Medication History Prioritization Score:

Reimagining Pharmacy's Contribution to Medication Reconciliation through a Risk-Based Approach

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Neither presenter has any conflicts of interest to disclose.

Objectives

- To identify key workflow challenges with Pharmacy-assisted medication histories for the medication reconciliation process.
- To describe development and implementation of the Medication History Prioritization Score (MHPS).
- To describe the evolution of the staffing model for medication history technicians and its impact on the medication reconciliation process.

Assessment Questions

Challenges with implementing Pharmacy-assisted duties with transitions of care include all the following except:

a) limiting staffing
b) guidance on which order to for staff to work-up patients
c) large pools of qualified job applicants
d) unclear expectations of who is responsible for medication histories

What are important points to consider when deciding on a workflow incorporating a MHPS?

a) amount of time in walking between patients
b) working-relationship with pharmacists and nurses
c) ability to prioritize request for patients not picked up by algorithm
d) all the above

Problem Statement

Development of MHPS

Workflow

Future Directions

Who are we?

CoxHealth

Facilities

- 6 hospitals
- 80+ clinics
- 1,194 licensed beds
- 25 counties served

Staff

- 12,178 employees
- 537 physicians
- 217 residency graduates
- 2,343 bedside nurses

CareChex A Division of COMPARION

AMERICA'S TOP QUALITY HOSPITALS

DNV ACCREDITED Hospital

QUALITY SYSTEM CERTIFICATION DNV ISO 9001

MAGNET RECOGNIZED AMERICAN NURSES CREDENTIALING CENTER

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Why do hospitals and health-systems focus on transitions of care?

- Between 40% and 60% of serious medication errors[1,2]
- A top ten patient safety threat[3]
- Financial incentives to reduce readmissions and complications[4,5]
- Historically performed outside of Pharmacy[2]

1. *Br J Clin Pharmacol.* 2009; 67(6): 671-5.
2. *J Nurs Care Qual.* 2005; 20(2): 95-8.
3. ECRI. 2023.
4. *JAMA Netw Open.* 2021; 4(9): e2124672.
5. *Cochrane Database Syst Rev.* 2021; 11(11): CD009985.

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Our journey….

Started Med History Program (2015)	Created Transitions of Care Pharmacy Team (2016)	Distributed Transitions of Care Duties (2018)
Technicians only Mainly in the Emergency Department No formal documentation	2 Pharmacists 4 Technicians Split between Emergency Department and Inpatient Started using formalized notes	4 technicians on largest campus 1 technician on next largest All notes reviewed by staff pharmacists covering floor/unit

