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Earlier Identification of Medications Needing Prior Authorization Can Reduce Delays in Hospital Discharge

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Earlier Identification of Medications Needing Prior Authorization Can Reduce Delays in Hospital Discharge

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Requests for Information
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Introduction

Delays to inpatient discharge from the hospital for medically ready patients are associated with a large cost, both economically to the overall healthcare system and to the individual patient. Several studies show that at a given institution, these unnecessary hospitalization days can cost upwards of millions of dollars, not to mention the additional risk of exposing patients to hospital-acquired infections.[1,2] The reasons for these delays are many and varied, but include individual complex social issues, ride availability, poor follow-up, or an unprepared disposition plan.

At our institution (Stanford Health Care), we have observed that one contributing factor is that prescribed discharge medications are not yet approved by a patient's health insurance company at the time of discharge. Stanford has a diverse patient population with many patients relying on state or federally funded government insurance programs, which have limited drug formularies. Depending on a patient's insurance, certain medications need a prior authorization (PA) in order to be approved and affordable. This process can take between hours to days and, if started at the time a patient is medically ready for discharge, can delay the patient's ability to safely leave the hospital.

It has been shown that medications requiring a PA take significantly longer to fill (one study involved a median time of four days longer) than those that do not.[3] Inability to access medications upon discharge can negatively impact adherence, increasing risk of post-discharge adverse drug events.[4] Therefore, discharges are often delayed while waiting for medications to receive prior authorization approval.

Based on our experience, there are no studies that evaluate delays due to discharge medications needing to undergo the PA process. Thus, in our pilot study, we both aim to define the scope of this problem by surveying resident physicians as well as provide an intervention to identify earlier medications that will need to undergo a PA process. Pharmacy-led interventions in processing PAs have resulted in a statistically significant benefit in improving time to PA approval, fill, and pickup.[5] Therefore, in our intervention, we utilize a specialized "transitions of care" (TOC) pharmacist to analyze the medications of patients who are predicted to be discharged and alert the medical team of potential medications that may need PA approval, with the intended effect that this process will start long before a patient is actually discharged.

Methods

Setting

This study took place at Stanford Health Care, a teaching academic center located in Stanford, California. Stanford Hospital is a 613-bed, urban medical center. This intervention involved all five house-staff inpatient general internal medicine wards teams that are staffed by two interns, one resident, and one attending, as well as one to two medical students. The university institutional review board notice of determination waived review for this study since it was classified as quality improvement. The purpose of this project was to optimize and improve local care.

Survey

Prior to implementing our intervention, a nine-question survey was created and electronically distributed to the Stanford Internal Medicine Residency program using Stanford University Qualtrics software (July 2015). Questions assessed the frequency of delays to discharge related to medications and knowledge of formulary information.

Intervention

Of the five teaching Internal Medicine teams at our institution, two were randomized into our intervention and the remaining three served as control teams. The intervention teams met daily with a TOC pharmacist to review the medication lists of upcoming discharges, which were defined as patients predicted to be discharged within 24-48 hours. The TOC pharmacist would screen the patient's medication list for medications that require a PA; call the outpatient pharmacies to confirm medication stock, insurance coverage and need for a PA; and initiate the processing of the claim. This information was then forwarded to the medical team. If a patient did not leave by the predicted discharge time, the TOC pharmacist would ask the team to identify a reason for the delayed discharge.

The control teams met daily with a resident physician and were similarly queried about identifying upcoming discharges. However, medications were not reviewed with the team and the medical team was not alerted of any medications that may need a PA approval. If a patient did not leave by the predicted discharge time, the medical team would be asked to identify a reason for the delayed discharge.

A PA list (Figure 1) was created by TOC pharmacists at our institution as a reference tool to identify medications frequently requiring PA. The TOC pharmacist in our intervention was able to defer to this list to guide recommendations. This list was also provided to the control group so that all five medical teams had the same information available. However, only the intervention team had daily rounds with the TOC pharmacist to screen the patient medication list and intervene in the PA process.

Statistical Analysis

Patient data from the intervention and from their medical chart were recorded in Microsoft Excel. Data collected included the patient's predicted and actual discharge date, length of stay (LOS), number of PAs for discharge medications needed, insurance company, number of days delayed, and reason for delayed discharge. Comparisons between the intervention and control teams for the two primary outcomes (delayed discharge by 24 hours and number of days delayed for discharge) were statistically analyzed with a Student's *t*-test. Mean length of stay was also compared using a Student's *t*-test. Both the intervention and control comparisons were completed concurrently over a continuous three-week period.

