

# University of Alberta Hospital (UAH) GIM ED Evening service: Formalized on-call staff physician check-in

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## Background, Problem and Aim Statement:

The General Internal Medicine (GIM) service at UAH provides 24hr coverage in the Emergency Department (ED) for admissions and consultations.

Service coverage is split into three shifts of approximately eight hours each, and they are populated with core senior (PGY-2 and PGY-3) internal medicine residents. The evening GIM service in the ED is staffed with two senior residents from 1630-0000hr and one senior resident from 0000hr-0900hr, and then the day-time team takes over from 0830-1630hr. An attending GIM physician is in-house during the day-time shift from 0830hr-to-1630hr. After that there is a GIM staff on-call, but generally not in-house. First call goes to the GIM senior resident covering the ED and they can relay consults/questions if present. Typically, the GIM staff on-call would call the senior residents on evening shift around 2200hr to review consults, and would generally review by phone, unless there were large numbers of pending consults, or other pressing concerns.

UAH ED accepts vastly different types of patients with variable diagnoses, presentations and acuity. Historical data on ED arrival volume shows that the number of patients presenting to ED starts to peak in the late afternoon till about 2200hr. Moreover, a 2016 Chart review conducted by Kassam et al. (2017) analyzed ED consultations to the 9 main Medical services with admitting privileges (Family Medicine, GIM, Cardiology, Gastroenterology, Nephrology, Neurology, Pulmonary, Hematology and Geriatrics) at the UAH. Results showed that GIM was the admitting service for a majority of patients despite initial consults to other services and in general the GIM ED consult service had the highest number of consults and admissions from any of the admitting medicine subspecialties. The busiest period for patients presenting to the UAH ED is between 1400-2200hr and thus unsurprisingly the GIM ED service received 53% of its consults during the evening service from 1700-0000hr.

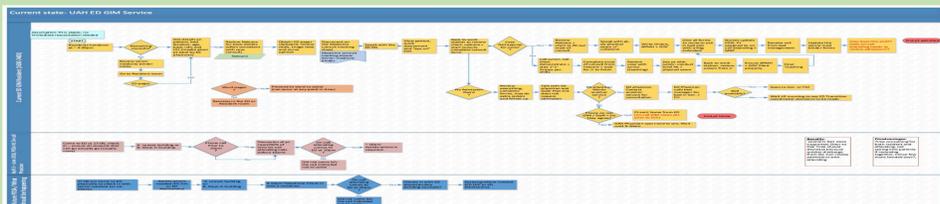
When the highest patient ED volume occurs, there is no GIM staff physician directly involved with consultation management, rather; they are available remotely to review diagnostic dilemmas, admissions/consults, etc. Furthermore, not all ED GIM consultations require admission to hospital, some may just require GIM related disposition, such as clinic follow up, etc. These patients can not be discharged home from the ED, by residents, unless a GIM staff physician physically reviews and examines the patient. Therefore these patients are often 'held-over' in the ED until the next morning when they are reviewed by the AM GIM staff physician. These patients occupy beds within the ED, reduce ED patient flow, and increase the length of time patients are in the ED.

**Problem:** Between January to March, 2018, 9.3% of discharged patients were awaiting review by the GIM staff physician in the morning; this results in very lengthy ED times for these patients, decreased patient experience/satisfaction, takes up beds in the ED and decreases patient flow in the ED.

**AIM/Proposal:** Encourage the GIM on-call physician to physically check-in with the evening shift GIM ED consult residents at 1700hr and between 2100-2200hr, which will allow for held-over patients to be assessed during these time points, allowing for earlier discharge. This should result in decreased time in ED for some ED patients, increase ED bed availability, and provide increased ED flow. It should also result in increased support for GIM residents in the ED, improve resident morale, and optimize patient care.

## Process Assessment:

The Project team developed a cross functional map, reviewed EDIS data, performed a cycle time analysis of GIM inpatient physician, Gemba walk Data recording/patient tracking for GIM within the ED, the UAH ED consultation process, how the admission protocol is applied and multi-service consultations, non-medically active consultations, mechanics of a consultation, and educational responsibilities for junior residents and medical students. The team also reviewed the concept of 'hold-over' patients and how they would routinely wait in the emergency department until 9-10:30AM the following day to be reviewed by the GIM day-physician. The team then reviewed the subsequent impact on bed utilization and time spent in the emergency department for this population. Post intervention; the team created questionnaires to review resident, GIM and ED physician-staff and their opinion, satisfaction, and concerns with the intervention.



## Collaborations & Communication Strategies:

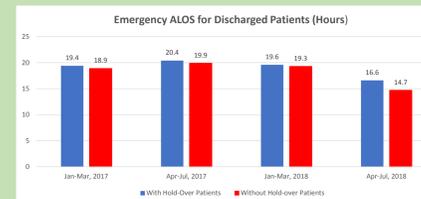
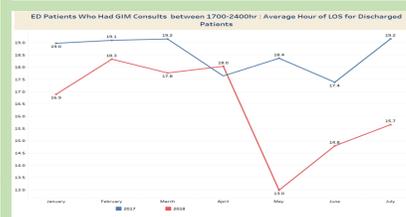
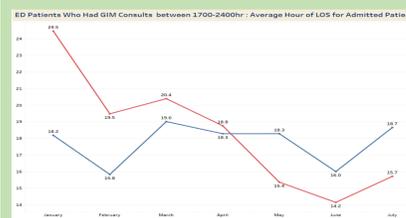
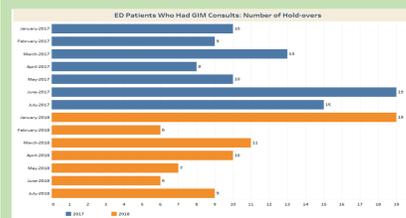
**Collaboration Strategy:** UAH operational and medical leaders support this project both locally and Edmonton zone wide. The project team was composed of GIM and ED staff physicians, internal medicine residents, and QI consultants. Engagement with the UAH GIM ED consult team provided process insight and shared learning.