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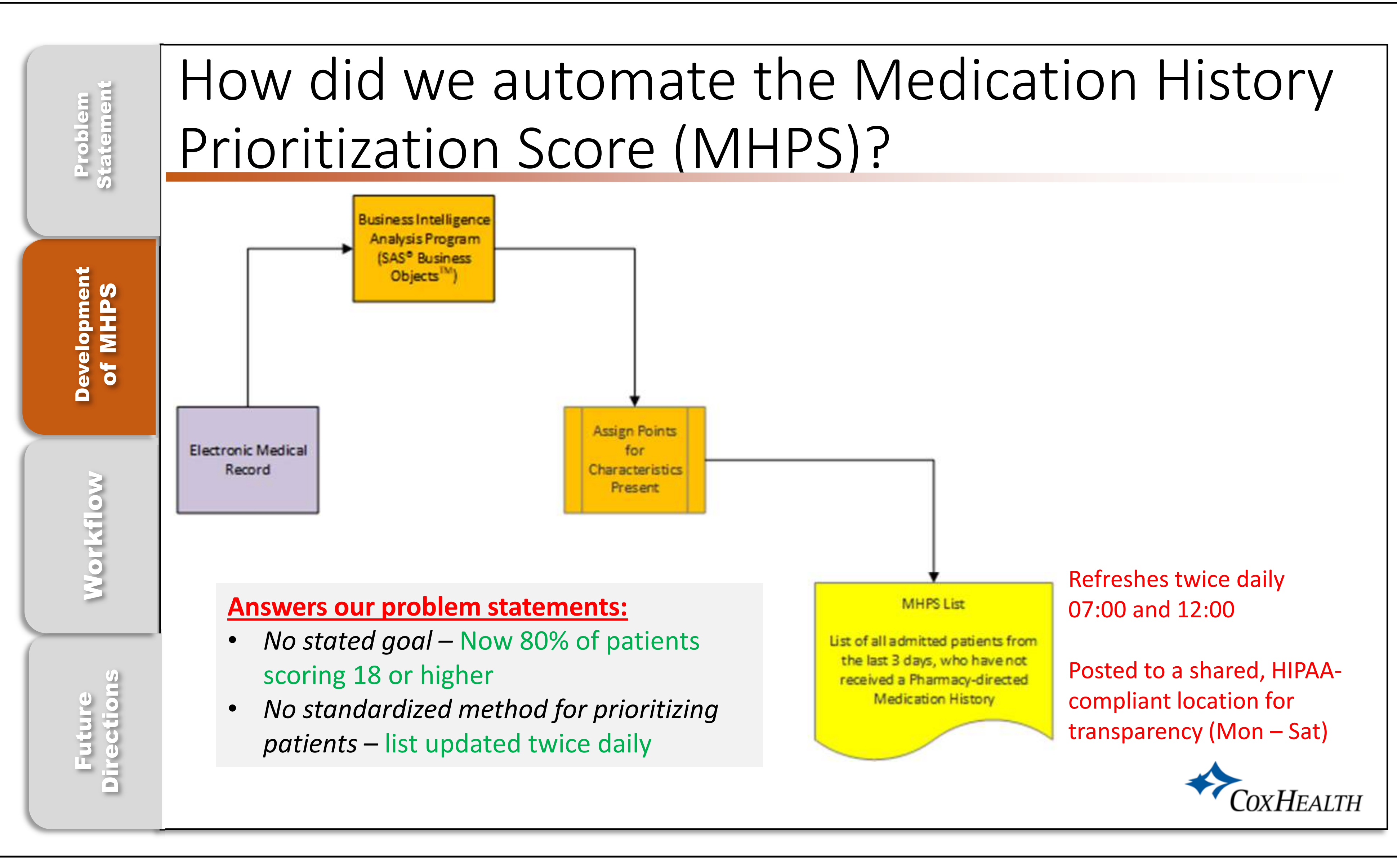
But then we had to ask for scrutiny….

- ISO 9001 Audit of the Medication History Process

- Findings:
  - Some Nursing had stopped taking medication histories.
  - Pharmacy was not reaching 100% of patients anywhere, were spread out over the hospital (confusion regarding the goal).
  - No standardized method of determining which patients were to receive a pharmacy-directed medication history.
  - Not all notes reviewed in a timely manner.

Problem Statements

Internal Source:
CoxHealth Internal Audit. November 19, 2021


Problem Statement
Development of MHPS
Workflow
Future Directions
How did we automate the Medication History Prioritization Score (MHPS)?
Business Intelligence Analysis Program (SAS® Business Objects™)
Electronic Medical Record
Assign Points for Characteristics Present
MHPS List
List of all admitted patients from the last 3 days, who have not received a Pharmacy-directed Medication History
Answers our problem statements:
• No stated goal – Now 80% of patients scoring 18 or higher
• No standardized method for prioritizing patients – list updated twice daily
Refreshes twice daily 07:00 and 12:00
Posted to a shared, HIPAA-compliant location for transparency (Mon – Sat)
CoxHealth

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What does the literature say?

Limited literature evidence that correlates with patient outcomes.

