

Improving Resident Handoffs and Follow-up in Internal Medicine Clinic

A Quality Improvement Study

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ABSTRACT

Aim: Improve resident hand-off among colleagues and follow-up on primary care clinic electronic medical record (EMR) inbox items.

Current state: Residents in primary care clinics identified a lapse in follow-up of outpatient EMR inbox tasks (identified in the EMR as results, telephone encounters, and Rx request). They observed multiple items within resident colleagues' and their own inboxes from weeks and months prior that had not been addressed.

Quality Improvement Method

Participants: Cleveland Clinic Internal Medicine residents (PGY1, PGY2, PGY3) at an ambulatory clinic (40 residents).

Variables collected:

- Number of EMR inbox items and time to completion (results, telephone encounters and Rx requests)
- PGY level
- Resident gender

Intervention

1. Phase 1: Email
2. Phase 2: Face to face teaching
- 3 Phase 3: Preceptor session

Results: Under study



BACKGROUND

Reasons for inadequate follow-up

Time constraints

- *JAMA Internal Medicine* Murphy et al: Estimates physicians require nearly 70 minutes daily to process EMR inbox notifications¹

Burden of the quantity of items to be addressed

- *JAMA Internal Medicine* Murphy et al: PCPs (n=46) received on average over 75 notifications daily¹

Insufficient training or reinforcement of training of the follow-up process

- *Journal of the American Medical Informatics Association* Singh et al: Less than half of respondents reported receiving sufficient training on using EMR notification system²

Factors combine to place patients at risk for harm when EMR items are not appropriately addressed and managed

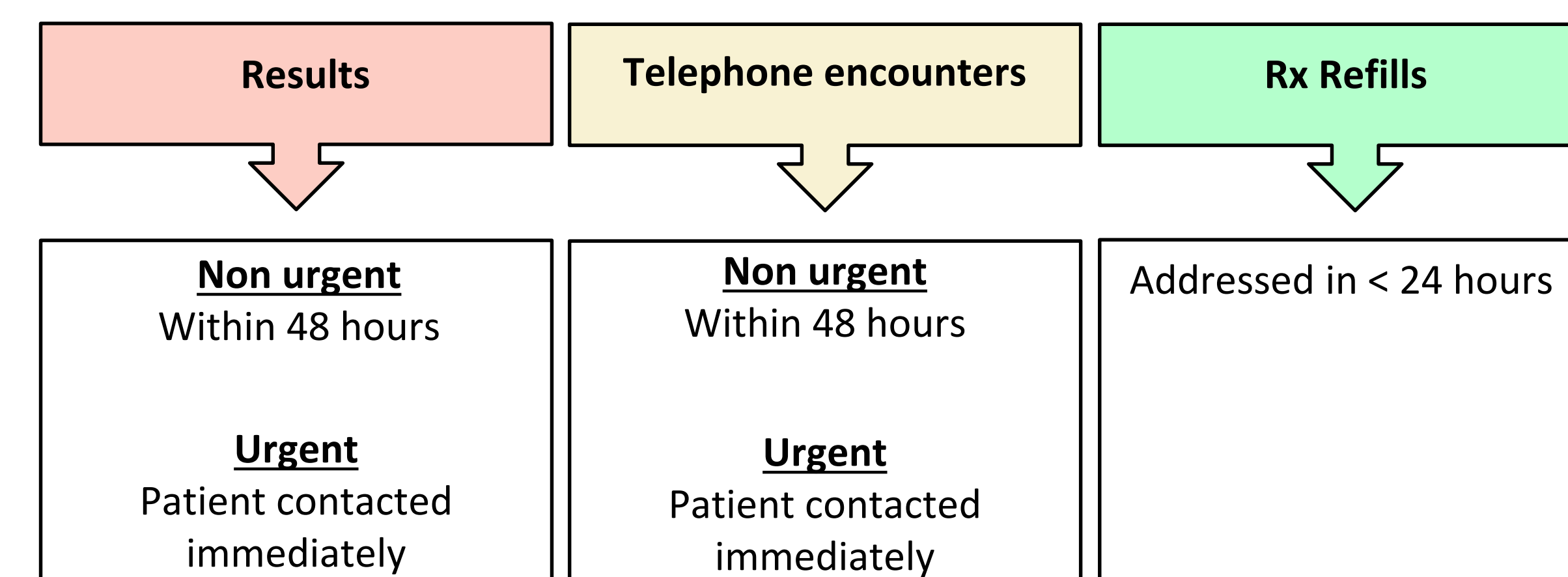
- *BMC Family Practice* Wahls et al: Nearly one third of PCPs who responded to survey reported one or more of their patients experienced treatment delay in the prior two weeks due to a missed result³

CCF MODEL

4+1 Training Model

Group	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
A	Clinic	VM Clinic	VM Clinic	Endocrine Clinic	Endocrine Clinic	Clinic	MICU	MICU	MICU	MICU
B	Inpatient Medicine	Clinic	Inpatient Medicine	Inpatient Medicine	Inpatient Medicine	Inpatient Medicine	Clinic	Research	Research	Vacation
C	Inpatient Heme Onc	Inpatient Heme Onc	Clinic	Inpatient Cardiology	Inpatient Cardiology	Inpatient Cardiology	Inpatient Cardiology	Clinic	Pulmonary Consults	Pulmonary Consults
D	CICU	CICU	CICU	Clinic	Medicine Wards	Medicine Wards	Medicine Wards	Medicine Wards	Clinic	Renal Consults

Time Expectations: EMR Inbox Management



How do we ensure continuity of care and follow-up on clinic items?

INNOVATION

Phase 1

1. **Email:** Encourages resident hand-off and completion of all inbox tasks.



Phase 2

2. **Face to face teaching:** Resident directed teaching of inbox management, suggestion for handoff and reminder of program rules regarding follow-up of inbox tasks.



Phase 3

3. **Preceptor session:** Dedicated time each week for clinic preceptor to sit with clinic residents to encourage and assist with inbox management.



FUTURE DIRECTIONS

- We currently have obtained data for a single resident clinic after Phase 1 and 2 (40 residents).
- We started implementing Phase 3.
- Throughout this process we will continue to interpret our results.
- Our goal is to ensure all EMR inbox items are appropriately and efficiently addressed while supporting resident education and continuity of care in primary care clinic.

References:

1. Murphy, Daniel R., et al. "The Burden of Inbox Notifications in Commercial Electronic Health Records." *JAMA internal medicine* 176.4 (2016): 559-560.

2. Singh, Hardeep, et al. "Primary care practitioners' views on test result management in EHR-enabled health systems: a national survey." *Journal of the American Medical Informatics Association* 20.4 (2013): 727-735.

3. Wahls, Terry L., and Peter M. Cram. "The frequency of missed test results and associated treatment delays in a highly computerized health system." *BMC family practice* 8.1 (2007): 1.

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