



(Management Case Study)

aDAPtIng Pharmacist Roles to Optimize Post-Percutaneous Coronary Intervention (PCI) Outcomes

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Disclosures

All planners, presenters, reviewers, and ASHP staff of this session report no financial relationships relevant to this activity.

Learning Objectives

- Describe the importance of dual antiplatelet therapy (DAPT) adherence in the post-percutaneous coronary intervention (PCI) population
- Describe how the post-discharge follow up (PDFU) calls may help to ensure access and adherence to DAPT
- Identify methods to assist in the implementation of these initiatives at other institutions

Self-Assessment Questions

- Adherence to DAPT regimens is a vital component of preventing stent thrombosis (T/F)
- Lack of education regarding antiplatelet medications has been cited as a barrier to DAPT adherence (T/F)
- Post-discharge follow-up calls offer an effective method of identifying and resolving drug-related problems related to antiplatelet therapy (T/F)

Cedars-Sinai Medical Center

- Non-profit, acute, tertiary teaching hospital
- Level I Trauma Center
- 886 licensed beds
- Comprehensive Stroke Center
- Cardiology and Heart Surgery program ranked #3 in the nation
- Decentralized clinical pharmacy services include intensive care, cardiology, medicine, surgery, pediatrics, oncology, solid organ transplant, emergency department and operating room services



Background

- Percutaneous Coronary Interventions (PCI) with stent placement in >1,000 patients annually
- DAPT adherence critical for preventing stent thrombosis (ST):
 - 75% of ST within 30 days post implantation¹
 - Absence of clopidogrel strongly associated with early ST (HR=36.5)¹
 - Delay in clopidogrel therapy associated with up to 15% mortality²
 - Most recent guidelines recommend ≥ 12 months of DAPT post ACS-PCI³
- Patient knowledge of the indication of DAPT and consequences of non-adherence is a key factor associated with adherence⁴

Challenges

- Inability to efficiently identify PCI patients
- Difficult to provide education/assistance:
 - Short length of stay (LOS):
 - Average LOS = 1.4 days
 - 46% patients discharged within 12 hours
 - Educated about 60% patients at baseline
 - Direct discharges from PACU or outpatient procedure center
 - 1/3 patients discharged without inpatient admission
 - No opportunity to provide education

Goal

- Provide post-discharge follow up service to all PCI patients to:
 - Ensure medication access
 - Educate patients on the importance of DAPT

Post-Discharge Follow Up Calls

- Patients are evaluated on
 - Adherence to DAPT and other chronic medications
 - Medication access and literacy
 - Drug-related problems (DRPs)
- Patients are educated on:
 - DAPT and other chronic medications
 - Management of potential adverse drug reactions (ADRs)
 - Importance of physician appointment follow-up
- Make 3 attempts on each patient before declaring “unable to reach”

Timeline

August 2017

- Initial pilot with 2 students
- Student job aid created
- SharePoint database
- Daily PCI report

October 2017

- Continuation of pilot with 1 pharmacist and 1 resident

January 2018

- Pharmacist job aid created

February 2018

- New initiative discussion with inpatient pharmacists
- Training provided to all pharmacists involved
- Go-Live

April 2018

- Student job aid revised
- Centralized training for APPE students

Daily PCI Report

- Collaborated with EIS group to identify patients based on CPT codes:
 - 92928, 92929, 92933, 92934, 92937, 92938, 92941, 92943, 92944
- Report automatically generated daily and delivered via email to all relevant pharmacy staff
- Report contains:
 - Patient location at time of report
 - Name/MRN/CSN
 - Procedure performed

Online Database

- Purpose
 - Assist with documentation
 - Facilitate distribution of work
- SharePoint
 - Allows for multiple concurrent users
 - Can create different levels of access
 - Dropdown menu to ensure standardization

Online Database

PCI Post-Discharge Follow Up Calls

	Team? ▾	Caller Name ▾	Date of stent ▾	Patient name ▾	MRN ▾	CSN ▾	Date of discharge ▾
^	Call status: Unassigned (16)						
<input checked="" type="checkbox"/>	5/6 Staff		09/17/2018	[REDACTED]	[REDACTED]		
	5/6 Staff		09/17/2018	[REDACTED]	[REDACTED]		
	5/6 Staff		09/17/2018	[REDACTED]	[REDACTED]		
	5/6 Staff		09/17/2018	[REDACTED]	[REDACTED]		
	5/6 Staff		09/17/2018	[REDACTED]	[REDACTED]		
	5/6 Staff		09/17/2018	[REDACTED]	[REDACTED]		
	5/6 Staff		09/14/2018	[REDACTED]	[REDACTED]		
	5/6 Staff		09/16/2018	[REDACTED]	[REDACTED]		
	5/6 Staff		09/16/2018	[REDACTED]	[REDACTED]		9/18/2018
	5/6 Staff	[REDACTED]	09/13/2018	[REDACTED]	[REDACTED]		9/14/2018

Online Database

Call status

Completed

Completed

.In Progress

Unable to reach

Patient refused

Readmission

Deceased

SNIF

Received inpatient PCI education?

