

2023 HEALTHTRUST UNIVERSITY CONFERENCE

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Working Together: Clinically-led ICU Pharmacy Cost Savings

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Meet the Presenters



Moderator: Stephanie Thompson, PharmD, MBA
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Disclosures

The presenters have no relevant financial relationships to disclose.

Note: This program may contain the mention of suppliers, brands, products, services or drugs presented in a case study or comparative format using evidence-based research. Such examples are intended for educational and informational purposes and should not be perceived as an endorsement of any particular supplier, brand, product, service or drug.

Learning Objectives

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

1. Recall the importance of communication among all patient care providers and the impact it has on patient outcomes.
2. Recognize how pharmacy cost savings can positively impact a health system's financials.
3. Identify methods to improve pharmacy costs using a collaborative team approach.

Poll Question #1

Warm up!

Acute care pharmacy spend has consistently increased by approximately *how much* over the past 7 years?

- a. Remained basically flat
- b. 5 – 10 %
- c. 15 – 20 %
- d. 25 – 30 %



McCoy S. How hospitals leverage pharmacy steams to reduce costs and improve clinical outcomes. *Health*. 2020.

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Inpatient Pharmacy Spend Has Increased by 15–20%

- More than **66%** of hospitals surveyed by the American Hospital Association reported changes in drug prices had a **moderate to severe impact** on their ability to manage hospital budgets
- Research from the 1990s demonstrate the positive impact of a multidisciplinary care team in an ICU setting leads to a **shorter length of stay** and **lower drug cost per admission**



McCoy S. How hospitals leverage pharmacy steams to reduce costs and improve clinical outcomes. *Health*. 2020.
NORC at the University of Chicago. Final Report: Recent trends in hospital drug spending and manufacturer shortages. 2019.

