



Improving timely transfers from acute care to the local palliative care unit for patients at the end of life

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Background: Despite evidence showing that nearly two thirds of the Canadian population prefer to die at home, the majority die in hospital. Honoring a patient's wish for their preferred location of death is an essential component in end-of-life care. Therefore, for those patients admitted to acute care whose choice is to transfer to a palliative care unit for end-of-life care, it is imperative that this occurs in a safe and timely manner. The General Internal Medicine ward at this local tertiary care academic center, did not have a standardized process for transferring patients at the end-of-life to the local palliative care unit. With bed calls made between Monday to Saturday at 8 am, weekday and weekend transfer times ranged between 1 to 6 hours. The aim of this project was to establish a standardized, safe and efficient patient transfer from acute care to the palliative care unit for a daily standard arrival time.

Methods: A multidisciplinary quality improvement team was formed to analyze the transfer process. Several Plan Do Study Act cycles were tested, targeting all steps of the transfer process and turnaround time. An outcome measure aiming for a turnaround time of two hours was set as the target.

Results: A total of fourteen patient transfers were included. Average transfer time during the weekday was reduced from a baseline average of 180.2 to 128.3 min. This change was found to be statistically significant and sustained ($P < 0.003$). The average transfer time on weekends remained stable at 234 min. The outcome target of a 10:00 am arrival time to the palliative care unit was achieved 42% of the time.

Conclusions: This project remains on-going and early data is encouraging as it met the targeted transfer time 42% of the time. Fidelity in the process measures helped to meet the targeted turnaround time of two hours for a safe and efficient transfer to the palliative care unit and ensured patients got to their preferred location for end of life care. The goal is to expand this project to other general internal medicine wards across the organization.

Keywords: Acute care; transfers; palliative care unit; general internal medicine; quality improvement

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Introduction

Honouring a patient's wish for their preferred location of death is an essential component in end-of-life care (EOLC). A recent survey revealed that despite the fact that 2/3 of Canadians have expressed a preference to die at home, the majority die in an acute care setting (1). In addition to that, patients nearing the end of life (EOL) prioritize adequate symptoms management and being surrounded by loved ones regardless of their care setting. Thus, patients who choose to be cared for in another setting such as a palliative care unit (PCU), should be able to transition to their setting of choice with ease and with their loved one present. For this reason, it is imperative that health care systems align their processes to allow for safe and timely transfers. Effective interventions have many benefits such as reducing patient's length of stay in hospital referred to as Alternative Level of Care (ALC) days in Ontario, Canada hospitals, in addition to ensuring the most optimal end of life care experience is achieved. Prolonged acute care stays are a major contributor to poor acute care bed utilization (2). A previous study has shown that delays in transfers from acute care were associated with increased ALC bed occupancy, increase healthcare cost and contributed to the inability to repatriate patients to other settings (3). Noted by the Ontario Hospital Association (2019) was the growing number of ALC patients remaining in hospital longer when

services were inaccessible or unavailable (4). Such delays are known to be costly to the healthcare system. At the local level, those patients that are impacted greatly by such delays are those in the emergency department. Patients in the hospital emergency department are often waiting between one to three days before being transferred to an acute care unit. Such delays have consistent effects on patient care. Therefore these inefficiencies and gaps in the delivery of care supports the need for a transformative approach to improving patient flow and transfer processes within the organization (5). An interprofessional team thus embarked on a quality improvement project to help improve transitions at EOL.

Local context

This hospital is a tertiary care centre that is associated with a PCU that is geographically adjacent to the main hospital building and operationally and administratively separate from acute care. The PCU is a 56-bed inpatient unit with a mandate to provide comprehensive EOLC for patients with a prognosis of <3 months. Of the 56 beds, the unit also reserves a few beds for patients adopting a palliative approach to care with a longer prognosis of one year or less. The PCU accepts referrals from all acute care units in hospitals across the province of Ontario, Canada.

The organization did not have a standardized time or process for patients transferring from acute care to PCU. However, there is a standardized application that needs to be submitted to the administrative staff of the PCU for review prior to admission. Once the application is approved, the social worker is informed of acceptance and is provided with a bed offer. Once a bed offer was accepted by the patient and family, the discharge from the General Internal Medicine (GIM) unit (C6) to the PCU could take on average between one to six hours to complete.

