2021

Pharmacist Impact on Cardiology Bundle Payments for Care Improvement and Patient Outcomes

Megan Wagner PharmD

Jordan Holder PharmD

Priya Verma PharmD, BCACP

Pharmacist Impact on Cardiology Bundle Payments for Care Improvement and Patient Outcomes

Megan Wagner, PharmD; Jordan L Holder, PharmD; Priya Verma, PharmD, BCACP

Parkview Regional Medical Center | Fort Wayne, Indiana

BACKGROUND

- The Medicare Bundle Payments for Care Improvement (BPCI) Initiative was created to better the transitions of care process, incentivize hospitals to reduce readmission rates, and improve overall care in hospitals nationwide.(1)
- As this payment structure has incorporated additional diagnoses, it has become a popular focus of research into interprofessional and pharmacy-based interventions to reduce readmission rates.
- Data shows that pharmacist-led interventions during transitions of care can significantly contribute to decreased readmission rates. (2,3,4)
- This study examines the review process of the ambulatory-based cardiology pharmacists at Parkview Health in evaluating cardiology BPCI patients. Current workflow is shown in Figure 1.

Current Pharmacist Workflow

Upon discharge, BCPI patients are added to pharmacist queue

↓

Comprehensive chart review completed by clinical pharmacist within 90 days

↓

Pharmacist documents recommendations in "iVent"

↓

Message sent directly to provider for relevant interventions

Figure 1

OBJECTIVES

- The study aims to evaluate the current pharmacist recommendation trends, to explore the impact of the Parkview cardiology clinical pharmacists on patient medication regimens and readmission events, and to identify patient populations most in need of pharmacist review.

METHODS

- This study is an IRB approved retrospective chart review.
- Inclusion Criteria: All patients qualifying for a Cardiology BPCI with Parkview Regional Medical Center and Parkview Randallia Hospital between July 1, 2020 and June 1, 2021.
- Cardiology associated bundles included heart failure (HF), acute myocardial infarction (AMI), and arrhythmia diagnoses.
- Exclusion Criteria: Patients with a subsequent readmission with a qualifying bundle diagnosis were only evaluated by the first qualifying admission within the study period.

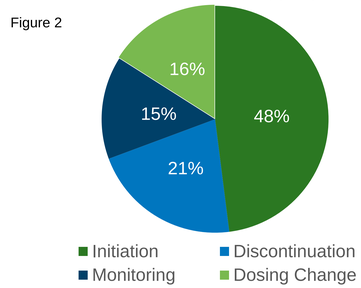
Outcomes:

- Clinical pharmacist recommendations were collected and categorized as:
  - Cardiology or non-cardiology based
  - Drug initiation, discontinuation, monitoring, or dose adjustments
- Implemented recommendations were evaluated within 30 days.
- The percentage of patients receiving guideline directed medication therapy (GDMT) at hospital discharge compared to 30 days after discharge was also collected.
- Readmission rates and emergency room visits during the bundle period were collected and assessed.
- Statistical Analysis: Results were evaluated using descriptive statistics.

RESULTS

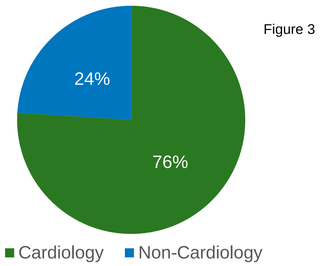
Recommendations by Type (n=75)

Figure 2



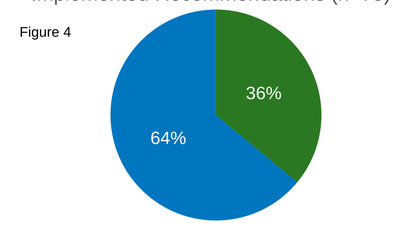
Recommendations by Service (n=75)

Figure 3



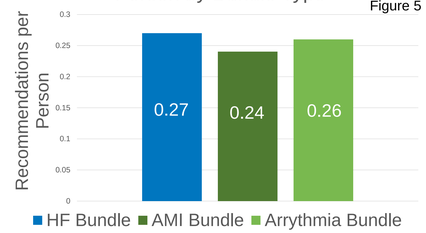
Implemented Recommendations (n=75)

Figure 4



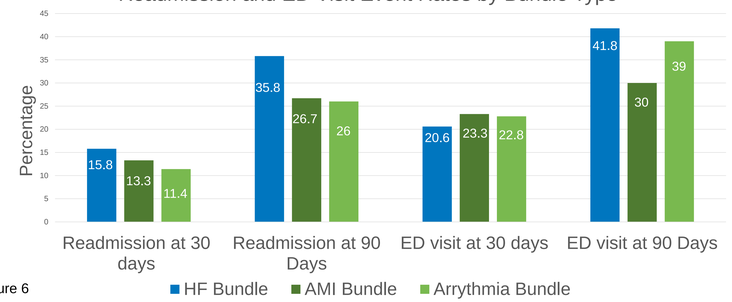
Number of Recommendations per Person by Bundle Type