## Communication Strategy:

- Memos distributed from divisional director of general internal medicine to the division members
- Follow-up emails from the division director to the division members
- Announcement to the core internal medicine resident cohort at their academic half-day and follow up email
- Real-time questionnaires to capture PDSA model feedback from GIM staff, ED physicians, and internal medicine senior residents (PGY-2 and 3)
- Feedback obtained from these questionnaires, 1-on-1 consultation between various stakeholders and various QI consultants.

## Improvement Selection: PDSA cycle #1 April-July, 2018

Basic Measures for ED Patients Who had GIM Consults						
	Jan-Mar, 2017	Apr-Jul, 2017	Jan-Mar, 2018	Apr-Jul, 2018	Improvement (2018)	% improvement (2018)
# of Hold-overs	32	52	36	32	-4	-7.7%
% of hold-over out of Discharged Patients	40.5%	53.6%	49.3%	41.6%	-0.1	-15.7%
Consult Requested to Admission Decision (Hrs)	6.1	6	6.2	5.2	-1	-16.1%
ED ALOS for Discharged Patients without Hold-over Patients(hr)	18.9	19.9	19.3	14.7	-4.6	-23.8%
ED ALOS for Discharged Patients with Hold-over Patients(hr)	19.4	20.4	19.6	16.6	-3	-15.3%
ED ALOS for Admitted Patients (hr)	17.6	18.1	21.4	16.5	-4.9	-22.9%
EIP ALOS (hr)	6.3	6.4	9.6	5.4	-4.2	-43.8%



Thus far we have been able to capture data from the implementation of PDSA#1 from April to July of 2018. Trends from this time period have been itemized below.

- GIM consults in 2018 fluctuate from month-to-month, but are consistent with 2017 trends
- GIM 'hold-overs' e.g. patients that do not require admission, but may benefit from GIM follow up is unchanged between 2017 and 2018. Together these indicate that there has not been a significant change in the admission/consulting practice for GIM in the UAH ED
- ED LOS for GIM hold-over patients has been reduced – meaning the time from GIM consultation to their discharge from the ED has been reduced (ALOS is approximately 15% shorter than before the intervention)
- Length of time in the ED for GIM admitted patients is also reduced (down 23% over 2018), but has a concordant trend with the 2017 data, unlike hold-over patients implying improvements may, at least in part, be due to other interventions.

Survey Results: (Key results) – Respondents: GIM staff (13/32), ER staff (9/31), GIM residents (10/36)

- 68% of responding GIM staff, GIM residents, and ED staff (N=22) were in agreement that this change has resulted in fewer patients being held-over
- 80% of surveyed GIM residents (N=8) felt more supported since this change and report minimal interruption to their workflow
- Almost all GIM staff are checking in with their senior residents in the above time, but only about 30% are self-reporting that they consistently come in to follow up with their GIM seniors (e.g. physically check-in >80% of the time) (N=4)
- Almost 45% of GIM staff (N=6) report that their call requirements have become more onerous as a result – Could this lead to physician fatigue?

**Reinforce Ownership, Measurement & Continuous Improvement:** The QI team will continue to collect data and monitor various metrics, including 'hold-over' LOS. The initial data is very promising; and it seems that PDSA#1 is having a positive impact in terms of LOS, which is being perceived as fewer patients being 'held-over' by the ED staff, and has resulted in senior residents feeling more supported. Thus there is ample evidence to continue with this intervention and move onto PDSA#2

## PDSA #2:

1. Reinforce GIM Check-in Practices (Physically check in at 1700hr and between 2100-2200hr)
  - Increase frequency of physical check-in during the evening shift (Goal: Checking in greater than 80% of the time)
  - Monitor LOS and frequency of evening-shift 'hold-over' patients
2. Evaluate GIM staff wellbeing
  - 45% of GIM staff reported that call was more onerous since the change
  - Is this resulting in more fatigue? Physician burn-out?
  - What can be done to mitigate this?

## Lessons learned:

- Busiest time in the UAH ED overlaps with the GIM ED evening shift from 1630-2200hr
- By having staff check in at 1700hr and between 2100-2200hr; there has been perceived reduction in patients being 'held-over' by GIM
- Concomitant metrics that have also improved are length of stay for all patients; and we will need to continue to monitor to see if these improvements are secondary to this intervention, or some-other factors
- Monitoring other metrics, such as consult-time, time to GIM consult, etc, to see if this change have made an indirect impact on them as well.
- GIM senior residents feeling more supported, but it has also identified that call is more onerous for GIM staff and may lead to physician fatigue – and this will need to be explored further
- Need to further clarify the role, and duties, of GIM-staff when they check-in with their senior residents – this could be facilitated by the creation of a standardized guideline of recommended tasks-job aide sheet
- There is potential to further improve GIM workflow by increasing the interaction between GIM staff and ED physicians

## Why this Research Matters

**To Patients**  
Reduced length of stays in the ED and thus potential for improved healthcare experiences

**To Albertans**  
More timely access to definitive care options for certain patients.

**To the Healthcare System**  
Improved patient flow should lead to greater patient volumes in the ED and therefore more efficient utilization of health resources.

DEFINE OPPORTUNITY

BUILD UNDERSTANDING

MANAGE CHANGE

ACT TO IMPROVE

SUSTAIN RESULTS

SHARE LEARNING