A limiting factor to timely transfers is the institution's current hybrid medical record system. In this system, any patient admitted in acute care has an electronic medical record chart that allows for viewing of clinical notes and test/laboratory results, as well as a physical chart in the form of a binder on the admitted unit in which nursing daily observations and physician orders are written.

The aim of this quality improvement project was to establish a standardized, safe and efficient patient transfer from GIM (C6) unit to the PCU for a standard arrival time of 10 am, Monday to Saturday, by May 2020.

An inter-professional quality improvement (QI) team was

Highlight box

Key findings

- In this quality improvement initiative, standardizing a transfer process improved patient transfer times from acute care to a palliative care unit by 29% (from 180.2 to 128.3 min; $P < 0.003$).

What is known and what is new?

- Despite the majority of Canadian's wishing to die at home, most continue to experience end-of-life in hospital; creating a strain on the health care system.
- Initiatives that help address hospital occupancy have recently been encouraged.
- Improving the timely transfer of patients at end-of-life from acute care to a palliative care setting can be a useful initiative to address hospital occupancy issues. This is a complex processes requiring the commitment of multiple stakeholders.

What is the implication, and what should change now?

- Improved transfer times can correspond to cost savings and reduced acute care wait times.
- Expanding the outlined initiative across the organization will amplify its benefits to patients and the health care system.

Table 1 Timeline of QI project and key interventions

Timeline	Intervention	Details
September 2019	Start of QI project Project charter	<ul style="list-style-type: none"> • Identification of the problem through chart reviews and analyzing arrival time of the patient • Assemblage of a QI team
October 2019	Root cause analysis Ischikawa and driver diagrams Process Mapping Direct Observation Collection of qualitative data	<ul style="list-style-type: none"> • C6 team and PCU team met to complete current state and future state process mapping • SW shadowed Residents from 7 am – 6 pm • Worked with patients and families to find a mutually agreed upon transfer time
November 2019	Stakeholder engagement Co-designing pre-discharge orders with physician's (MD's) and RN's and transfer time with patients and families	<ul style="list-style-type: none"> • Working with our PCU colleagues, Residents/Staff MD's, Porters and C6 RN's, patients and families • Dotmotcracy
December 2019	PCB Family of measures established	<ul style="list-style-type: none"> • Designed and completed PCB • Outcome measure: # of patients that arrived to the PCU by 10 am/2-hour turnaround time • Process measures: (I) % of patients with pre-discharge orders, (II) % of patients with pre-discharge summaries, (III) % of Porters who arrived at the designated time, (IV) % of Families who accompanied their loved one to the PCU
January to February 2020	PDSA cycles	<ul style="list-style-type: none"> • PCB used for on every PCU transfer
March 2020	C6 team deployed to the COVID-19 unit	<ul style="list-style-type: none"> • Project on hold, although some COVID-19 patients were transferred to the PCU

QI, quality improvement; PCU, palliative care unit; SW, social worker; RN, registered nurse; PCB, Process Control Board; PDSA, Plan-Do-Study-Act.

formed to analyze the transfer process for patients. Several change cycles were tested, targeting all steps of the transfer process. A turnaround time of two hours was set as the target (time between bed offer to the actual PCU transfer). This target time was set in collaboration with the PCU physicians and due to confounding factors such as pharmacy hours.

Methods

Project design

This project was a time series in accordance with the Standards for Quality Improvement Reporting Excellence Guidelines 2.0 (5) and used a lean six sigma improvement framework (6-8). Inclusion criteria were GIM and oncology patients on C6 who had a prognosis of <3 months and a preference for the EOLC to take place in a PCU. Baseline data was collected between September 2019 and

March 2020 (*Table 1*).

Ethical statement

Ethical considerations for this QI project were assessed through Sunnybrook Research Ethics Board -Self-Assessment Tool and were deemed to not require a full Research Ethics Board review.

Improvement framework

A Lean Six Sigma framework was adopted for this QI project. Lean Six Sigma in healthcare is an improvement framework focused on eliminating waste and variation of a process, with a general goal to improve efficiency and achieve standardization. This lens was used in this QI project to design the standardized transfer process between the GIM (C6) acute care unit and PCU (6-8).

