(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 implantation\(^1\)
  – Absence of clopidogrel strongly associated with early ST (HR=36.5)\(^1\)
  – Delay in clopidogrel therapy associated with up to 15% mortality\(^2\)
  – Most recent guidelines recommend ≥12 months of DAPT post ACS-PCI\(^3\)

• Patient knowledge of the indication of DAPT and consequences of non-adherence is a key factor associated with adherence\(^4\)
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

<table>
<thead>
<tr>
<th>Team</th>
<th>Caller Name</th>
<th>Date of start</th>
<th>Patient name</th>
<th>MRN</th>
<th>CSN</th>
<th>Date of discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/6 Staff</td>
<td>09/17/2018</td>
<td></td>
<td></td>
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</table>

Call status: Unassigned (16)
Online Database

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 SharePoint
  – 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 4\textsuperscript{th} 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 feedback from the pharmacist trainer and their peers on areas for improvement
Results

Total PCI with Stent 1082 pts

Calls initiated 738 pts

Unable to reach 247 pts (33%)

Reached 491 pts (67%)

No DRP identified in 372 pts (84%)

DRP identified in 119 pts (16%)

Life threatening 21 pts (3%)

Low capacity for harm 53 pts (7%)

Serious/significant 45 pts (6%)

No calls initiated 344 pts

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

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

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<td>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.</td>
<td>Educated on the importance of DAPT and facilitated free clinic visit.</td>
<td>Stent thrombosis/Worsening rash</td>
<td>Potentially life-threatening</td>
</tr>
<tr>
<td>Discharge DAPT given to patient’s family member upon discharge but was left in the purse and forgotten.</td>
<td>Educated on the importance of DAPT and helped locating the medications at home.</td>
<td>Stent thrombosis</td>
<td>Potentially life-threatening</td>
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<tr>
<td>Patient without DAPT for 3 days as discharge prescriptions sent to mail order pharmacy (potential 9-day delay).</td>
<td>Prescription rerouted to local pharmacy for immediate fill.</td>
<td>Stent thrombosis</td>
<td>Potentially life-threatening</td>
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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


SELF-ASSESSMENT QUESTION 1

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