

Abstract #154

Platform Category B6

## THE IMPACT OF PHARMACIST SERVICES IN PEDIATRIC AND OBSTETRIC SETTINGS

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Helena, MT  
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IRB Exempt

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### DISCLOSURE STATEMENT

- Kestly Jessop
- Conflicts of interest: none
- Project sponsorship: none
- Proprietary information or results of ongoing research may be subject to different interpretations
- Speaker's presentation is educational in nature and indicates agreement to abide by the non-commercialism guidelines provided
- Co-investigators:
  - Shayla Barraclough, PharmD, BCPS, BCPPS
  - Jada Cunningham, PharmD, BCPS
  - Heidi Simons, PharmD, BCPS, BCCCP
  - Aimee Thornton, PharmD

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### LEARNING OBJECTIVE

By the end of this presentation, you will be able to:

- Describe various benefits of implementing pharmacist services within the pediatric and obstetric settings

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- About **St. Peter's Health**
  - Non-profit, community-owned
  - 123 beds
    - Women's and Children's (WAC) floor:
      - 12 obstetric (OB) beds
      - 10 pediatric beds
      - 6 Level 2 neonatal intensive care unit (NICU) beds.
    - Average census:
      - 4 OB
      - 3 pediatric
      - 4 newborns
  - Services to five county areas

### Facility


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### PRE-TEST ASSESSMENT QUESTION 1

Which of the following are roles that the pharmacist should have among pediatric and obstetric patient populations?

- Medication safety management
- Medication counseling
- Medication administration
- Antimicrobial stewardship
- B and D only
- A, B, and D

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### ASSESSMENT QUESTION #2

In which of the following way(s) do pharmacist-driven pediatric and obstetric services benefit patient care?

- Increase pharmacist and nurse efficiency
- Increase patient medication education
- Improve the medication use process
- All of the above

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### ASSESSMENT QUESTION #3

Which pharmacist intervention had the highest potential cost impact?

- Medication discontinuations
- Medication initiations
- Pharmacy-led medication histories
- Order modifications

### BACKGROUND

- St. Peter's Health (SPH) continues to grow inpatient pediatric and obstetric (OB) service lines
- In the past year, SPH has hired two pediatric hospitalists
  - Increased patient census and acuity
  - Increased opportunities for pharmacist recommendations and interventions

### BACKGROUND

- The Joint Commission, the American Academy of Pediatrics, Pediatric Pharmacy Advocacy Group and American Society of Health System Pharmacists (ASHP) recommend to establish pediatric pharmacy services on the basis of quality of care, safety, and financial impact.<sup>1-4</sup>

### PURPOSE

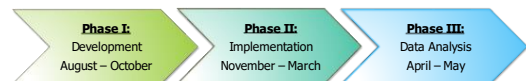
- Assess the impact of a pediatric and obstetric pharmacist position in a community based hospital setting

### OBJECTIVES

- Primary Objective:**
  - Evaluate the impact of pharmacist services targeting medication safety and patient education in the pediatric and obstetric settings
- Secondary Objectives:**
  - Assess for an appropriate medication history process
  - Assess impact of expanding Meds-to-Beds service to pediatric/obstetric floor
  - Assess for appropriate discharge education
  - Track pharmacist time spent and impact on medication safety interventions
  - Identify areas of improvement in antibiotic therapy in the pediatric, obstetric, gynecologic, and women's health population

### METHODS: STUDY DESIGN

- Single center
- Observational
- Prospective
- Quality improvement/service development study



### METHODS: PHASE I - PROJECT DEVELOPMENT

- Identified targeted areas of impact/pharmacist roles for implementation phase
  - Literature review
  - Stakeholder input
- Acquired project approval from various stakeholders including the Pediatric and Obstetric Departments and Pharmacy and Therapeutics Committee

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### METHODS: PHASE II - IMPLEMENTATION

- 8-week pilot phase
  - Pharmacist embedded on SPH WAC unit January – March 2024
- During this pilot phase, the following was completed:
  - Established pharmacist role in the pediatric/obstetric areas

	Jan	Feb	Mar	Apr	May	Jun
Established pharmacist role in the pediatric/obstetric areas	7	8	9	10	11	12
Collected data on various interventions made	13	14	15	16	17	18
Assessed for cost savings	19	20	21	22	23	24
Expanded Meds-to-Beds services	25	26	27	28	29	30
Established relationships between pharmacy and pediatric/obstetric staff	31	1	2	3	4	5

- Collected data on various interventions made
  - Medication safety
  - Time saved
  - Therapy optimization
  - Process improvements
  - Medication histories
  - Meds-to-Beds service
- Assessed for cost savings
- Expanded Meds-to-Beds services
- Established relationships between pharmacy and pediatric/obstetric staff

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### METHODS: PHASE II - IMPLEMENTATION

- The following areas were targeted for impact:

Meds-to-Beds Program	Medication Management	Pharmacist Involvement	Medication Histories	Process Improvement
<ul style="list-style-type: none"> <li>Expand program to pediatric and obstetric populations</li> <li>Patient education</li> <li>Medication counseling</li> </ul>	<ul style="list-style-type: none"> <li>Antimicrobial stewardship</li> <li>Medication safety</li> </ul>	<ul style="list-style-type: none"> <li>Identify areas for pharmacy to assist the WAC unit team</li> </ul>	<ul style="list-style-type: none"> <li>Assess current process</li> <li>Expand service to obstetric and pediatric populations</li> </ul>	<ul style="list-style-type: none"> <li>Update protocols</li> <li>Establish relationships</li> <li>Other</li> </ul>