Consistent with continuous QI project methodology,

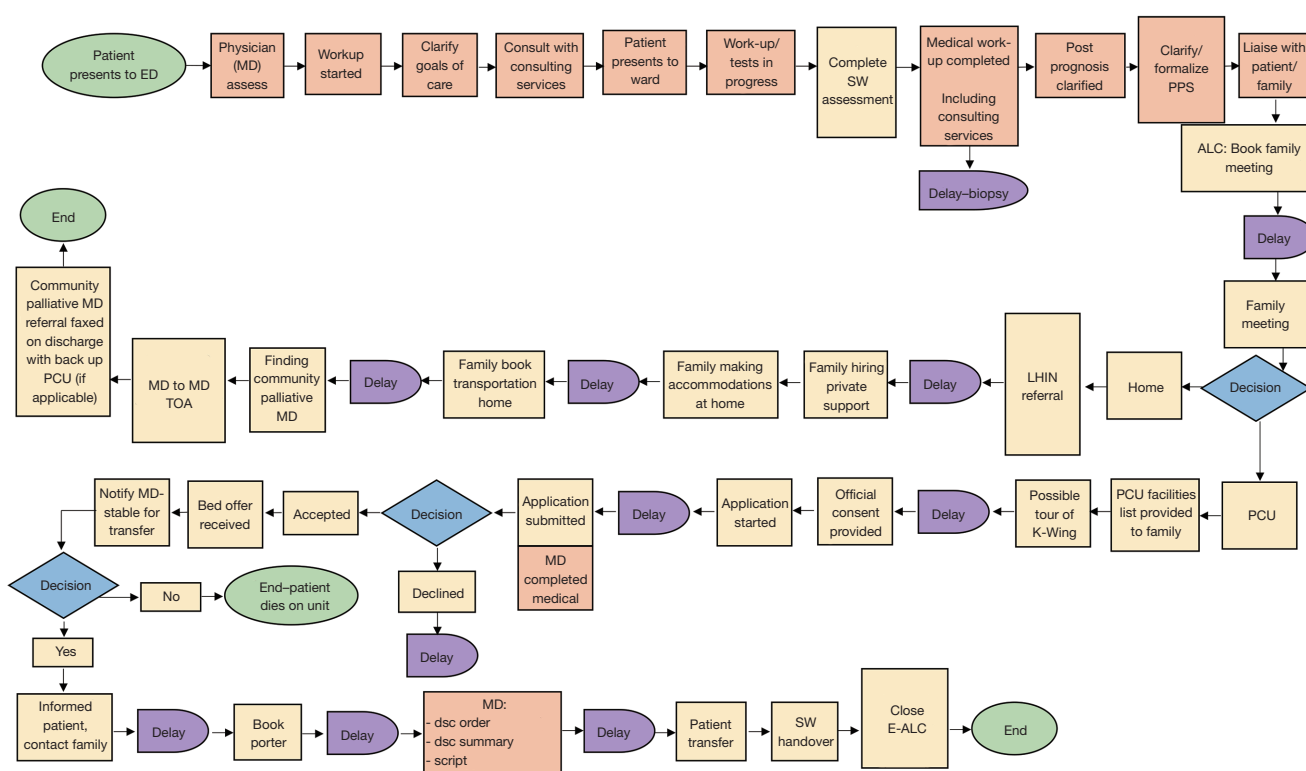


Figure 1 Mapping process for palliative patient: ED to Home vs. PCU. ED, emergency department; SW, social worker; PPS, Palliative Performance Scale; ALC, alternate level of care; LHIN, Local Health Integration Network; TOA, transfer of accountability; PCU, palliative care unit; dsc, discharge; E-ALC, electronic alternate level of care.

small cycle changes were designed and implemented in an incremental way via Plan-Do-Study-Act (PDSA) cycles (9). In this framework, each suggested intervention/change was initially tested on a small scale and evaluated prior to being fully implemented on the unit. Moreover, once the interventions were implemented, the fidelity and effectiveness of the implemented measures were continuously evaluated via the established process measures. Lastly findings were used to inform the immediate next steps in the project in order to improve fidelity of the implemented changes.