Select an option

Call status

Select an option

Where was discharge DAPT Filled?

Select an option

Was patient on antiplatelet prior to admission

Select an option

Is patient taking DAPT as prescribed?

Select an option

Which antiplatelets are prescribed? (Select all)

Select options

Reason for not taking DAPT:

Select an option

Where was discharge DAPT Filled?

CSMC

CSMC

Community Pharmacy

Not Filled

Reason for not taking DAPT:

N/A

N/A

Unable to afford

Not prescribed

Fill issues at pharmacy

Patient preference

Side effects

Other (please explain in comment box)

Which antiplatelets are prescribed? (Select all)

Aspirin, Clopidogrel (Plavix)

Aspirin

Clopidogrel (Plavix)

Ticagrelor (Brilinta)

Prasugrel (Effient)

Online Database

Severity of DRPs identified

Low capacity for harm

Low capacity for harm

Serious/significant

Life threatening

Pharmacist action to resolve DRP / Comments

Enter value here

Patient understand why they are taking antiplatelet

Select an option

Type of DRP identified

Select options

Total DRPs identified

Enter value here

Severity of DRPs identified

Select an option

1st Call (MM/DD/YYYY and Caller Name)

Enter value here

2nd Call (MM/DD/YYYY and Caller Name)

Enter value here

Type of DRP identified

- N/A
- Not prescribed
- Non-adherence too many meds
- Non-adherence ADR
- Cost
- Knowledge deficit of med
- Doesn't work
- Taking differently than prescribed

Workflow

- Entering patients into SharePoint
 - PCI report distributed each morning via email
 - Assigned pharmacist to review/enter patients
 - Key data points: date of stent/discharge, patient name, MRN, CSN

- Completing PDFU phone call
 - Patient chart review
 - Conduct patient call
 - Document in Share Point
 - Follow-up to resolve any DRPs discovered during the call

Expectations for patient call completion

- Within 7 days of discharge
- Maximum of 3 attempts – on 3rd attempt Call Status is updated to “Unable to Reach”

Staff Training

- Discussed new initiative during huddle with clinical pharmacists
- Utilized detailed job aid to highlight steps of process
 - Entering patient into SharePoint
 - Responsibility allocated to a different pharmacist based on day of the week
 - Completion of PDFU calls
 - All pharmacists responsible for using SharePoint to identify phone calls that need to be completed each day
- Follow-up huddles to assess progress and collect feedback from staff

Challenges for Optimization

- Managing Change
 - Invited pilot staff to huddle for peer-to-peer Q&A
 - Follow-up huddles to assess progress and collect feedback from staff
 - Examples of DRPs identified and resolved through the PDFU calls
- Streamline SharePoint Database
 - Developed function to display the past 7 days of discharges only
 - Stratified the list into categories
 - Added/removed data points to increase efficiency

Challenges for Optimization

- Duplication of calls
 - Created a column allowing for pharmacist to “claim” a patient
 - Ability to be claimed by:
 - Pharmacy group (Transitions of Care or Heart Failure pharmacists)
 - Individual staff pharmacist
- Limitation of resources
 - Incorporated APPE students in the completion of PDFU calls

Additional Resources

- Offers 4th year students the opportunity to participate in PDFU calls under preceptor guidance
- Centralized training session for students
 - Completed during the first week of their rotation
 - Small group session to review the student workflow / job aid
 - Allow students to complete a call and receive feed back from the pharmacist trainer and their peers on areas for improvement