Ethical Considerations

There were no identifiable ethical considerations or conflicts of interest.

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Results

Survey

A total of 72 resident physicians responded to the survey with a response rate of approximately 63%. The overwhelming majority (94%) had responded that they had experienced delays in discharge due to medication problems, with a significant portion attributed to not having PA approval in time (Table 1).

Additionally, 71% of residents responded that they had limited knowledge of the Stanford insurance formulary (Table 1). Residents were also asked to identify medications likely to require a PA and were assessed on their ability to correctly identify where to find insurance information within the electronic health record. The responses overwhelmingly indicated little understanding of medication formularies, with 98% unable to correctly identify the number of medications covered by MediCal.

Intervention

A total of 66 patients were involved in the intervention arm and 98 patients in the control arm, with balanced demographics and insurance profiles (Table 2). In the intervention arm, there were 20 discharge prescriptions needing PA, while in the control arm there were 25 discharge prescriptions needing PA (Table 2). The most common medications requiring PA were oral vancomycin (n=5) and enoxaparin (n=4). Figure 2 highlights the breakdown of medications requiring PA in both the control and intervention groups. Of these patients discharged with a medication requiring a PA, 4/25 patients were identified from the control teams who experienced greater than 24-hour delays to discharge due to medications not having a PA approval available at the time of discharge, compared to 0/20 patients identified on the intervention teams (P=0.06). When comparing the number of extra hospital days caused by delayed discharges secondary to unsecured PAs per number of potential discharges, there were six days of extra hospitalization for patients from the control group out of 27 potential discharges compared to zero extra days for patients from the intervention side out of 20 potential discharges (P=0.02).

LOS for the intervention and control teams was not significantly different (6.3 vs 5.8 days, respectively; P=0.37).

Discussion;

Among internal medicine residents at our institution, our survey showed that it was not uncommon that discharges were being delayed due to discharge medications not having a completed PA. We speculate that this could be associated with late placement of discharge prescriptions. If physicians do not know a PA is required for a certain medication, they may not place early

Table 1. Survey questions distributed to resident physicians and responses

Questions	Responses, n (%)				
On average, how often have you experienced delays in discharge due to medication? **(n=72)**	Never: 4 (6)	1-2 times per year: 8 (11)	1-2 times per month: 39 (54)	1-2 times per week: 16 (22)	More than 2 times per week: 5 (7)
For the previous question, about what percentage were due to not having prior authorization? **(n=68)**	0%: 7 (10)	25%: 20 (29)	50%: 18 (27)	75-100%: 13 (19)	Not sure: 10 (15)
On a scale of 1-5 (5 being the most confident), how confident are you in your knowledge of the insurance formulary information displayed in Epic (eg, the "tiers" and "preferences" displayed when prescribing discharge medications)? **(n=72)**	1-Not confident at all: 51 (71)	2-Slightly confident: 13 (18)	3-Some confidence: 7 (10)	4-Confident: 1 (1)	5-Very confident: 0 (0)
On average, how many days before discharge do you place discharge medication orders? **(n=72)**	At the time of discharge: 32 (44)	1 day prior: 36 (50)	2 days prior: 4 (6)		
Please indicate your level of training. **(n=72)**	First-year resident: 20 (28)	Second-year resident: 29 (40)	Third-year resident: 23 (32)		

The majority of respondents experienced medication-related delays to discharge, many of which were due to not having PA approval. Of 115 residents surveyed, 72 residents responded for a 63% response rate.

discharge medication orders and start the PA process earlier, thus possibly delaying discharge. It has been shown that anticipatory discharge orders, in which discharge orders including prescriptions are placed more than 24 hours before discharge, decreases LOS.[6]

Interestingly, our survey also showed a dearth of knowledge regarding medical coverage and insurance formularies among resident physicians. Results suggest that consideration of patient insurance and formularies are not necessarily taken into consideration when prescribing. This may contribute to medication-related access barriers. This is an opportunity at our institution to provide education to prescribers about formulary considerations and enhance available resources, including making our PA list (Figure 1) widely available while encouraging prescribers to seek a pharmacist when needed.

Our intervention involves a third party knowledgeable about medication coverage earlier in the discharge process. Collaborating with the TOC pharmacist allows prescribers to identify and resolve PAs in anticipation of discharge, as well as improve prescribing in compliance with patient-specific insurance formularies by facilitating drug substitutions when appropriate. By utilizing a specialized TOC pharmacist, we were able to identify discharge medications needing PA well before discharge, saving six days of unnecessary hospitalization compared to control in a three-week time span. Despite this, LOS between the two groups was not significantly different as expected. Many different factors determine LOS so it is possible that one confounder or outlier disproportionately affected one group of our relatively small sample size.