Root cause analysis

To address the domains of efficiency and timelines, the PCU transfer process for a patient was mapped from initial entry point (emergency department) to the PCU (Figure 1). The most common reasons for the delays were: (I) waiting for the discharge order and summary, (II) delay in booking the porter, (III) waiting for family to arrive on the unit to

accompany their loved one to the PCU.

Healthcare providers both on the PCU and GIM (C6) units were interviewed to elicit their perspectives on how transfers and admissions impacted their daily workload.

Interventions to reduce transfer times

To address the root causes, the following four interventions were introduced.

The first change involved the implementation of pre-discharge orders written by a GIM physician the night prior to the day the patient transfer was to take place (Appendix 1). This change concept was co-designed with the relevant stakeholders including residents, staff physicians and nurses. Lean methodology was used to conduct direct observation of a resident's work flow to ensure feasibility of this change.

The second change involved the implementation of a standard booking time with the Portering Service for 9:30 am pick-up. Portering Service Manager was engaged early on in the stakeholder process and was part of the direct

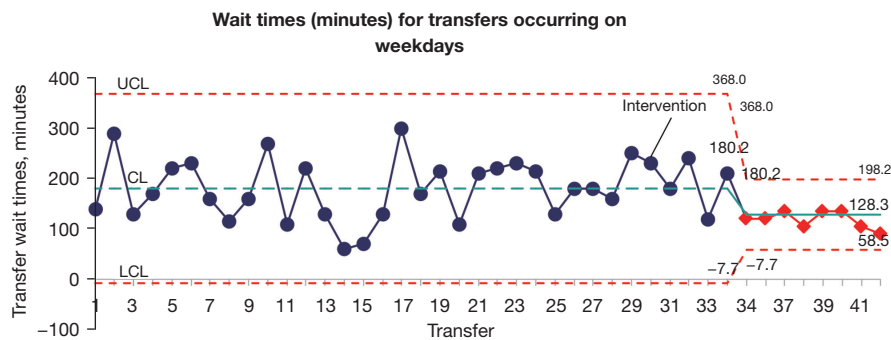


Figure 2 Change in weekday transfer time over the course of the project. UCL, upper control limit; CL, centre line; LCL, lower control limit.

observation flow process map.

The third and fourth change in the process was the social worker informing the patient's family/next of kin ahead that the transfer time to the PCU would take place at 9:30 am. This information allowed families/next of kin to plan accordingly and be available for the transfer. The 9:30 am transfer time was established based on survey results [ten families; PCU colleagues (five nurses, three physicians, and manager)].

Family of measures

A family of measures including outcome, process and balancing was collected and used to inform successive PDSA cycles. The project's outcome measure is the percentage of patients who arrive at the PCU at new standard time for 10:00 am (two-hour turnaround time).

Process measures included:

- ❖ Percentage of pre-discharge orders written;
- ❖ Percentage of pre-discharge summaries placed on the patients chart the day before a potential bed offer;
- ❖ Percentage of Porters arriving to the unit by the new standard time for 9:30 am pick-up time;
- ❖ Percentage of families accompanying their loved one to the PCU by 9:30 am.

Balancing measure included:

- ❖ Family/next of kin that wanted to accompany their loved one, yet couldn't make it for the 9:30 am transfer and transfer proceed without accompaniment.

Data collection

Data was collected prospectively between January to June 2020. A process control board (PCB) was used for data collection and continuous evaluation of the transfer process. In accordance with the above described lean six sigma methodology, a process control board is a tool that can be used to monitor existing operational processes with an aim to improve the process by eliminating waste (5,7). The "Comments" column captures any divergence of the transfer process (5).

Statistical analysis

Statistical process control charts were used to analyze data to determine the degree and sustainability of any identified change (Appendix 2). Two sample *t*-test were used to determine statistical significant in change, in transfer times before and after the intervention bundle.

Results

Outcome measure

During the duration of the project, a total of 12 weekday transfers occurred and a total of two weekend transfers occurred over a six months period. Average turnaround time during the week was reduced from a baseline average of 180.2 to 128.3 minutes ($P < 0.003$). This change was found to be statistically significant and sustained (Figure 2). The average transfer time on weekends remained stable at 234 minutes (Figure 3).