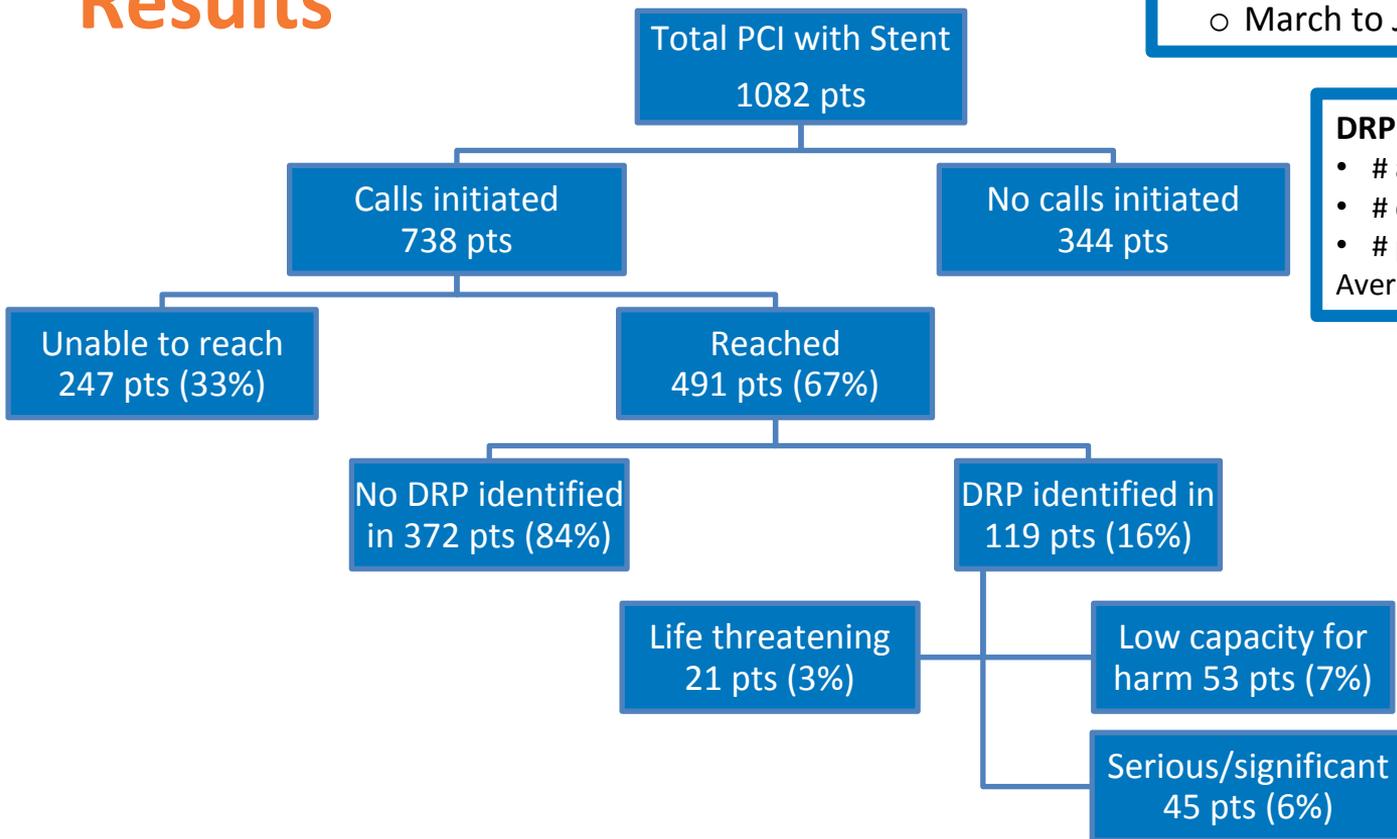
Results

Study period:

- August to December 2017
- March to June 2018

DRP (Drug-Related Problem)

- # antiplatelet DRPs: 32
 - # other DRPs: 113
 - # patients with missed doses: 16
- Average days missed: 2 days



* Classification of DRP severity was based on NCC MERP definition

Examples of DRPs Resolved

Drug Related Problem	Rx Action	Outcome Avoided	Potential Severity
Patient did not understand the indication for antiplatelet and hence did not pick up clopidogrel from community pharmacy post-discharge.	Educated patient on the importance of DAPT and urged him to pick up medication immediately.	Stent Thrombosis	Potentially life-threatening
Patient reported confusion about the duration of clopidogrel and decided to hold therapy until follow up appointment in 3 weeks.	Educated on the importance of DAPT and recurrent cardiovascular events.	Stent thrombosis	Potentially life-threatening
Patient discharged with DAPT prescription, and unable to fill due to wrong NPI number. Patient was without medications x 5 days.	Contacted prescriber and called in new prescription.	Stent thrombosis	Potentially life-threatening

Examples of DRPs Resolved

Drug Related Problem	Rx Action	Outcome Avoided	Potential Severity
Patient started many new meds at discharge and developed a severe allergic rash. Unable to go to ED due to financial hardship and planning to stop all meds including DAPT.	Educated on the importance of DAPT and facilitated free clinic visit.	Stent thrombosis/ Worsening rash	Potentially life-threatening
Discharge DAPT given to patient's family member upon discharge but was left in the purse and forgotten.	Educated on the importance of DAPT and helped locating the medications at home.	Stent thrombosis	Potentially life-threatening
Patient without DAPT for 3 days as discharge prescriptions sent to mail order pharmacy (potential 9-day delay).	Prescription rerouted to local pharmacy for immediate fill.	Stent thrombosis	Potentially life-threatening

Key Takeaways

- Patient understanding of DAPT is vital in ensuring adherence and preventing stent thrombosis post-PCI
- Successful implementation of this new program requires staff support and continuous feedback
- Involving learners proved to be an efficient process to maximize call coverage
- Utilizing post-discharge calls is an effective way to identify DRPs in this high risk population

References

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SELF-ASSESSMENT QUESTION 1

- Adherence to DAPT regimens is a vital component of preventing stent thrombosis.

SELF-ASSESSMENT QUESTION 1

- Adherence to DAPT regimens is a vital component of preventing stent thrombosis.
- TRUE

SELF-ASSESSMENT QUESTION 2

- Lack of education regarding antiplatelet medications has been cited as a barrier to DAPT adherence.

SELF-ASSESSMENT QUESTION 2

- Lack of education regarding antiplatelet medications has been cited as a barrier to DAPT adherence.
- TRUE

SELF-ASSESSMENT QUESTION 3

- Post-discharge follow-up calls offer an effective method of identifying and resolving drug-related problems related to antiplatelet therapy.

SELF-ASSESSMENT QUESTION 3

- Post-discharge follow-up calls offer an effective method of identifying and resolving drug-related problems related to antiplatelet therapy.
- TRUE