While a pharmacy technician could also be helpful in identifying medications requiring PA, pharmacists are also able to suggest therapeutic alternatives, which are beyond the scope of pharmacy technicians. Additionally, this practice was incorporated into the workflow of our TOC pharmacists who already see patients at discharge. Therefore, there were no additional costs associated. This did support the need for collaborating with pharmacists in discharge planning. While

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Table 2. Patient characteristics and specific medications requiring PA

Characteristic, n (%)	Intervention	Control	*P*-value
Number of patients, n	66	98	-
Female	31 (47)	48 (49)	0.88
Average LOS, days	6.3	5.8	0.37
Number of patients with primary Medicare insurance	20 (30)	27 (28)	0.77
Number of patients with primary MediCal insurance	8 (12)	17 (17)	0.43
Number of patients with medications needing PA	20 (30)	25 (26)	0.61
Number of patients with delayed discharges due to unsecured PAs/number of patients with medications needing a PA	0/20 (0)	4/25 (16)	0.06
Number of extra hospital days from delayed discharges due to unsecured PAs/number of potential discharges among patients with medications needing a PA	0/20 (0)	6/27 (22)	0.02

LOS, length of stay; PA, prior authorization.

Days of unnecessary hospitalization due to unsecured prior authorizations are significantly greater in the control group.

Figure 1. PA list

To better help transition patients out of the hospital, we would like to provide this list for our prescribers to be alerted and to be looking for medications that are known to be troublesome in the outpatient setting (prior authorization, step therapy, TAR, high cost, etc). ***DISCLAIMER: THIS MEDICATION LIST IS ONLY A REFERENCE AND MAY NOT BE COMPREHENSIVE!***

Diabetes*	• Lantus Solostar (glargine) • Kwikpen (lispro/aspart) • Ensure all pen products are covered *Please remember to prescribe **test strips, lancets, lancing device, and/or control solutions for their home diabetic glucometers.***	**Transplant medications**	• Prograf (tacrolimus) • Rapamune (sirolimus) • Cellcept/Myfortic (mycophenolate) • Cyclosporine • Mepron (atovaquone)
GU/GI	• Xifaxan (rifaximin) • Rowasa (mesalamine enema)	**Inhalers***	• Advair • Qvar • Combivent • Pulmicort • Asmanex • Xopenex • Breo Ellipta, etc.
Antibiotics	• Zyvox (linezolid) • Vantin (cefpodoxime) • Levaquin (levofloxacin) • vancomycin oral (Vancocin): capsules/solution ○ vancomycin solution requires a compounding pharmacy • Vfend (voriconazole) • Noxafil (posaconazole)	**Pulmonary Hypertension**	• Revatio (sildenafil) • Letairis (ambrisentan) • Tracleer (bosentan) • Adcirca (tadalafil) • Ventavis (iloprost) • Tyvaso (treprostinil inhalled) • Remodulin (treprostinil IV/SQ) • Flolan (epoprostenol) • Veletri (epoprostenol), etc.

Antiplatelets	• Plavix (clopidogrel^)
	• Brilinta (ticagrelor)
	• Effient (prasugrel)
		Anticoagulants	• All novel anticoagulants*
			  ○ Pradaxa (dabigatran)
			  ○ Eliquis (apixaban)
			  ○ Xarelto (rivaroxaban)
			• **Injectables**
			  ○ Lovenox (enoxaparin)
			  ○ Arixtra (fondaparinux)
			  ○ Fragmin (dalteparin)

Others	• Lidoderm patches • Growth factors: Neupogen (filgrastim), Neulasta (pegfilgrastim) , Epogen/Procrit (epoetin alpha), etc • Nimodipine (Nimotop) • Oral Chemotherapy Agents: Dasatanib, Immatanib, sprycel, Gleevec, etc. *Please remember to prescribe **syringes and/or needles for all injectables** if not pre-filled.*	**Antiarrhythmics**	• Multaq (dronedarone) • *Always check stock with pharmacy for older antiarrhythmics.*

*Please seek **prior authorization for all IV medications** {eg. Cubicin (daptomycin), Teflaro (ceftaroline), etc.}*
*Special formulations (eg. oral disintegrating tablets (**ODT**), wafers), may have higher costs.*
If patient is already on a medication before coming to the hospital, most likely the medication is already covered!

