

Providence St. Joseph Health

## Providence St. Joseph Health Digital Commons

---

Providence Pharmacy PGY1 Program at Providence Milwaukie and Providence Newberg Medical Centers 2021

Providence Pharmacy PGY1 Program at Providence Milwaukie and Providence Newberg Medical Centers

---

5-2021

### Evaluation of Medication History Technician (MHT) Expansion at a Large Tertiary Medical Center

Sarah Auer

Rochelle Castrillo

Tony Lucchi

Follow this and additional works at: [https://digitalcommons.psjhealth.org/oaa\\_mn\\_21](https://digitalcommons.psjhealth.org/oaa_mn_21)



Part of the [Pharmacy and Pharmaceutical Sciences Commons](#)

---

# Evaluation of Medication History Technician (MHT) Expansion at a Large Tertiary Medical Center



Sarah Auer, PharmD, Rochelle Castrillo, PharmD, and Tony Lucchi, PharmD

## Background

- The yearly joint commission National Patient Safety Goals for 2020 and 2021 stress the importance of using medications safely which includes an emphasis on medication reconciliation and decreasing medication discrepancies.<sup>1,2</sup>
  - Pharmacy Medication History Technicians (MHTs) work as an integral part of the medication reconciliation process to gather complete medication histories
  - The goal of medication reconciliation is to decrease medication discrepancies → decreased medication related adverse events → improve patient outcomes
- Pharmacist run medication reconciliation programs have shown decreased medication errors by over 80% when compared to standard medication reconciliation performed by nurses or other healthcare providers.<sup>3</sup>
- Cost of a preventable adverse drug event (ADE) is between \$4,800-10,375 per event.<sup>5</sup>
- Each documented medication history is valued at \$642
- Large tertiary medical center MHT expansion:
  - Adds two additional MHTs to the already existing team of four MHTs
  - Funded by medical center hospitalists group
  - Goal of capturing a larger proportion of medication histories in additional settings
- Many studies have assessed the impact of the implementation of a MHT program, however there is a lack of knowledge when it comes to the effect of adding additional MHT to an existing program.

## Purpose

- This study aims to evaluate the impact of the addition of two MHTs to an already existing program as well as evaluate how outside factors (i.e. quantity of medications, verification of methadone dose) involved in the medication reconciliation process effect productivity metrics.

## Objectives

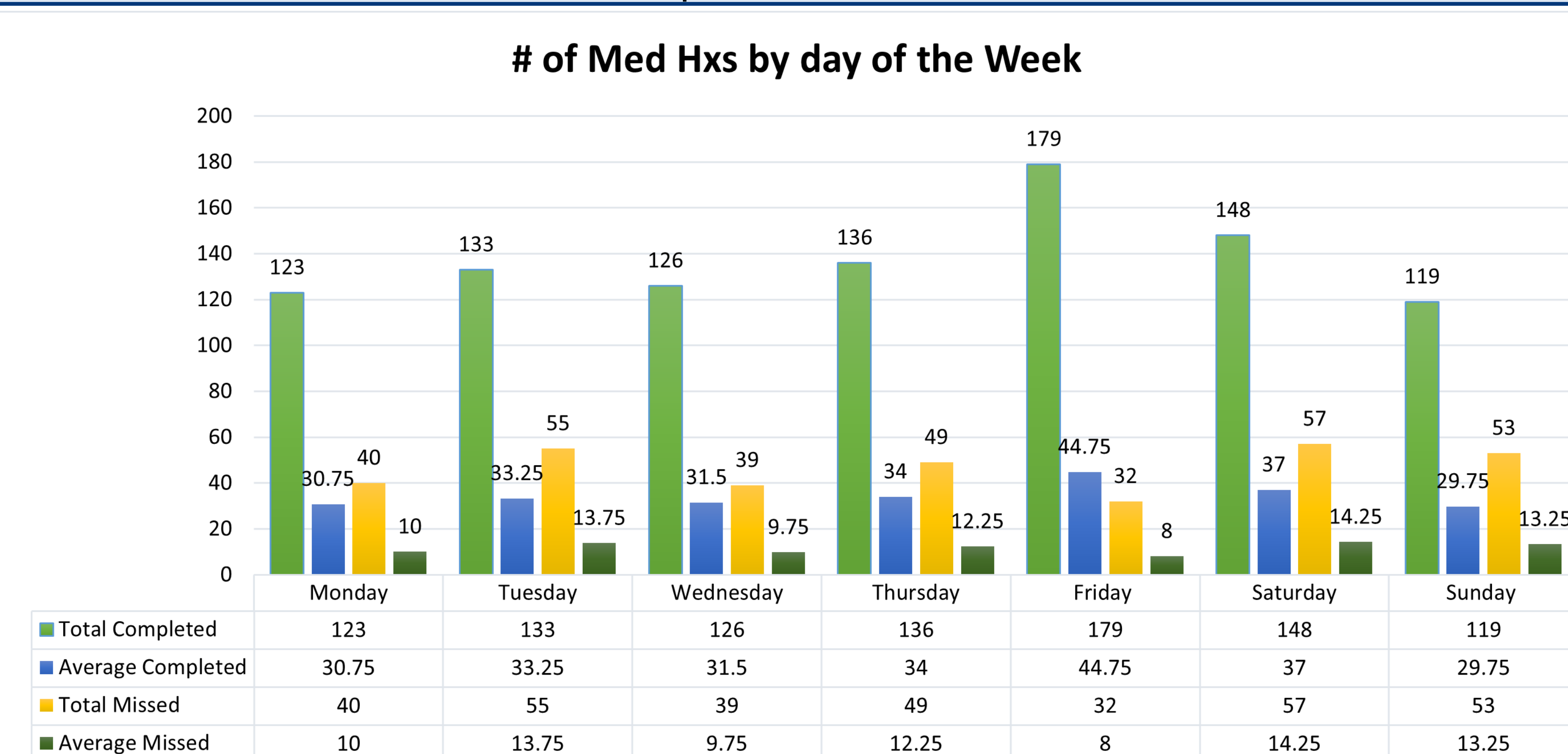
- Primary Objectives:**
  - Determine the number of medication histories completed and the number of opportunities missed
  - Identify the percent of time medication histories are complete within 12- and 24-hours of the patient being set for admission
  - Evaluate the accuracy of medication histories completed by medication history technicians
- Secondary Objectives:**
  - Identify effect of predetermined factors such as quantity of medications and availability of MARs on the number of medication histories completed by medication history technicians
  - Calculate the cost savings associated with technician completed medication histories compared to hospitalist completed medication histories
  - Calculate the cost savings associated with number of medication histories completed
  - Evaluate provider satisfaction with medication history technician program and medication history service