Critical Care Resource Consumption

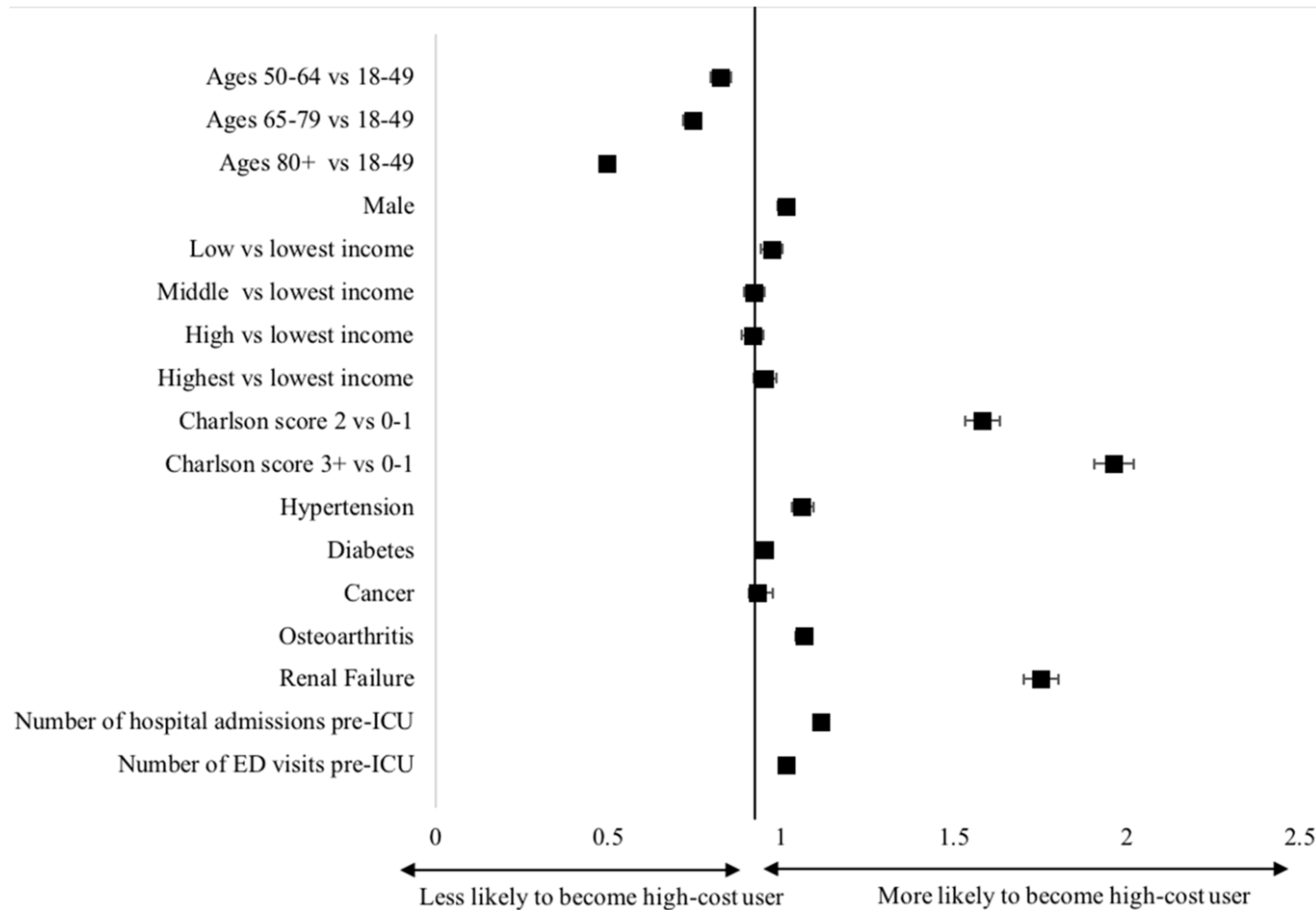
- Top 5 primary adult ICU admission diagnoses
 1. Respiratory failure/insufficiency with mechanical ventilator support
 2. Acute myocardial infarction
 3. Intracranial hemorrhage/cerebral infarction
 4. Percutaneous cardiovascular procedures
 5. Septicemia/severe sepsis without ventilator support
- Other high consumption conditions/diagnoses (recognizing regional influences)
 1. Poisonings/toxic drug interactions/side effects
 2. Pulmonary edema/respiratory failure
 3. Heart failure/shock/cardiac arrhythmias and conduction disorders
 4. Renal failure with major complications or comorbidities
 5. Gastrointestinal hemorrhage with complications or comorbidities



Society of Critical Care Medicine. Critical care statistics. <https://www.sccm.org/Communications/Critical-Care-Statistics>. Accessed May 25, 2023.

ICU Patient “Consumption Characteristics”

Odds Ratio Forest Plot



2021
Population-based
Cohort Study

High ICU Cost Patient
Characteristics

Male

< 50 years of age

Multiple
comorbidities/
mortality risk
(Charlson score)

Previous history of
hospitalization

Dziegielewska C et al. Characteristics and resource utilization of high-cost users in the intensive care unit: a population-based cohort study. *BMC Health Services Research*. 2021.

Turning Data Into Knowledge

Developing Strategies Around High Consumption Care

- High cost associated with **high frequency healthcare consumption/chronic disease**
- **Collaborative communication** across care teams and with patients and families on goals of care results in **less frequent pursuit of ICU-level care** while enhancing quality of care – understanding the “why”
- **Interdisciplinary care teams** may help medically optimize patients until more preventative care pathways are identified

Dziegielewska C et al. Characteristics and resource utilization of high-cost users in the intensive care unit: a population-based cohort study. *BMC Health Services Research*. 2021.

Panelist Discussion

Laura Aykroyd, PharmD

- Clinical Pharmacy Manager at Scripps Memorial Hospital in La Jolla, California
- Serves as the Co-chair of the Pharmacy & Therapeutics Committee and Pharmacy Residency Director

Tapan Desai, M.D.

