

Clinical Pharmacist Impact on Heart Failure Guideline Compliance and Hospitalization Rates in the Long Term Care Setting

#43



Authors: J. Mann, PharmD, BCPS (CTS), M. Odell, PharmD (WB),
L. O'Hara, PharmD, CGP (CTS), A. Seebach, PharmD (WB)



Conclusion

- The Consultant Pharmacist plays a vital role in the management of Heart Failure.
- The role of the Consultant Pharmacist goes beyond medication management and includes non-pharmacologic interventions such as diet adherence and weight monitoring.
- ACEI Therapy intolerance appeared significant in this evaluation of data and hindered increased utilization of therapies which inhibit the Renin-Angiotensin System.
- Studies suggest that each 10% improvement in ACC/AHA guideline-recommended composite care is associated with a 13% lower odds of 24-month mortality.⁵
- This review suggests that the Consultant Pharmacist may potentially lower odds of 24-month mortality by approximately 26% and this represents an opportunity for further evaluation.

The Consultant Pharmacist may lower odds of 24-month mortality by

26%

Background

Introduction

- Currently 5.7 million American have a diagnosis of Heart Failure. Each year 670,000 new cases are diagnosed. Mortality rate exceeds 275,000 annually and Heart Failure accounts for 990,000 hospital discharges each year.¹
- According to a 2011 OIG report, Heart Failure was the 3rd leading cause of hospitalization in nursing home residents.²
- Median survival after the first, second, third, and fourth hospitalization was 2.4, 1.4, 1.0, and 0.6 years. Advanced age, renal disease, and history of cardiac arrest attenuated the impact of the number of Heart Failure hospitalizations.³
- Over two-thirds of Heart Failure hospitalizations are PREVENTABLE. Diet Noncompliance (24%), Prescription Noncompliance (24%), and Inappropriate Prescriptions (16%) account for approximately 64% of all Heart Failure readmissions.⁴
- Each 10% improvement in ACC/AHA guideline-recommended composite care is associated with a 13% lower odds of 24-month mortality.⁵

Objective

- Identify Long Term Care facility residents with a diagnosis of Heart Failure
- Evaluate compliance with ACC/AHA Heart Failure guidelines
- Improve guideline compliance with Consultant Pharmacist generated recommendations
- Quantify the Consultant Pharmacist's impact on Heart Failure guideline compliance

Methods

- ACC/AHA Heart Failure Guidelines were reviewed and based upon guideline recommendations a data collection form was created
- Consultant Pharmacists identified Long Term Care facility residents with a diagnosis of Heart Failure.
 - Medical records were reviewed for a physician documented diagnosis of Heart Failure
 - Diuretic orders administered in the absence of a documented diagnosis of Heart Failure resulted in a pharmacist generated recommendation to the prescriber requesting clarification regarding indication for use
- The Heart Failure data collection form was completed monthly for each resident with a diagnosis of Heart Failure.
- Data collection included the following information:

Date, Facility, Resident ID	Digoxin Therapy Digoxin Serum Concentration	No Added Salt Diet Weekly Weights (minimum)
Heart Failure	Hydralazine Therapy	Blood Pressure
Diuretic Therapy	Nitrate Therapy	Serum Potassium, LDL, HgbA1c, TSH
ACEI/ARB Therapy	Antiplatelet / Anticoagulant Therapy	Hospitalizations
Beta Adrenergic Blocker (BB) Therapy	Calcium Channel Blocker (CCB) Therapy	Consultant Pharmacist Recommendation
Spironolactone Therapy	Non-Steroidal Anti-Inflammatory (NSAID) Therapy	Prescriber Response to Recommendation

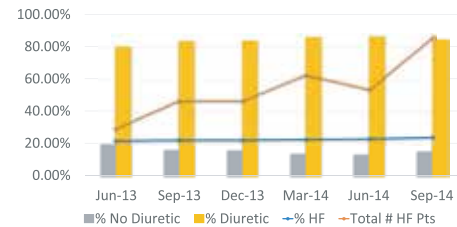
- Consultant Pharmacists generated recommendations to the prescriber or nursing facility staff regarding compliance with the Heart Failure guidelines.
- Examples of common recommendations included:
 - Initiation of an ACEI, ARB, and/or BB in those with a diagnosis of Heart Failure
 - Request appropriate dosing and monitoring of Digoxin Therapy
 - Recommend discontinuing CCB Therapy in favor of BB Therapy
 - Evaluate Acetaminophen, Gabapentin, or Tramadol Therapy instead of NSAID Therapy
 - Monitoring weights at least weekly and reducing liberalization of diets to No Added Salt
 - Increase intensity of blood pressure regimens to ensure blood pressure < 140/90mmHg
 - Request evaluation of Fasting Lipid Panels, HgbA1c, and TSH to reduce risk for development or complications of Heart Failure
- Prescriber response (positive or negative) to Consultant Pharmacist recommendations were gathered and documented.
- Results were compiled quarterly and presented to Facility Administration and Medical Director during Quality Assurance Committee meetings.
- Data collection is ongoing and evaluation of data from June 2013 through September 2014 are included in this poster presentation.