Compared to standard of practice, pharmacy-assisted med histories show improved patient-outcomes with:[1-4]

- Myocardial infarction or heart failure
- Higher count of ambulatory prescriptions
- Increased number of comorbidities
- Higher number of outpatient visits

Surprisingly, age or previous ADEs did not correlate per studies.[1, 4]

1. *Am J Health Syst Pharm.* 2020; 77(12): 972-78.
2. *J Hosp Med.* 2016; 11(1): 39-44.
3. *BMJ Open.* 2019; 9(5): e026259.
4. *Fam Med.* 2014; 46(8): 587-96.

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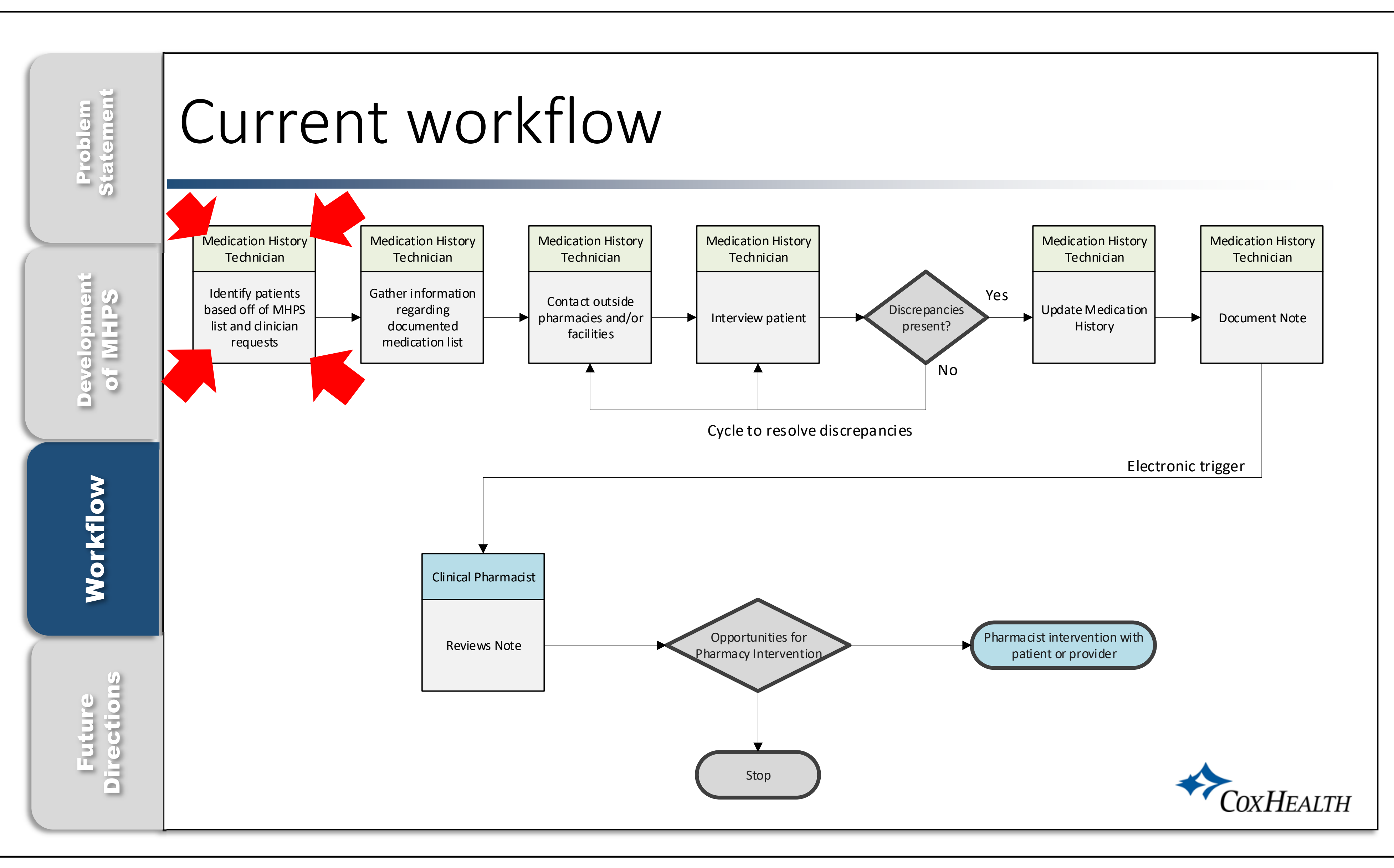
Final factors put in...