- Pulmonologist with Franciscan Alliance in Munster, Indiana
- Serves as the Chairman of Internal Medicine, Pulmonary, Critical Care and Sleep Medicine

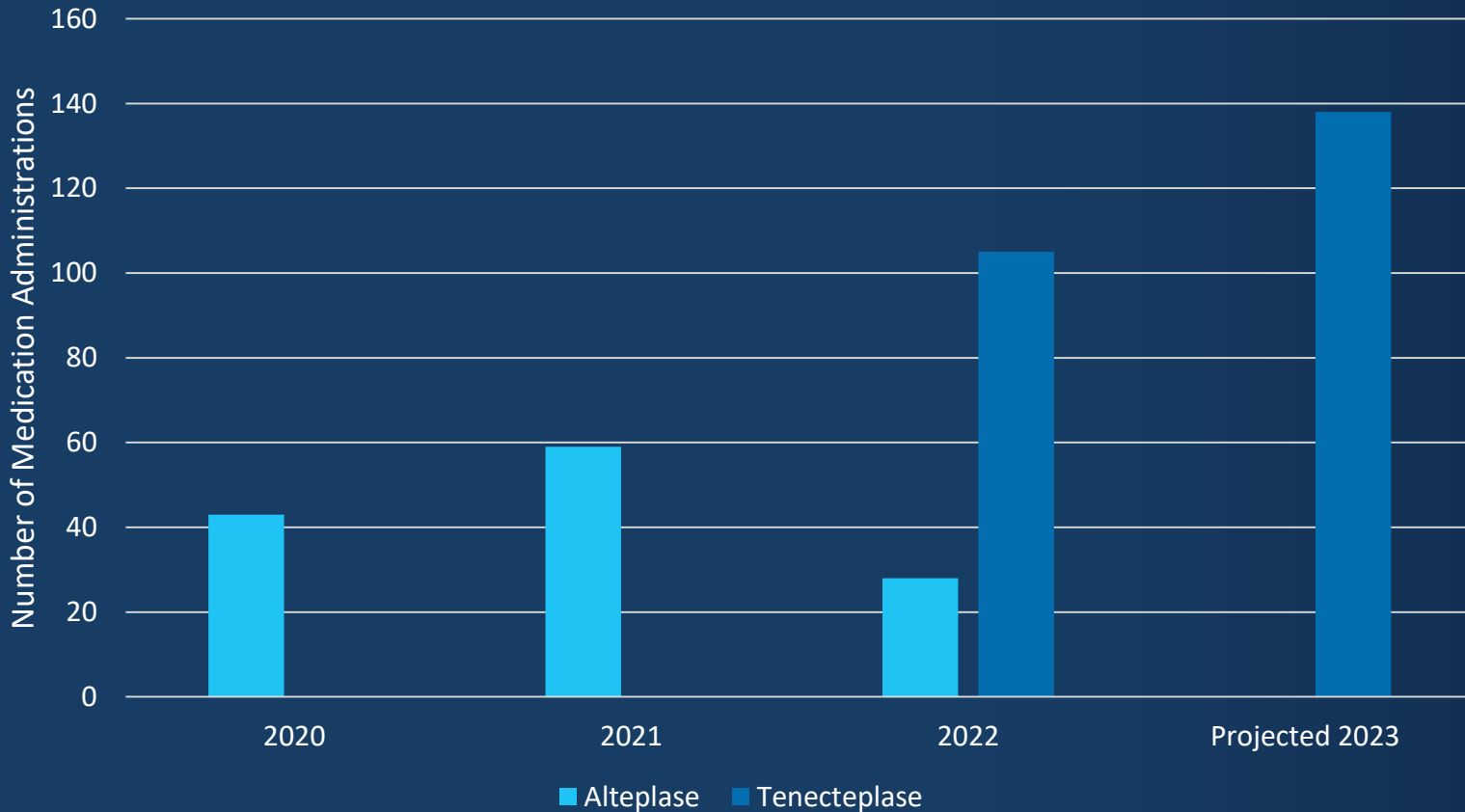
Panelist Question

Share a successful initiative within your ICU setting that led to improved patient outcomes or improved efficiencies that lowered pharmacy waste/cost?