References:

- Jones DL et al. Heart Disease and Stroke Statistics Updates. Report from the AHA. Circulation 2011.
- Medicare Nursing Home Resident Hospitalization Rates Merit Additional Monitoring (OEI-06-11-00040)
- Setoguchi S, et al. Am Heart J. 2007; 154: 260-266.
- Annals of Internal Medicine 122: 415-21, 1995.
- Fonarow GC, et al. Circulation. 2011; 123:1601-1610.

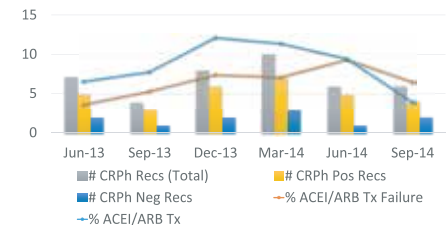
Results

Prevalence of Heart Failure and Diuretic Therapy



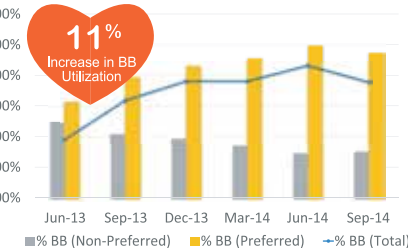
- Description of Data
 - June 2013 through September 2014, but ongoing
 - This evaluation of data includes
 - June, September, and December 2013
 - March, June, and September 2014
 - Approximately 1750 residents residing in 37 different Long Term Care facilities
- Incidence of Heart Failure found to be approximately 23%

Inhibitors of Renin-Angiotensin System and Consultant Pharmacist Intervention

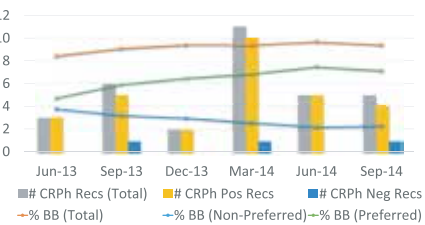


- Inhibitors of Renin-Angiotensin System Therapy Results
 - ACEI/ARB Therapy was administered to 50.70% to 56.07% of residents with a diagnosis of Heart Failure
 - Initially an increase utilization of therapy was noted but ultimately reduction in therapy occurred
 - 52.43% to 56.07% (6.94% Improvement) from June 2013 to December 2013
 - 52.43% to 50.70% (3.30% Reduction) from June 2013 to September 2014
 - Simultaneously an increase in ACEI/ARB Therapy Intolerance is noted
 - 3.78% to 6.57% (73.81% Increase)
 - Reaching 9.39% (148.4% Increase)
- Inhibitors of Renin-Angiotensin System Therapy Influenced by Consultant Pharmacist
 - Recommendation data tallied for these six specific months
 - 41 recommendations with prescriber response
 - 30 positive prescriber responses
 - 73% approval of recommendations