*Most insurance have a preferred formulary agent. Please refer if needing assistance.
^State of CA, Medi-Cal only

Prepared by Transitions of Care Pharmacy Connie Elejade, PharmD, BCPS, and Noah Fang, PharmD, BCPS
in collaboration with Case Management Team

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this required a pharmacist to dedicate a small amount of time each day to screen patient medication lists in anticipation of discharge barriers, the anticipated benefit is reduction of timely delays.

The results of our study prompted initiation of daily discharge rounds at our institution that included the participation of physicians, pharmacists, social workers, case managers, and other care providers to anticipate and resolve discharge needs in advance of patients returning home.

Limitations of this study include a relatively short timeframe for the intervention (three weeks) as well as a relatively small sample size from a single academic medical center. This may have contributed to the lack of statistically significant data. However, this study highlights the need for addressing PAs in advance of hospital discharge to reduce medication-related barriers and their potential consequences.

In summary, these results suggest that unnecessary hospitalization days due to the need for PA can be saved with standardized screening for the need for PAs earlier than the discharge date. Future research would benefit from further evaluating the impact of pharmacist involvement in the discharge planning process to reduce LOS, reduce health care-associated costs, and improve health care-related outcomes. This would further support including a pharmacist on every medical team or partnering with an outside outpatient pharmacy that can expedite and complete all PA processes for discharging patients.

Conclusions

We are the first, to our knowledge, to show that delays to discharge due to unsecured PA of discharge medications is a widespread problem and that earlier identification of these medications can reduce unnecessary delays due to the need to complete PAs before discharge. Our study supports the improvement of processes to screen for discharge medication lists prior to the day of discharge. Utilizing pharmacists in the screening process is an effective method to achieve this goal. ○

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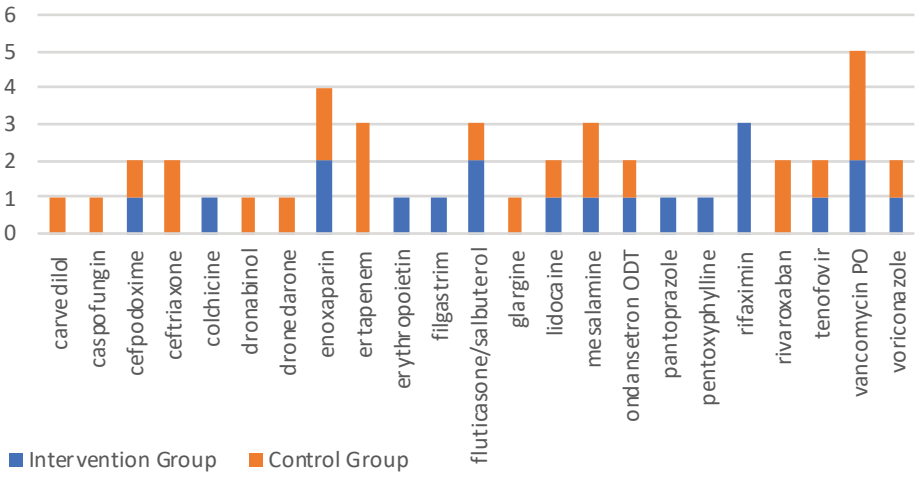
Figure 2. Medications requiring PA



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Disclosures

The authors have declared no potential conflict of interest.

References

1. Jacobs DG, Sarafin JL, Norton HJ, Christmas AB, Huynh T, Sing RF. Wasted hospital days impair the value of length-of-stay variables in the quality assessment of trauma care. *Am Surg.* 2009;75(9):794-802; discussion 802-793.
2. Thomas SN, McGwin G, Jr., Rue LW, 3rd. The financial impact of delayed discharge at a level I trauma center. *J Trauma.* 2005;58(1):121-125.
3. Ackman ML, Graham MM, Hui C, Tsuyuki RT. Effect of a prior authorization process on antiplatelet therapy and outcomes in patients prescribed clopidogrel following coronary stenting. *Can J Cardiol.* 2006;22(14):1205-1208.
4. Cutler T, She Y, Barca J, et al. Impact of pharmacy intervention on prior authorization success and efficiency at a university medical center. *J Manag Care Spec Pharm.* 2016;22(10):1167-1171.
5. Schnipper JL, Kirwin JL, Cotugno MC, et al. Role of pharmacist counseling in preventing adverse drug events after hospitalization. *Arch Intern Med.* 2006;166(5):565-571.
6. Sumer T, Taylor DK, McDonald M, et al. The effect of anticipatory discharge orders on length of hospital stay in staff pediatric patients. *Am J Med Qual.* 1997;12(1):48-50.