- Medication Access
 - Formulary management
 - Designated criteria for use
- Therapeutic Alternative
 - Example: Alteplase vs. Tenecteplase
- Use of Biosimilar biologic products
- Directing optimal dose & titration
 - Titration of vasopressors (example: titrate off first)
 - Blood factor management: Fixed vs. Weight-based dosing
- Product selection
 - Premix IVPB vs. compounded from vial

Therapeutic Alternative: Acute Ischemic Stroke Management

IV Thrombolytic Agents



Direct AWP Acquisition Cost:

Alteplase (100mg): \$10,560.43
Tenecteplase (50mg): \$8,853.91

2022 Cost Savings:

- \$179,184.60

2023 *Projected* Cost Savings:

- \$235,499.76

Source: Scripps Health. Do not reproduce without permission.

CE Credit Deadline: 8/25/23

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Panelist Question

What are some of the keys to success when embarking on these types of initiatives in the ICU?

- Multidisciplinary ICU rounds
 - Utilization of Clinical Pharmacist
 - Under-recognized cost savings
- Improvement – Multifaceted
 - Adverse Drug events
 - Resource Utilization
 - Prophylaxis

Pharmacy Implementation

- Policy Driven
 - Therapeutic Drug Monitoring
 - Sedation use – Days, Type, Indication
 - Prophylaxis
- Multidisciplinary Rounds
 - Patient-centric
 - Review of therapeutic regimen with team
 - Medication reconciliation prior to transfer out of ICU
 - Resource Utilization
 - Prevention of excess labs /tests

Pharmacy Implementation

- Direct Cost Savings
 - Direct Patient Cost Savings
 - Individualization of care
 - Systemwide
 - Dose adjustment
 - Prevention of use of high cost meds if not needed
 - Anticoagulation use and options
 - Antimicrobial Stewardship and collaboration with ID Physicians
 - Dietary with TPN

Panelist Question

What are some of the biggest hurdles or struggles currently when embarking on an ICU pharmacy cost-lowering initiative?

- Gathering data – Demonstrate the Why
 - Medical literature to support change
 - Patient or hospital-specific data to demonstrate need for change
 - Cost-savings alone will not be a motivator for most
- Determining gain/losses across all disciplines
 - Efficiency gained vs. efficiency compromised
- Identifying all essential team members/departments to help drive change
- Disseminating education

Pharmacoeconomic Evaluation Challenges

Lack of cost-effectiveness studies

- Many studies only consider drug acquisition costs
- Cost-effectiveness studies in the ICU
 - Intervention must first be shown to be beneficial
 - Heterogeneity of interventions & diagnoses
- Example: Evaluation of Sedation in the ICU
 - Cost of care is complex
 - ICU Length of Stay
 - Ventilator-free days
 - Delirium avoidance
 - Cost per quality-adjusted life year

Crit Care Clin 2009; 25:571-583; Crit Care Med 2019;47:1011-1017; Crit Care Med 2022; 50:1318-1328

Franciscan – Challenges

- Multicenter with Multiple Geographies
- Varied Population
 - City vs. Rural
 - Economic
- Multiple Smaller Institutions
- Cost – increase multifold

Pharmacy-driven Solutions

- Multidisciplinary Rounding daily in all ICU with Intensivist
 - Prophylaxis
 - Adverse Drug Events
 - Feeding, if needed
 - Stress Ulcer
- Code Blue – utilization
- Antibiotic Stewardship
- Microbiology follow up
- Dose Adjustment

Cost Saving Areas
Medication Errors
Drug Utilization Review
Therapeutic Monitoring
Antibiotic Stewardship

Stakeholders

- Create a Medical Utilization Team
 - Admin – Clinical
 - Designate Key Members of the house staff
 - Physician Champions
- Multidisciplinary Team in the ICU
 - Build momentum with key personnel
 - Coordinated Efforts – systemwide
 - Discounts on medications from manufacturers
 - Reduce costs from suppliers

Panelist Question

What were some of the biggest challenges you faced within your teams or facilities before finding that optimal approach to collaboration?

