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Project #4: The Effects of a Pharmacist-Led Transitions of Care Program after Hospital Discharge

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#4

The Effects of a Pharmacist-led Transitions of Care Program after Hospital Discharge

(CCS)



The Effects of a Pharmacist-led Transitions of Care Program after Hospital Discharge

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AIM

- Studies have found that 30% of patients transitioning from the hospital to home setting had at least one medication discrepancy, and one in five patients had an adverse event within 3 weeks post-discharge; of the adverse events identified, 60% were medication related and preventable.¹
- According to HPH's 30-day readmission dashboard, heart failure, hypertension, diabetes and acute myocardial infarction are of the top 25 readmission drug related groups.
- Our program is designed to help facilitate the transitions of care (TOC) of select patients discharged from Henry Ford Hospital (HFH) with the aim of preventing 30-day readmissions, as well as improving cost avoidance measures.
- Our program was re-initiated in April 2021 and the data presented is from April 2021-December 10, 2021
- Aims of Quality Addressed: Safety/Quality, Customer Experience, Value/Cost Efficiency, Community Benefit

PLAN: CURRENT STATE

- In an effort to prevent avoidable readmissions, maximize cost avoidance and improve patient safety, we identified an opportunity exists within the transitions of care from hospital to home to include a pharmacist to help facilitate care post-discharge.
- Several studies have shown the benefits of including a pharmacist within the TOC process leading to reduced readmission rates, improved identification and resolution of medication related problems, improved patient knowledge of their medications, as well as improved satisfaction.¹
- Prior to the initiation of our program, pharmacy's main role in the TOC of a patient was bedside delivery of medications at discharge without any additional monitoring or education post-discharge.
- Based on our previous cycle of PDCA, we identified pharmacist involvement in TOC was both essential in preventing readmissions and improving patient safety.²

Pre Discharge Transitions of Our Program

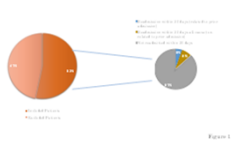


Figure 1: Of the eligible patients enrolled, 87% of patients were not readmitted within 30 days of discharge after completion of our program.²

Pre Discharge Interventions

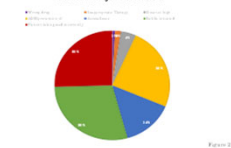


Figure 2: Our pharmacist made the most impact in the areas of identifying or preventing adverse drug reactions and helping to correct medications that were being taken inappropriately.²

- To improve our previous efforts we made a few changes to the dynamics of our program including:
 - The pharmacist independently reviewed patient charts to identify eligible patients (instead of waiting for referrals) to increase capture rate
 - Heavier weight was placed on education and counseling patients on their disease state(s) and/or medications
 - More interaction with other healthcare providers to facilitate care

DO: CORRECTIVE ACTIONS / INTERVENTIONS

- The pharmacist independently reviewed patient charts to identify eligible patients
 - Patients were enrolled into the program if they met our inclusion criteria of:
 - Admitted to Henry Ford Main Hospital on a general practice unit
 - Diagnosis of: CHF, HTN, DM, CAD (NSTEMI or STEMI)
 - History of non-adherence with medications or need for additional education/follow-up
 - Barriers to access of medications: no insurance, high co-pays, transportation issues, etc.
 - Patients were excluded if:
 - Advanced disease state or advanced disease state WITH multiple admissions in the past in relation to advanced disease state
 - Concomitant hemodialysis, oncology or transplant patients
 - Patient discharged to SAR/hospice/IPR
 - Patient refuses medical treatment or leaves AMA
 - Unable to reach after 3 attempts or more than 7 days post-discharge (whichever is first) or patient refusal of services
 - Concomitant referral placed to ambulatory clinical pharmacist (CMOP), home health care and/or medication therapy management (MTM) program.
 - Patients were called within 24-72 hours post-discharge, at 2 weeks and 4 weeks. Calls focused on education and clinical pearls.
 - Any issues discussed (e.g. medication related, access issues, concerns) were addressed, or forwarded to the appropriate personnel.
 - Interventions made by the pharmacist were documented both in EPIC and manually on an Excel sheet.

CHECK (EVALUATION OF CHANGES)/ MEASURES

- All data was tracked manually using Excel.
 - Data collected included patient demographics, reason for admission, interventions made by the pharmacist and 30-day readmission status
- Our measures included:
 - Readmission rates at 30-days post-discharge
 - Estimated cost of avoidance (ECA)
 - Number and type of interventions made

30-Day Readmissions

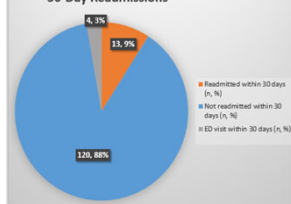


Figure 3: this depicts the number of patients readmitted to the hospital versus those that were not readmitted after 30-days of their initial discharge. Three percent of patients did have an emergency department (ED) visit within 30-days of initial discharge, but were not readmitted into the hospital.