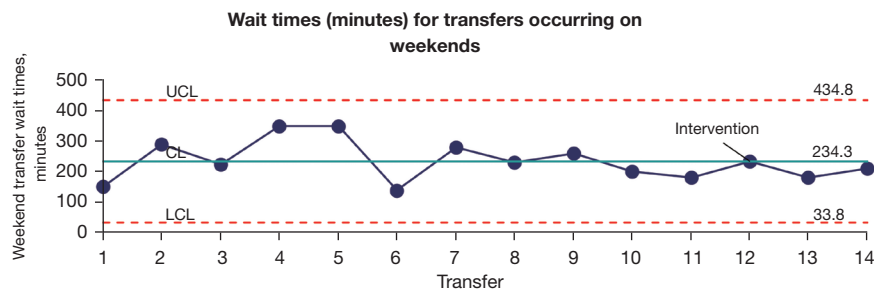


Figure 3 Change in weekend transfer time over the course of the project. UCL, upper control limit; CL, centre line; LCL, lower control limit.

We achieved the outcome target of a 10:00 am arrival time to the PCU 42% of the time. Improvement to transfer times become apparent when patients' families were preemptively prepared for the 9:30 am transfer; noting it was successful 86% of the time. Early engagement of family members allowed the nurse to focus on the necessary discharge steps, i.e., dismantling the paper chart, gathering medications, providing telephone handover to the admitting unit (PCU nurse), supporting the porter with the physical transfer, and attending to the patients' physical and emotional needs prior to discharge.

Process measures

Several metrics were monitored as process measures in the project. This included the percentage of pre-discharge orders written, the percentage of pre-discharge summaries placed in the patients' chart the day before a potential bed offer. The percentage of Porters arriving to the unit by the new standard pick-up time of 9:30 am, and the percentage of families accompanying their loved one to the PCU.

Of the 20 EOLC patients who had an anticipated discharge date to the PCU during the study period, 45% had a pre-discharge order and pre-discharge summary. Upon review of the cases, six of them were potentially eligible for transfer, however tested positive for the coronavirus disease 2019 (COVID-19) and therefore became ineligible at that time. Hence, these patients had to remain on GIM (C6) due to hospital's infection control policies; leaving a total of 14 eligible patients for transfer to the PCU. Sixty-four percent of the 14 patients had a pre-discharge order and summary in the chart and of this group, 57% had a porter arrive at 9:30 am. All substitute decision makers of 14 patients were notified ahead of the planned transfer time to the PCU.

Discussion

This improvement project showed that standardizing patient transfer processes can reduce transfer times for patients from an acute care unit to the PCU. Particularly noting an improvement with the average turnaround time on weekdays. Transfer times were decreased by 29% (from 180.2 to 128.3 min; $P < 0.003$) with the implementation of the following processes: an established discharged time, a pre-booked porter, pre-arranged family notification and option to accompany transfer, and physician discharge orders. There was less favorable improvement during weekend transfers with transfer times remaining stable at 234 min. It is noteworthy that only two weekend transfers occurred after the implementation of the transfer process changes and thus, there are not enough data points to truly reveal any change in this setting. Associated factors that could have potentially impacted transfer times on weekends include the reduced hospital staff (social worker and portering). More specifically, weekends do not have a dedicated social worker on the unit to help facilitate transfers and discharges. These two compounding factors may have contributed to the lack of improvement in timely weekend transfers. Further exploration of these factors are required.

Significant strain currently exist on hospitals as the majority of Canadians (60%) die in hospital (10). Therefore, there is an urgent need to ensure patients are dying in their preferred place of death. When contemplating their preferred place of death, individuals often prefer to be at home or transition to a home-like environment, i.e., hospice or PCU. Very rarely do individuals state their preferred place of death to be in hospital, given the often loud and unwanted noises within this setting, which ultimately impacts quality of life and EOLC (11).

Improving the EOLC experience of patients in acute care has been highlighted as an area for quality improvement in the literature (12). This has been an area of interest for this organization for many years and in fact lead to the development of the Quality Living and Dying Initiative (QLDI) a decade ago (13). Part of delivering high quality end of life care is also addressing transitions across settings (14) and ensuring they are completed in a timely manner and with the least amount of distress to patients and their families (15).