- Systemwide vs. single hospital site-based decisions
- American Hospital Association FY2021 Data



[Fast-Facts-US-Health-Systems-Infographic-2023.pdf \(aha.org\)](https://www.aha.org/fast-facts-us-health-systems-infographic-2023.pdf)

Franciscan – Pitfalls

- Limited Availability
 - Smaller hospitals struggle to find qualified ICU Pharmacists
 - Funding
 - Competing with larger hospital in area – salaries, benefits etc.,
- Scope of Practice
 - Need more generalists
 - Limits talent pool
 - Training is now more specific. Broader skills & experience at the community setting may be difficult to find

Franciscan – Pitfalls, *continued*

- Workload management
 - Smaller facility ->Smaller Team -> Smaller Budget -> Higher workload
 - Balance clinical duties and Administrative tasks
- Interdisciplinary Collaboration
 - Smaller hospitals may not have all service lines
 - Collaboration may be difficult
 - More pressure for Continuing Education
 - No real-world experience

Franciscan Solutions

- Training & development
 - Multiple institutions – varied experience
 - Encouragement for conferences & workshops
- Workflow optimization
 - Improve workload distribution
 - Rotational scheduling
 - Implementing new technology
- Foster culture of collaboration between different disciplines
 - Create partnership with larger academic institutions

Panelist Question

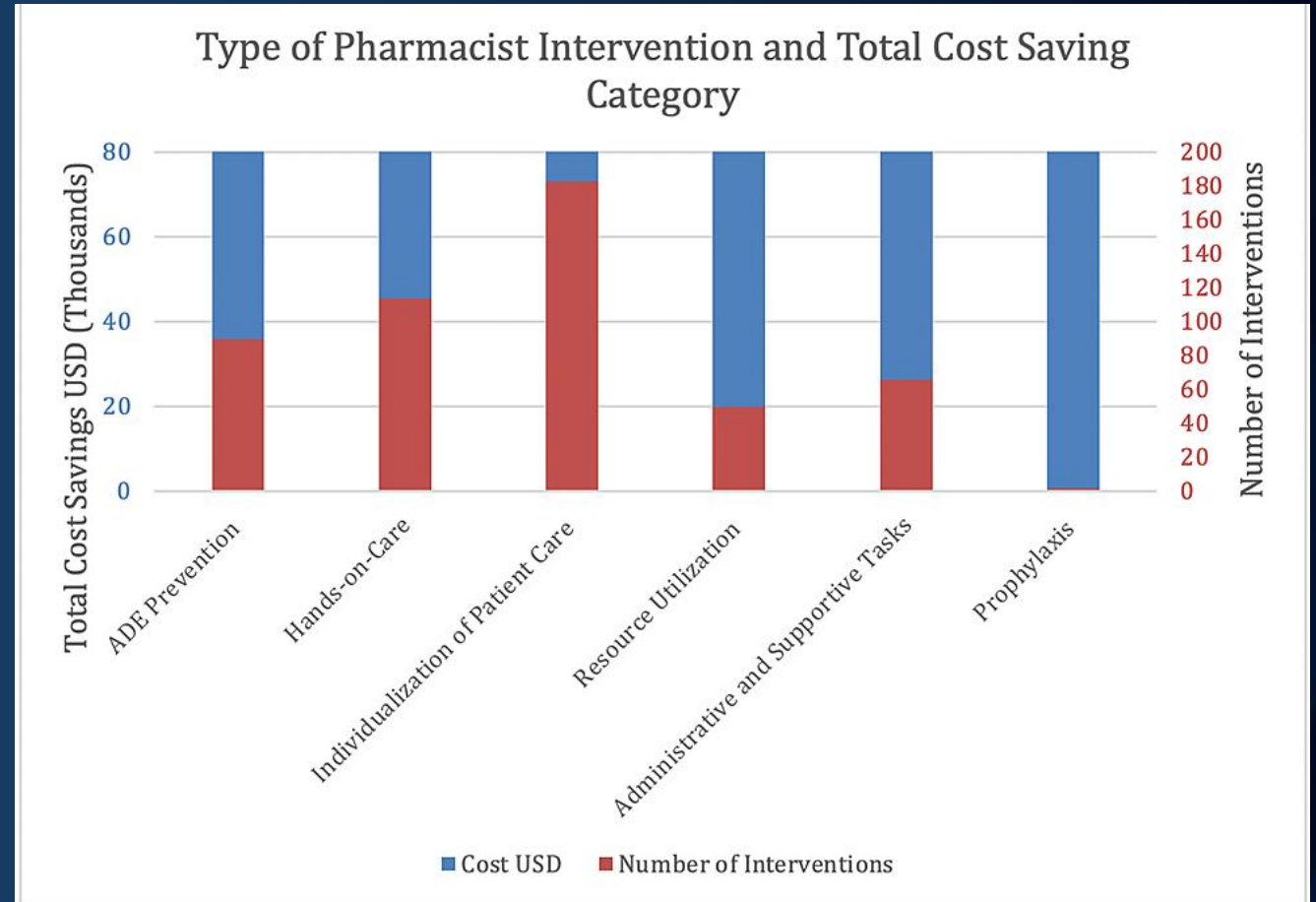
Which initiatives or approaches would you suggest to our audience that might be the best place to start an ICU pharmacy initiative?