Figure 5



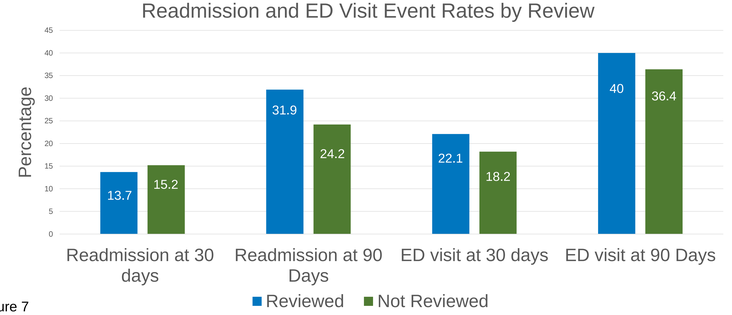
Readmission and ED Visit Event Rates by Bundle Type

Figure 6



Readmission and ED Visit Event Rates by Review

Figure 7



- During the study period, 283 of 318 qualifying patients (89%) were reviewed by a clinical pharmacist.
  - 145 of 165 HF bundle patients
  - 25 of 30 AMI bundle patients
  - 115 of 123 arrhythmia bundle patients
- One patient was excluded due to documentation errors in the pharmacy review.
- Rates of GDMT use are summarized in Table 1.

Rates of GDMT Use at Discharge and 30-Days Post-Discharge

Endpoint (discharge → 30 days post-discharge)	Reviewed patients	Non-reviewed patients
HF Patients		
Beta blocker use	69% → 69%	70% → 70%
ACE inhibitor or ARB use	48% → 48%	25% → 25%
Mineralocorticoid receptor antagonist use	39% → 39%	35% → 35%
AMI patients		
Beta blocker use	80% → 80%	80% → 80%
ACE inhibitor or ARB use	52% → 52%	40% → 40%
Aspirin use	60% → 64%	20% → 20%
Dual antiplatelet use	32% → 24%	20% → 20%
Arrhythmia patients		
Rate control agent use	84% → 81%	62% → 38%
Antiarrhythmic use	50% → 50%	13% → 13%
Anticoagulant use	75%→ 75%	50% → 50%

Table 1

DISCUSSION & CONCLUSIONS

- Pharmacists made a recommendation for roughly 1 in 4 patients in each of the three cardiology BCPI groups.
- Due to the small number of non-reviewed patients, the results comparing reviewed (n=283) to non-reviewed patients (n=35) may have limited generalizability.
- Non-reviewed patients may have a selection bias towards less critical patients and may also have included a higher number of patients who had been reviewed prior to the study period.
- Readmission events and ED visits within 90 days were highest amongst HF bundle patients. This may be a BCPI population to focus on with future interventions.
- Pharmacist review provided multiple types of clinical interventions, but implementation of these recommendations could be improved.
- Placing notes in the patient's chart in addition to direct messaging of providers may increase implementation of recommendations, especially when patients change providers.
- Further studies incorporating a matched control group may be warranted to evaluate the impact of post-discharge medication review on patient readmission rates and GDMT use.

REFERENCES

1. Centers for Medicare and Medicaid Services. Bundled Payments for Care Improvement (BPCI) Initiative: General Information [Internet]. 2021 June [cited 2021 Oct 10]. Available from: https://innovation.cms.gov/innovation-models/bundled-payments
2. Hardin L, Kilian A, Murphy E. Bundled Payments for Care Improvement: Preparing for the Medical Diagnosis-Related Groups. J Nurs Adm. 2017 Jun;47(6):313-319. doi: 10.1097/NNA.0000000000000492. PMID: 28509721; PMCID: PMC5757667.
3. Bach QN, Peasah SK, Barber E. Review of the Role of the Pharmacist in Reducing Hospital Readmissions. J Pharm Pract. 2019 Dec;32(6):617-624. doi: 10.1177/0897190018765500. Epub 2018 Apr 4. PMID: 29618283.
4. McKay C, Park C, Chang J, Brackbill M, Choi JY, Lee JH, Kim SH. Systematic Review and Meta-analysis of Pharmacist-Led Transitions of Care Services on the 30-Day All-Cause Readmission Rate of Patients with Congestive Heart Failure. Clin Drug Investig. 2019 Aug;39(8):703-712. doi: 10.1007/s40261-019-00797-2. PMID: 31102109.

Disclosure

All authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.