	Intervention Group (n, %)
Age, median (years)	53
Sex, n (%)	
Male	79 (55.2)
Female	64 (44.8)
Admission Diagnosis, n (%)	
CHF	78 (54.3)
CAD	18 (12.6)
DM	14 (9.8)
HTN	31 (21.7)
Other	2 (1.4)
Total patients enrolled, n (%)	151
Patients completed	143 (74.9)
Patients excluded	48 (25.1)

Table 1: this figure demonstrates patient demographics. There were more males enrolled, also the majority of patients enrolled had a primary diagnosis of CHF, which shows the severity of this disease state and the importance of follow-up post-discharge.

Readmission Status, n (%)	Intervention Group (n, %)
Patients not readmitted	126 (88.1)
Patients readmitted to ED	4 (2.8)
Patients readmitted to inpatient setting	13 (9.1)
Interventions, n (%)	
Identified/resolved drug related problem ¹	70 (47.3)
Identified/resolved adverse drug reaction	10 (6.8)
Identified/resolved access issue ²	17 (10.2)
Initiated refills	41 (27.9)
Total interventions	148

Table 2: this shows the readmission status for patients enrolled in our study, as well as the type of interventions made by the pharmacist during patient encounters.
¹A drug-related problem was classified according to the Cipolle/Merley/Strand classification system, which includes: need for additional therapy, unnecessary therapy, wrong drug, dosage too high, dosage too low and/or adherence problem.
²Access issues were defined as any barrier to obtaining ones' medications (e.g. affordability, insurance denial, etc.)

Table 3: There are 6 levels of estimated cost of avoidance (ECA) as defined by OutcomesMTM, a program that specializes in delivering medication therapy management nationwide.³ The ECA demonstrates the cost-savings to the health system. Interventions made during this program were assigned to each level based on avoidance of outcome (e.g. an intervention that helped avoid an ER visit).

Level of Intervention	Pharmacist Intervention	Cost avoided per intervention (\$)	Number of interventions, n (%)	Total cost avoided (\$)
Level 1: Improved quality of care	<ul style="list-style-type: none"> Provided CPE with patient Provided education and counseling Conducted with pharmacist Remotely conducted from non-ambulatory setting 	29	143 (100)	2,860
Level 2: Avoided drug product cost	<ul style="list-style-type: none"> Identified unnecessary therapy Identified excessive dose or duration of therapy Identified incorrect therapy 	Variable	3 (2.1)	3000
Level 3: Avoided additional physician visit	<ul style="list-style-type: none"> Conducted with pharmacist the drug therapy problem resolution Conducted with patient the non-adherence 	111	11 (7.7)	1,224
Level 4: Avoided additional prescription cost	<ul style="list-style-type: none"> Conducted with pharmacist the drug therapy problem resolution Conducted with patient the non-adherence 	117	—	—
Level 5: Avoided ED visit	<ul style="list-style-type: none"> Conducted with pharmacist the drug therapy problem resolution Conducted with patient the non-adherence 	1,419	45 (31.5)	64,305
Level 6: Avoided hospital admission	<ul style="list-style-type: none"> Conducted with pharmacist the drug therapy problem resolution Conducted with patient the non-adherence 	14,108	34 (23.8)	479,932
				517,386