- Multicenter study has demonstrated that over 60% of ICU patients have issues with medicines in the post-hospital discharge period
- The committee on identifying the preventable errors has suggested approximately 1.5 million preventable adverse events/year in the United States, costing approximately \$3.5 billion
- Provide a standardized review for all patients that includes medicine reconciliation, assessment of medication appropriateness, identification of problems, assessment of adherence and provision of education

[Ann Am Thorac Soc.](#) 2020 Oct; 17(10): 1326–1329.

Franciscan Solutions & Initiatives

- Consensus opinion
 - Various sizes of institutions
 - Providing critical care services within several types of pharmacy practice models was obtained, including community-based and academic practice settings



Rudis, Maria I. PharmD, ABAT, BCPS; Brandl, Katherine M. PharmD, BCPS for the Society of Critical Care Medicine and American College of Clinical Pharmacy Task Force on Critical Care Pharmacy Services .

Role of Critical Care Medicine Pharmacist

- Pharmacist participation in the critical care multidisciplinary rounds – prevents errors & helps reduce ICU drug cost
- Other key involvement opportunities:
 - Drug use evaluation program
 - Cardiopulmonary resuscitation (CPR) team
 - Compliance with venous thromboembolism prophylaxis
 - Drug safety, error prevention, medication counseling, drug information services, clinical research, medication reconciliation & proper medication history taking

Assessment Question #1

Importance of Communication

Which of the following represents some of the biggest impacts of collaborative communication on patient outcomes?

- a. Lower drug cost per admission
- b. Shorter length of stay
- c. Both A and B
- d. None of the above



Assessment Question #1 | Answer...

Importance of Communication

Which of the following represents some of the biggest impacts of collaborative communication on patient outcomes?

- a. Lower drug cost per admission
- b. Shorter length of stay
- c. **Both A and B**
- d. None of the above



Assessment Question #2

Financial Impact

Which of the following pharmacy cost savings impact health systems' financial outcomes in a positive way?

- a. Prevention of unnecessary high cost medications
- b. Prevention of unnecessary, costly labs/tests
- c. Adherence to formulary medications
- d. All of the above



Assessment Question #2 | Answer...

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Assessment Question #3

Cost-Saving Initiatives

Which of the following are methods to improve pharmacy costs using a collaborative team approach?

- a. All cost-saving pharmacy initiatives would benefit from a collaborative team approach
- b. Antibiotic stewardship initiative
- c. Anticoagulation options and duration initiative
- d. TPN/Nutrition initiative



Dziegielewski C et al. Characteristics and resource utilization of high-cost users in the intensive care unit: a population-based cohort study. BMC Health Services Research. 2021.

Assessment Question #3 | Answer...

Cost-Saving Initiatives

Which of the following are methods to improve pharmacy costs using a collaborative team approach?