Parameter	Description	Relative Effect on Score
High Risk Diagnosis	Good evidence in literature of being correlated with improved patient outcomes with pharmacy-involvement with medication histories. Includes diagnoses of myocardial infarction and congestive heart failure. Only counts once regardless of how many are present.	Very High
Number of High-Risk Home Medications	Medications that increase the likelihood of clinician requests for Pharmacy assistance. Includes drug classes such as anticoagulants, immunosuppressive agents, and anticonvulsants. **DOES NOT** correspond directly with high-alert medications.	Very High
Number of Home Medications	Pure count of how many medications are listed within the home medication list.	High
Readmission	Sequentially decreasing scores are awarded for 7-day, 14-day, 30-day, and 60-day readmissions. Readmissions within 24 hours is excluded. Goal is to help determine if non-adherence contributed to readmission.	Moderate to High
Concerning Diagnosis	Diagnoses that increase likelihood of clinician requests for Pharmacy assistance. Includes diagnoses such as trauma and epilepsy. Only counts once regardless of how many are present. Also, does not add to score if a high-risk diagnosis is present.	Moderate
Medication History Not Done	Goal is to incentivize pharmacy technicians obtaining the medication history prior to nursing.	Small
Length of Stay	Sequentially decreasing scores are awarded the longer a patient has been admitted.	Small
Age	Points toward score only start to increase after age 50.	Very Small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Current workflow
Medication History Technician
Identify patients based off of MHPS list and clinician requests
Medication History Technician
Gather information regarding documented medication list
Medication History Technician
Contact outside pharmacies and/or facilities
Medication History Technician
Interview patient
Discrepancies present?
Yes
No
Medication History Technician
Update Medication History
Medication History Technician
Document Note
Cycle to resolve discrepancies
Electronic trigger
Clinical Pharmacist
Reviews Note
Opportunities for Pharmacy Intervention
Pharmacist intervention with patient or provider
Stop
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Problem Statement

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How did we operationalize this?

Attempts / Time

Workflow	Pros / Cons
• All technicians worked as a team over the entire hospital	• Ensured that all patients of highest need were seen. • Increased technician satisfaction: not having to dig into patients to determine appropriateness. • Eroded relationships with unit pharmacists and nurses. • Increased the amount of walking time between patients. • MHPS does not capture all needs (i.e. social determinants of health, new patient to system, etc.)
• Technicians went back to "zones", but still used MHPS as a guide	• Patients of highest need on a floor/unit were seen, but not necessarily same proportion for the hospital. • Re-established relationships with unit pharmacists and nurses. • Conserved walking time. • MHPS does not capture all needs (i.e. social determinants of health, new patient to system, etc.)
• Technicians in "zones" but asked to complete patients scoring highest first before starting others. Allow clinician request.	• Ensured that patients with highest need had documentation prior to provider discharge med reconciliation (a constant problem). • Increased technician satisfaction: further clarification of workflow goal. • Competing priorities from requests. (i.e. where does a requested patient go in order of priority?) • MHPS does not capture all needs (i.e. social determinants of health, new patient to system, etc.)

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Future Directions

- Applying MHPS across all campuses (*in-process*)
  - Utilizing technology / virtual care model
  - Patients with need can enter anywhere in the system
- Transparency between Pharmacy and Nursing on Med Hx (*in-process*)
- Fine-tuning model
- Applying same methodology to pharmacist discharge counseling (*in-process*)
  - Expecting prolonged pharmacist shortage

Assessment Questions

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Questions

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