## Methodology

- IRB status: Approved; Study2020000877
- Study design: Prospective/Retrospective chart review
- Study timeline: Pre-expansion; November 2020-April 2021 (6 Months)
- Inclusion criteria: Patient's admitted through the emergency department
- Exclusion criteria: Patients that do not meet the inclusion criteria
- Patients will be screened for eligibility via EPIC data analysis – admissions data and intervention (I-vent) documentation
- Productivity factors will be documented using I-vent documentation with custom dotphrases in EPIC
  - Pharmacists:
    - Number of corrections made by RPH
  - Technicians:
    - Medication administration record (MAR) faxed
    - Quantity of medications on medication list
    - Methadone verification needed
    - Discrepancies of note
- Provider satisfaction will be determined through a Microsoft forms survey

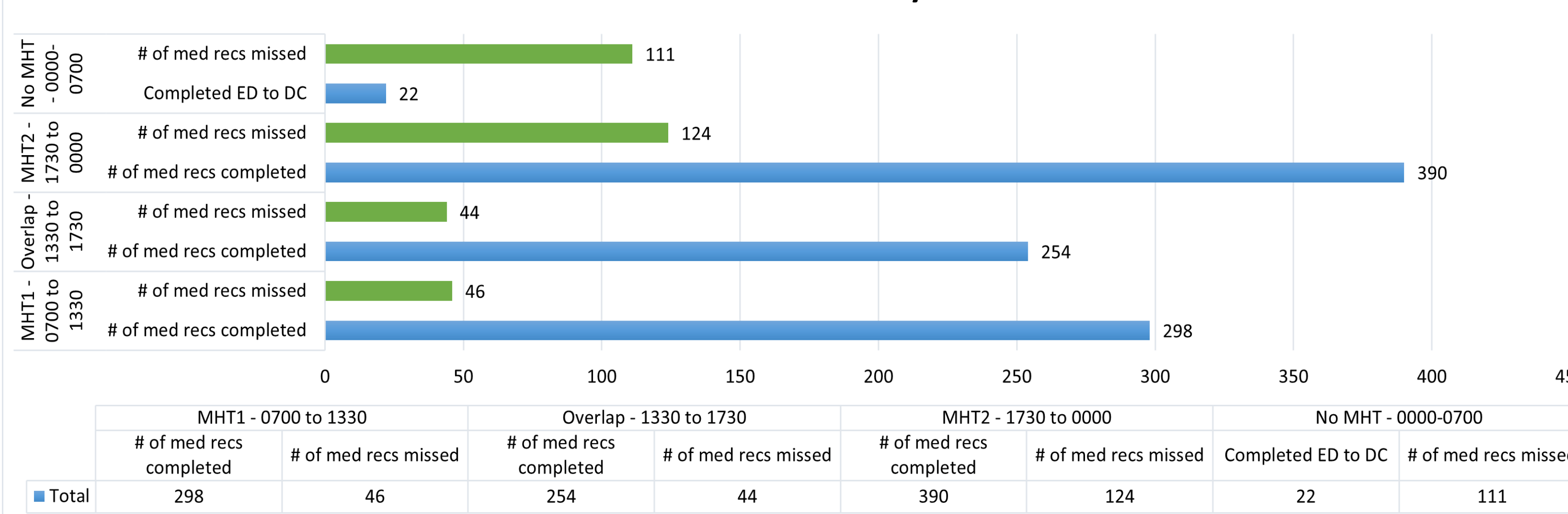
## Preliminary Results

### Completed vs. Missed



Completed Ivents + admission	813	Ivent + IP Bed Requested (Completed)	813
Completed Ivents + no IP bed (ED to DC)	151	No Ivent + IP Bed Requested (total missed)	325
Total Completed Ivents	964	Missed + no MHT	111
Total Admissions	1145	No Ivent + no IP Bed Requested	7

### Total # of Med Hxs by Shift



### Turnaround Time

	MHT on (0700-0000)			No MHT
	Completed	Bed after I-vent	No bed	Completed
Average	0:28:58	1:21:20	2:53:46	3:09:21
Median	1:16:23	0:18:00	0:21:00	5:13:37

- Completed = IP bed assigned + Med Hx completed
  - IP bed assigned to completed Med hx
- Bed after I-vent = IP bed assigned after Med Hx was already completed
  - I-vent opened to I-vent closed
- No Bed = No IP bed assigned (ED Discharge)
  - I-vent opened to I-vent closed

## Discussion

- January Findings:
  - Most completed = Friday/Saturday
  - Most missed = Tuesday/Saturday
  - The busiest shift seems to be MHT2 from 1730-0000 this is also when most med hxs are missed
  - 33.8% of medication histories missed were when there were no MHT present (111 out of 328)
  - Turnaround time on completed med hxs was on average 2.5 hours shorter when MHT were completing the medication histories vs. providers
  - All average and median turnaround times are within the preferred 24-hour timeframe
- Study Limitations:
  - No post-expansion data analysis due to time constraints and expansion go-live date
