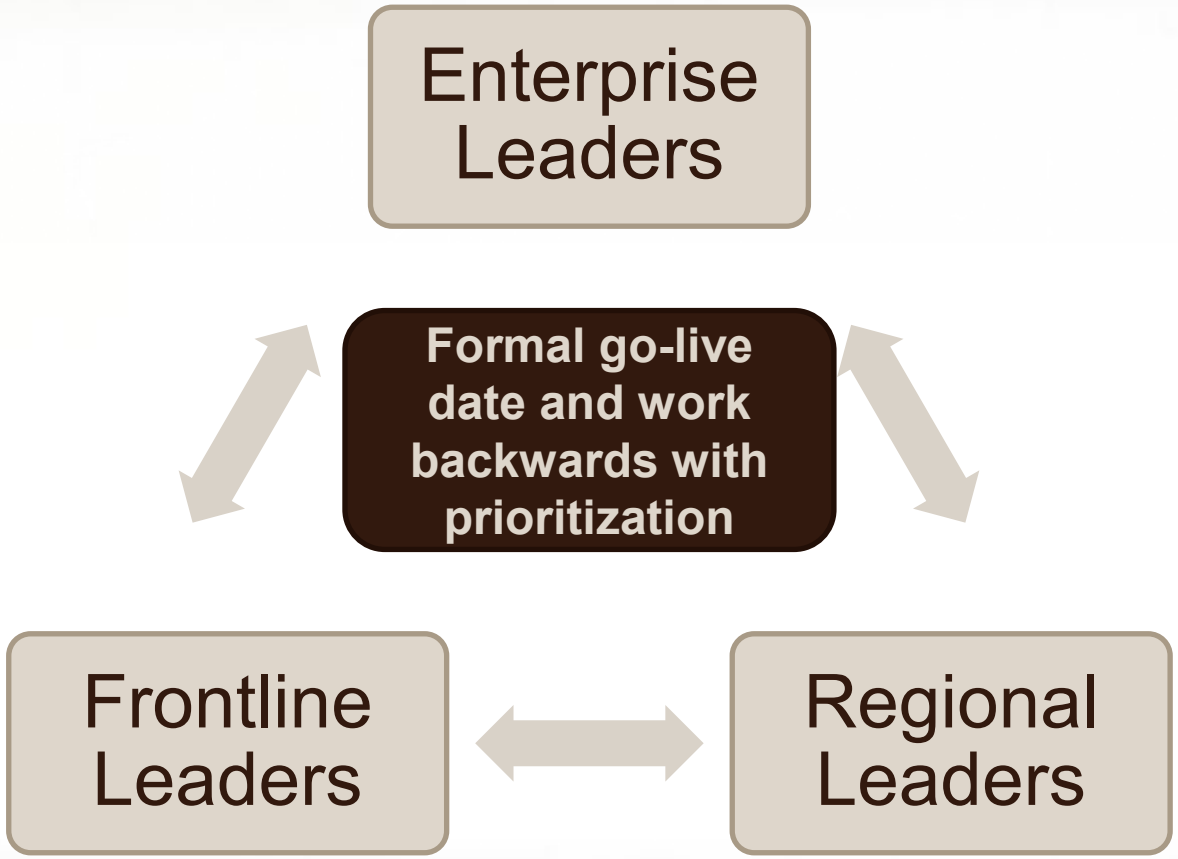
Communicate with other teams who would be helping to do the work

Step 2: Engage Key Subject Matter Experts



Step 3: Present to Stakeholders for Approval

Step 4: Communication & Implementation



Source: Agency for Healthcare Research and Quality. Health Literacy Universal Precautions Toolkit, 3rd Edition. https://www.ahrq.gov/health-literacy/improve/precautions/tool2b.html. Accessed May 18, 2025.

Abbreviated Example:
Clinical Decision Support: Antibiotic Indication Screens

1. Discovery Work: Identify common antibiotic indications, create standardized list & recommended duration of therapy based on antibiotic-indication combinations.
2. Key SMEs: Clinical pharmacy leaders, Infectious disease (ID) pharmacists, physicians
3. Stakeholders: Enterprisewide ID committee (chief epidemiologist, antimicrobial stewardship leaders, infection prevention, IT, nursing)
4. Implementation: Released as standard build guide through IT channels as well as clinical

Source: CDC. Core elements of hospital antibiotic stewardship programs [Internet]. Atlanta, GA: U.S. Department of Health and Human Services, CDC; 2014.https://www.cdc.gov/antibiotic-use/core-elements/hospital.html. Accessed June 4, 2025.

Assessment Question #3

Based on the presentation, which of the following was identified as a benefit from standardized medication management practices?

A. Local leaders develop the best possible way to do things

B. Subject matter experts work together to create standards

C. Key stakeholders tell frontline leaders how to work effectively

D. Local leaders implement standards at their own pace

Assessment Question #3: Correct Response

Based on the presentation, which of the following was identified as a benefit from standardized medication management practices?

A. Local leaders develop the best possible way to do things

B. Subject matter experts work together to create standards

C. Key stakeholders tell frontline leaders how to work effectively

D. Local leaders implement standards at their own pace

CONCLUDING REMARKS

- **Laurie Perkins**, PharmD

Summary

- In most standardization work there will be a period of denial and frustration—Can we really do this?
  - Press through, lean on effective structures to gain buy-in and support
- Shepherd subject matter experts into formal decision-making
  - Pilot if needed/able to gain traction and early adopters who will promote benefits of this work
- Communicate effectively
  - Define, communicate, act, measure, hardwire

Source: Revgen. Change Management in Times of Crisis. https://www.revgenpartners.com/insight-posts/change-management-in-times-of-crisis/. Accessed May 18, 2025.

References

1. ISMP's Hierarchy of Effectiveness of Risk-Reduction Strategies, available at: https://www.ismp.org/resources/implement-strategies-prevent-persistent-medication-errors-and-hazards. Accessed May 28, 2025.
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Thanks y'all!

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- Laurie Perkins
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