- a. **All cost-saving pharmacy initiatives would benefit from a collaborative team approach**
- b. Antibiotic stewardship initiative
- c. Anticoagulation options and duration initiative
- d. TPN/Nutrition initiative



Key Takeaways in Clinically-led Pharmacy Cost Saving Initiatives

1. While **collaborative communication** across care teams is key, it hinges on understanding, discussing & demonstrating the “why” & assessing the impact across care perspectives
2. Successful initiatives may be identified **across multiple lenses**
 - Medication Access
 - Therapeutic Alternative
 - Biosimilar Use
 - Optimized Dose & Titration
 - Product Selection
3. Consistent & **ongoing education & progress feedback** is essential and should be intentional, not reactive
4. Gaps & challenges should be identified, shared & discussed
 - Create transparency
 - Instill trust
 - Support dialogue
 - Communicate shared reality



Poll Question #2

Closing Question

What is your current biggest gap or need in approaching an effective and collaborative within the ICU pharmacy cost-effectiveness space?

- a. Systemwide vs. single hospital site-based decisions
- b. Physician engagement
- c. Resource/clinical evidence support
- d. Personnel strain/burnout
- e. Other (let us know during Q&A!)



References

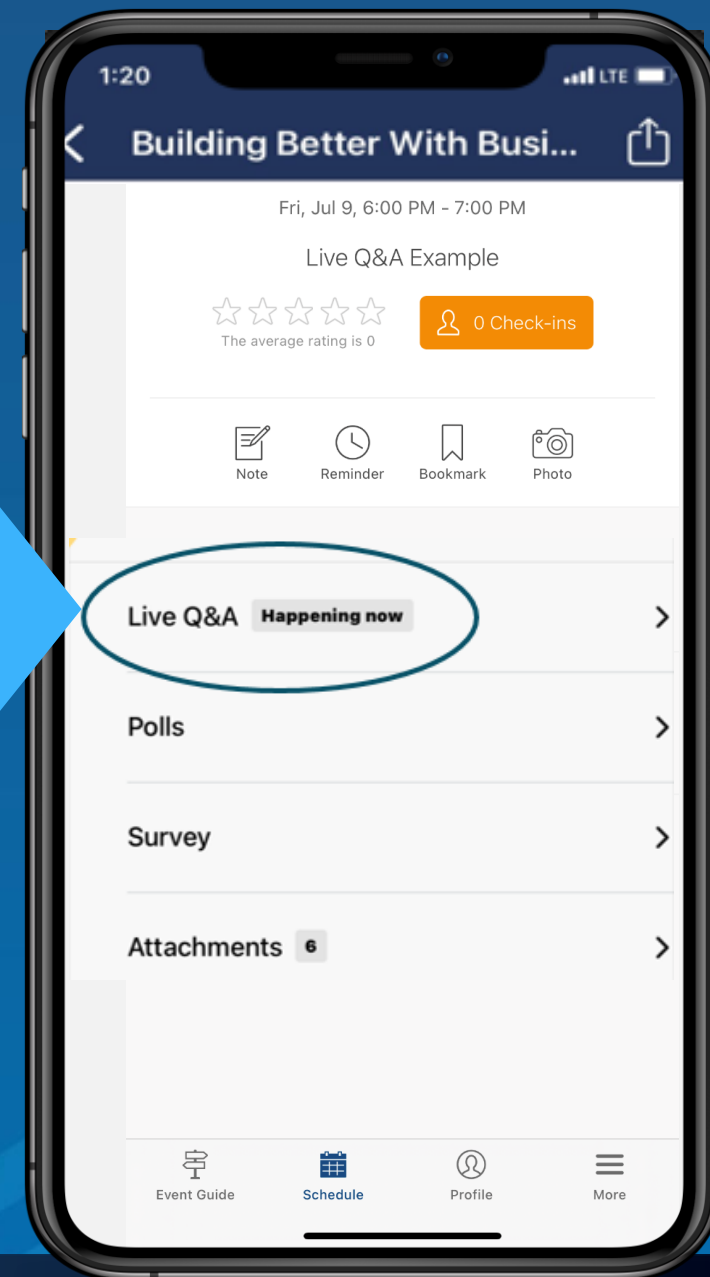
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Thank you...

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