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### METHODS: PHASE III - DATA ANALYSIS

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### RESULTS: PRIMARY OBJECTIVE

Interventions were collected throughout the 8-week pilot phase and placed into categories:

- Estimated time saved through pharmacist interventions
  - Phone calls/indication messages (5 minutes, unless specified otherwise)
  - Medication dispensing/delivery (5 minutes, unless specified otherwise)
  - Order input/modification (5 minutes, unless specified otherwise)
  - Other (clinical staff education, process improvements, lab monitoring) (time specified)
- Order modification/medication management
  - Dose, duration, formulation, route, time adjustment, frequency, antibiotic therapy optimization
- Improvement of medication use process
  - Medication dispensing, medication delivery, other (automated dispensing cabinet (ADS) restock, locate medications, order adjustments to route to ADS)
- Medication safety interventions
  - Lab monitoring
  - Dose rounding
  - Medication initiation
  - Untreated conditions
  - Medication discontinuation
  - Duplication, no indication
- Other
  - Emergent situation response, clinical staff education, provider consults

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### RESULTS: PRIMARY OBJECTIVE

- Estimated increased/improved main pharmacy time towards efficiency:
  - ~ 2.8 hours daily
- Estimated added time towards nurse efficiency:
  - ~ 30 minutes daily

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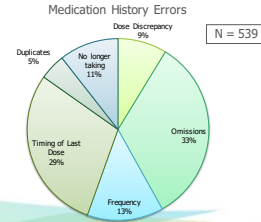
**RESULTS: PRIMARY OBJECTIVE**

Medication Safety Interventions	
Lab monitoring	236
Order rounding	205
Initiation of medication	88
Drug interactions	6
<b>Total</b>	<b>535</b>

	Not Indicated	Duplications	Total
Medication Discontinuation	265	8	273

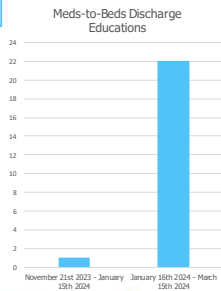
**RESULTS: SECONDARY OBJECTIVES**

- Assessing for an appropriate medication history process
  - Over the 8 week pilot phase, the pharmacist spent an average of 1 hour per day on admission medication histories
  - A total of 258 medication histories were performed



**EXPANDING MEDS-TO-BEDS**

- 144/258 patients enrolled – 57.6%
- The pharmacist spent an average of 30 minutes daily on discharge education
- 41 total medications delivered
- Increased patient education



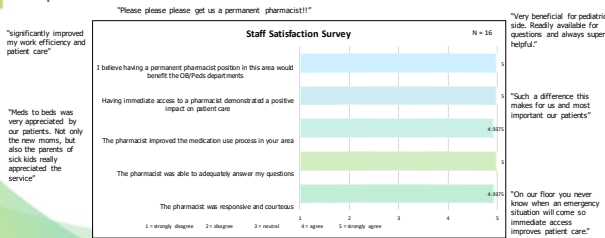
**RESULTS: SECONDARY OBJECTIVES**

- Track pharmacist time spent and impact of medication safety interventions
  - ~ 4.5 hours daily

Medication History Error Cost Analysis	
Average number of discrepancies per patient	2.9 discrepancies
Number of inpatient W/C admissions/ year	1614 admissions
Potential medication errors/year that can be avoided	4753 errors
Percent medication errors that are potentially harmful to patient*	2.50 %
Number of harmful medication errors avoided per year	118 harmful errors
Annual Gross savings (\$) (54000 per harmful error)*	\$570,456
Cost of additional pharmacist (average)	\$130,000

- Identify areas of improvement in antibiotic therapy in the pediatric, obstetric, gynecologic, and women's health population
  - 21 interventions
    - empiric therapy choices, neonatal and pediatric pharmacy dosing protocol updates, dosing recommendations, durations, etc

A post implementation survey was provided to assess the benefit, impact, and improvement in the medication use process throughout the pilot.



**DISCUSSION**

Error Avoidance (2.6% of interventions made)		\$5,800 per preventable event
Drug interactions	1	\$5,800
Medication initiations	2	\$11,600
Order rounding	5	\$29,000
Lab monitoring	6	\$34,800
Medication histories	13	\$75,400
<b>Total</b>	<b>27</b>	<b>\$156,600</b>

Cash Savings	
Order modifications	\$35,756
Medication discontinuation	\$1,224
Antibiotic recommendations	\$7,598
<b>Total</b>	<b>\$44,578</b>

## DISCUSSION

Non-Cash Saving benefits:

Improved medication safety, prescribing practice, and patient outcomes

Time saved

Process improvement

Emergencies attended

Provider consults

Discharge service

- Improved patient experience, improved workflow, provided consistent pharmacist lead patient education

## CONCLUSION

- Implementation of a pharmacist in the pediatric and obstetric settings at SPH had significant impacts on medication management, safety, and patient education
- Notable positive impacts on pediatric and obstetric populations include:
  - Improved patient care
  - Therapy optimization
  - Expansion of Meds-to-Beds services

## FUTURE DIRECTIONS/FOLLOW-UP

- Findings from this study will be presented to stakeholders
- Administrative discussion to evaluate a permanent pharmacist role on the WAC unit - approved
- Continue establishing the role of a pediatric and obstetric pharmacist
  - Workflow
  - Build relationships

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## QUESTIONS?

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