ACT: SUSTAIN AND SPREAD

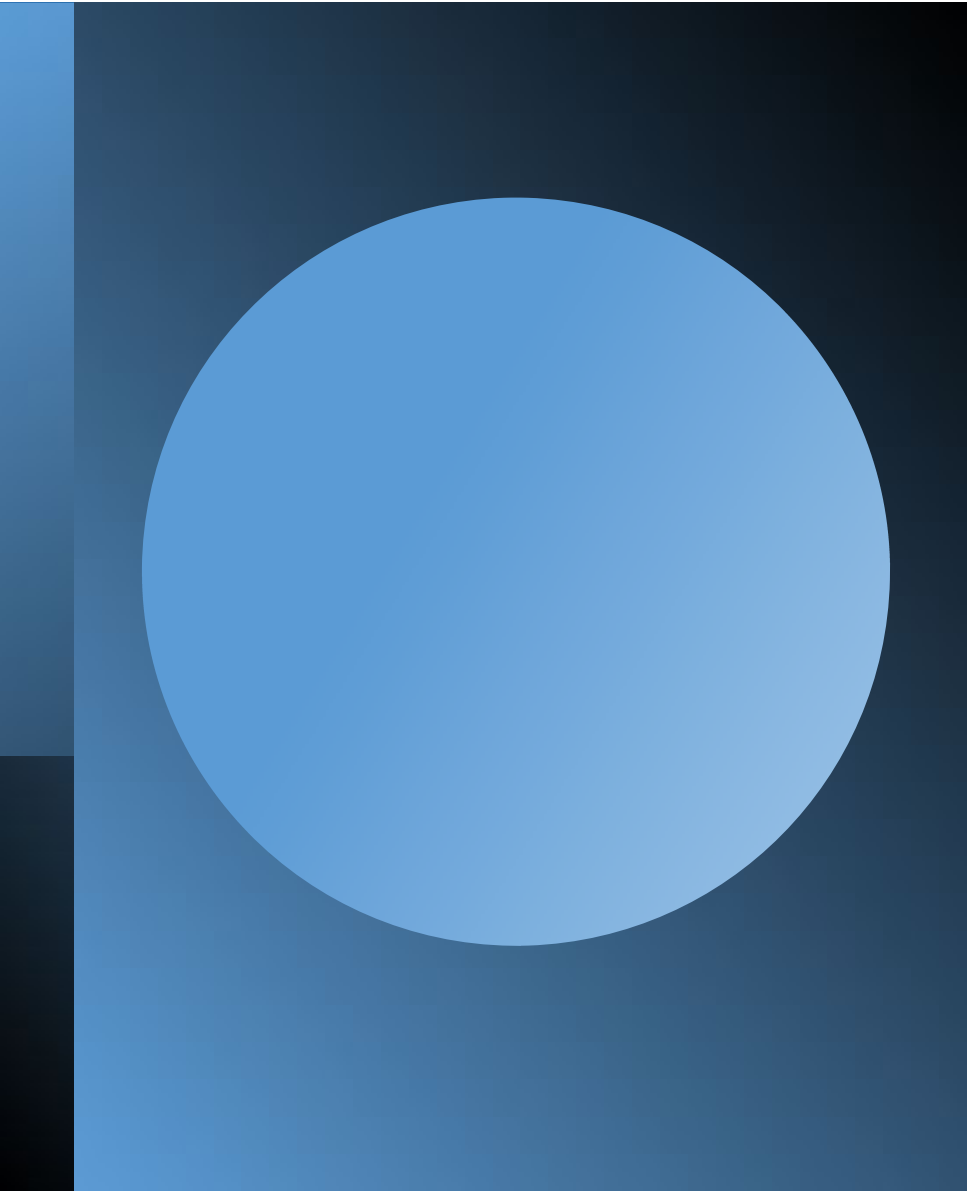
- Continue data collection and establish a control group for comparison to establish further effects of program
- Ongoing discussion of program and outcomes during our collaborative ambulatory pharmacy hospital meetings
- Apply our knowledge and findings to help establish similar programs across Henry Ford Hospitals
- Present findings to other disciplines for further collaboration such as inpatient pharmacy, case management, population health and others as appropriate.
- Inclusion of other disease states susceptible to readmission based on positive findings of our program on prevention of readmission and cost avoidance
- Introduce program to general practice units and establish a more refined referral process

KEYS TO SUCCESS / LESSONS LEARNED

- Transitioning from the hospital to home setting exposes vulnerability within our health systems, and errors (specifically, medication errors) have a high chance of occurring.
- Poor TOC threatens patient safety, reduces confidence in the healthcare system and wastes resources
- Patients are the most vulnerable post-discharge, often times needing additional education or reinforcement, as well as needing a healthcare provider to address needs/concerns
- A few of the most important things to the success of our project was being able to empower our patients by educating them on their disease state(s) and medications, being available and accessible to them for questions/concerns and forwarding their questions/concerns to the appropriate healthcare provider when and if needed in a timely manner.

REFERENCES

- Stranges, PM, Jackevicius, CA, Anderson, SL, et al. Role of clinical pharmacists and pharmacy support personnel in transitions of care. *J Am Coll Clin Pharm*. 2020; 3: 532-545.
- Dabaja, R, El-Khoury, C, Davis, T. (2020, February 18). *The Henry Ford Discharge Pharmacy - Transitions of Care Program*. Henry Ford 2020 Quality Expo Detroit, MI, United States.

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- Scored high in in **Safety/Quality, Customer Experience, and Growth and/or Spread**
 - **Team Members include:**
 - Rana Dabaja, PharmD
 - Caren El-Khoury, RPh, Pharmacy, CCS