  - Limited productivity factor data collection due to time constraints and expansion go-live date
  - Productivity factor data: Implementation of a new dotphrase that is different from what the MHT were trained to use – may result in inconsistent documentation in I-vents
  - Turnaround time analysis uses different start times depending on the admission scenario
    - ED to DC
    - IP bed requested + med hx
    - Med hx + IP bed requested
  - Due to scheduling challenges, there may or may not be MHT overlap for the entire time from 1330-1730

## Preliminary Conclusions

- A much higher percentage of medication histories were missed when MHTs were not present in the ED
- The presence of MHTs noticeably reduced the turnaround time of medication histories completed
- On average, if a medication history was completed it was completed within the 24-hour preferred timeframe
- The additional MHT coverage as a part of the expansion will help to capture more medication histories
- Future direction:
  - Post-expansion data analysis
  - 24-hour MHT coverage

## References

- The Joint Commission Web site. The Joint Commission National Patient Safety Goals Effective January 2020 Hospital Accreditation Program. <https://www.jointcommission.org/-/media/tjc/documents/standards/national-patient-safety-goals/2020/2020-hap-npsg-goals-final.pdf?db=web&hash=17AB9546CAD521158182BC25A8387B2E>. Accessed November 15, 2020.
- The Joint Commission Web site. The Joint Commission National Patient Safety Goals Effective January 2021 Hospital Accreditation Program. <https://www.jointcommission.org/-/media/tjc/documents/standards/national-patient-safety-goals/2021/simplified-2021-hap-npsg-goals-final-11420.pdf>
- Pevnick JM, Nguyen C, Jackevicius CA, Palmer KA, Shane R, Cook-Wiens G, Rogatko A, Bear M, Rosen O, Seki D, Doyle B, Desai A, Bell DS. Improving admission medication reconciliation with pharmacists or pharmacy technicians in the emergency department: a randomised controlled trial. *BMJ Qual Saf.* 2018 Jul;27(7):512-520.
- Bates DW, Boyle DL, Vander Vliet MB, Schneider J, Leape L. Relationship between medication errors and adverse drug events. *J Gen Intern Med.* 1995;10(4):199-205.
- Jha AK, Kuperman GJ, Rittenberg E, et al. Identifying hospital admissions due to adverse drug events using a computer-based monitor. *Pharmacoepidemiol Drug Saf.* 2001;10(2):113-9.