Beta Adrenergic Blockers

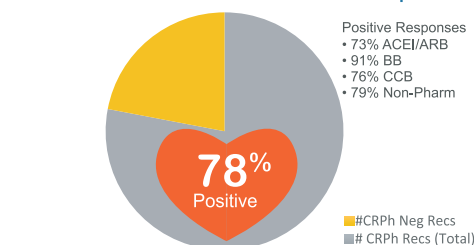


Beta Adrenergic Blockers and Consultant Pharmacist Intervention

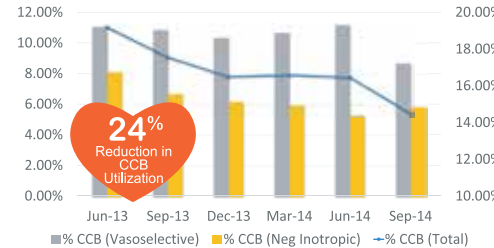


- Beta Adrenergic Blocker Therapy Improvements
 - Total Beta Adrenergic Blocker Therapy administration increased from 56.49% to 62.68% (10.96% Improvement)
 - Non-Preferred Beta Adrenergic Blocker Therapy reduced from 24.86% to 15.26% (38.62% Reduction)
- Beta Adrenergic Blocker Therapy Improvements Influenced by Consultant Pharmacist
 - Recommendation data tallied for these six specific months
 - 32 recommendations with prescriber response
 - 29 positive prescriber responses
 - 91% approval of recommendations

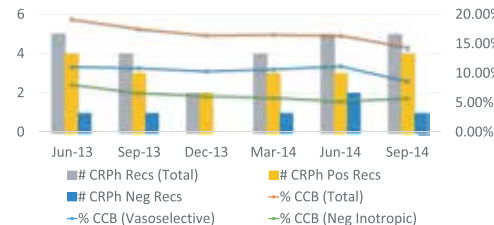
Consultant Pharmacist Recommendation Response



Calcium Channel Blockers

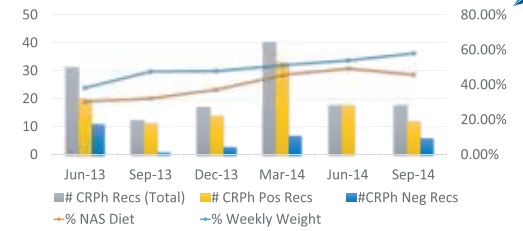


Calcium Channel Blockers and Consultant Pharmacist Intervention



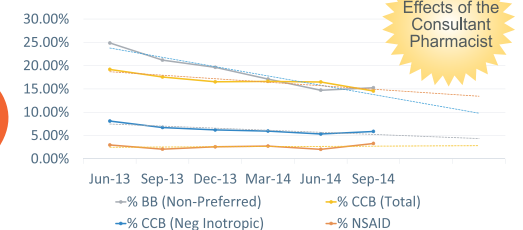
- Calcium Channel Blocker Therapy Reductions
 - Total Calcium Channel Blocker Therapy administration reduced from 19.19% to 14.55% (24.18% Reduction)
 - Calcium Channel Blocker Therapy with Negative Inotropic Effects reduced from 8.11% to 5.87% (27.62% Reduction)
- Calcium Channel Blocker Therapy Reductions Influenced by Consultant Pharmacist
 - Recommendation data tallied for these six specific months
 - 25 recommendations with prescriber response
 - 19 positive prescriber responses
 - 76% approval of recommendations

Weekly Weight and No Added Salt Diet Consultant Pharmacist Intervention



- Non-Pharmacologic Intervention Improvements
 - No Added Salt Diet improved from 31.08% to 46.01% (48.04% Improvement)
 - Weekly Weights improved from 38.65% to 57.98% (50.01% Improvement)
- Non-Pharmacologic Interventions Influenced by Consultant Pharmacist
 - Recommendation data tallied for these six specific months
 - 136 recommendations with prescriber or nursing response
 - 108 positive prescriber or nursing responses
 - 79% approval of recommendations

Potentially Inappropriate Medications in Heart Failure



- Positive Impact on Potentially Inappropriate Medications in Heart Failure
 - Non-Preferred Beta Blocker Therapy Reduced 38.62%
 - Total Calcium Channel Blocker Therapy Reduced 24.18%
 - Calcium Channel Blocker Therapy with Negative Inotropic Effects Reduced 27.62%
 - Non-Steroidal Anti-Inflammatory Use Low but Remains a Focus

Limitations:

- Data Collection Process Cumbersome and Represents Process Improvement Opportunity
 - Data collection process difficult due to lack of technological platform, multiple data bases, spreadsheets, and auditor variability
 - Data collection lacked specific characterization of interventions
 - Initiation, modification, laboratory monitoring, or discontinuation of therapy
 - Data collection lacked specific classification of ACEI/ARB Therapy "Intolerance"
 - Allergy, Hyperkalemia, Acute Renal Failure, etc.
- Data collection regarding hospitalization rates not reportable
 - "Hospitalization" not defined (emergency department vs. hospitalization stay)
 - "Hospitalization" not defined ("all-cause hospitalization" vs. "Heart Failure related hospitalization")