All QI work requires the commitment of an interprofessional team. Most specifically this QI project came to flourish through the leadership role of the social worker within the GIM (C6) unit. The psychosocial assessment conducted by social work with each patient and family helped elicit the needs of the patients and families on this unit (16,17). This included the concurrent theme from patients and families that they wanted their loved ones for their transfer to the PCU. This request did not come as a surprise as it is not uncommon for patients to experience a number of challenges during transitions; specifically feelings of uncertainty (14). Social workers through their advocacy role working with patients and families are well positioned to help facilitate the necessary improvements needed to strengthen transitions across the health care system (12,18).

Patients in today's health care system would prefer a home death (19). However, many factors impact this desired outcome (20,21), such as the patient's condition, their caregiver's situation, lack of home palliative supports, and at times require an emergency visit followed by an admission to hospital to await a transfer to a PCU or hospice (22). As such, the emergency department (ED) for many, may be a first point of contact when critically unwell. Therefore, ensuring the availability and sustainability of medical support is crucial to the wellbeing of all patients and their families (23). Initiatives that help address hospital occupancy and streamlining transitions across settings has been encouraged by the health care system. According to the internal 2020 Powerbase Balance Index Data dashboard, the ED had an average of 175 patients/day. For patients who required a hospital admission, their average ED length of stay was between one to three days. During that time period it was not uncommon to have patients who were also at end of life (24). These EOLC patients are categorized as alternate level of care (ALC) patients—that is, patients awaiting a transfer to an alternate location. It has been noted that having patients who are close to end of life and are waiting in hospital for their final destination

in not a good use of hospital bed utilization. Specifically in Canada, Ontario ALC patients and have become a growing population of concern. In the fiscal year 2017/2018, provincial data revealed there were 190,000 ALC patient days and 40% of all ALC patients were patients in their last three months of life. More specifically, of the 40% of all ALC patients, approximately 24% represented patients awaiting transfer to a PCU or hospice (25). Delays in transferring patients from one location or setting to another is a significant contributor to the number of ALC days accumulated. This QI initiative of transferring patients to PCU from GIM (C6) within a two hour time frame can help mitigate time spent in ED. Salifu & Bayuo's, 2022 article encourages palliative care stakeholders to invest the time needed to improve transition processes (14). This project is timely in responding to this call for action in reducing ALS days and health care cost (26). In fact, this QI project was successful as it achieved a 57% decrease in hospital cost of ALC patients. At the unit level, this streamlined transfer process corresponded to savings of \$6,000.00/year. The QI team plans to expand this project on a larger scale with the hopes of reaping greater hospital savings.

Limitations

This QI project presents with several limitations, starting with a small sample size. Secondly, six months into the project, the World Health Organization announced the COVID-19 pandemic impacting the full scope of this project as hospital transfer policies change due to infection control purposes.

Thirdly, this initiative is unique to this large tertiary care hospital as it is affiliated with a PCU. Several Canadian hospitals do not have a designated PCU within its institution (15); therefore, the generalizability of this QI project may be limited to other organizations without a PCU.

Conclusions

With the lack of hospice/palliative care beds in the province of Ontario, Canada wait times for EOLC patients in hospital continue to be an issue. Therefore, this project highlights the utility of standardizing transfer times to improve access and ensure a seamless transition. Institutions can consider adapting such process measures to improve their own palliative care transitions across settings. Such processes are complex and require the commitment of multiple stakeholders and time to reduce acute care wait times,

improve bed flow, and in turn reduce health care costs.

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Footnote

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Peer Review File: Available at <https://apm.amegroups.com/article/view/10.21037/apm-22-1257/prf>

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Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy of integrity of any part of the work are appropriately investigated and resolved. Ethical considerations for this QI project were assessed through Sunnybrook Research Ethics Board -Self-Assessment Tool and were deemed to not require a full Research Ethics Board review.

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Appendix 1

- (I) On a scale from 1 to 3 (1 being not comfortable and 3 being comfortable), how comfortable are you discharging a patient to K-wing's palliative care unit (PCU) with a pre-discharge order?
- (II) What would make you uncomfortable in discharging a C6/General Internal Medicine (GIM) patient to K-wing's/PCU with a pre-discharge order?
- (III) What would make you uncomfortable in discharging a C6/GIM patient to K-wing's PCU with a pre-discharge order? Some themes from the nurses were:
- If orders are incomplete and there is no discharge summary
 - If there are changes in the patients that are unaddressed prior to the transfer
 - If patient is imminently dying
 - Unclear orders without dates and times or a copy of the discharge summary
 - Would be concerned if patient's status indicate that patient could expire during or shortly after transfer
 - If the orders are not clear enough
 - If discharge summary is not included at the same time

Appendix 2 Process control board for C6/GIM patients transferring to K-wing PCU, January 16 to June 30, 2020

Date of anticipated discharge	Name	Bed offer time	Pre discharge order & summary	Substitute decision maker (SDM) notified	Physician (MD) courtesy call	Porter booking time	Patient discharged from quadramed time	Comments
Jan 16	Patient 1	8:00 AM	D.O – Yes D.S – Yes	8:10 am	8:15 AM	10:30 AM	10:40 am	- Family could not get here by 9:30 AM
Jan 17	Patient 2	SAT 8:00 AM	D.O – No D.S – No	8:30 am	8:15 AM	11:30 AM	12:00 pm	- Sat - d/c order written Thurs, no bed offer Fri - d/c order not written again
Jan 19	Patient 3	8:15 AM	D.O – Yes D.S – Yes	8:20 am	8:25 AM	9:30 AM	10:45 am	- No spare stretcher on unit
Feb 18	Patient 4	8:00 AM	D.O – Yes D.S – Yes	8:05 am	8:15 AM	9:30 AM	9:35 am	- 10 AM TARGET ACHIEVED
Mar 13	Patient 5	8:30 AM	D.O – No D.S – No	9:45 am	9:35 AM	10:30 AM	11:30 am	- App submitted today - Bed offer same day 10:30 booked - Not met target
Mar 16	Patient 6	8:30 AM	D.O – Yes D.S – Yes	8:45 am	8:35 AM	9:15 AM	9:30 am	- 10 AM TARGET ACHIEVED
Mar 17	Patient 7	12:00 PM	D.O – Yes D.S – Yes	2:00 pm	2:15 PM	9:30 AM	9:50 am	- SDM notified day before transfer - MD notified day before - 10 AM TARGET ACHIEVED
Mar 19	Patient 8	8:15 AM	D.O – No D.S – No	8:30 am	8:15 AM	11:30 AM	11:45 am	- Saturday d/c
Mar 23	Patient 9	8:00 AM	D.O – Yes D.S – Yes	8:20 am	8:15 AM	10:00 AM	10:15 am	- 2 bed offers today - Couldn't meet both
Mar 24	Patient 10	8:00 AM	D.O – Yes D.S – Yes	8:10 am	8:20 AM	9:30 AM	9:45 am	- 10 AM TARGET ACHIEVED
Apr 3	Patient 11	N/A	N/A	N/A	N/A	N/A	N/A	- COVID died on unit
Apr 11	Patient 12	N/A	N/A	N/A	N/A	N/A	N/A	- COVID died on unit
Apr 27	Patient 13	N/A	N/A	N/A	N/A	N/A	N/A	- COVID died on unit
May 3	Patient 14	N/A	N/A	N/A	N/A	N/A	N/A	- COVID died on unit
May 4	Patient 15	8:00 AM	D.O – Yes D.S – Yes	8:30 am	8:15 AM	10:00 AM	10:15 am	- Didn't email porter for 9:30 AM booking time
May 10	Patient 16	N/A	N/A	N/A	N/A	N/A	N/A	- COVID died on unit
May 22	Patient 17	8:00 AM	D.O – No D.S – No	8:30 am	8:15 AM	9:30 AM	10:15 am	- COVID + - Extra time for PPE
May 26	Patient 18	8:00 AM	D.O – Yes D.S – Yes	9:00 am	8:30 AM	9:30 AM	9:45 am	- 10 AM TARGET ACHIEVED
May 30	Patient 19	N/A	N/A	N/A	N/A	N/A	N/A	- COVID died on unit
Jun 3	Patient 20	8:15 AM	D.O – No D.S – No	9:00 am	8:15 AM	9:15 AM	9:30 am	- 10 AM TARGET ACHIEVED - MD on unit at the time of bed offer

D.O, discharge order; D.S, discharge summary; SDM, substitute decision maker; MD, physician; PPE, personal protective equipment.