# IMPROVING PNEUMOCOCCAL POLYSACCHARIDE VACCINATION RATES IN PATIENTS WITH CONGESTIVE HEART FAILURE AND CARDIOMYOPATHY

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**Category:** Health Outcomes / Services Research

**Background**
Patients with cardiovascular disease are at increased risk for complications of pneumococcal disease. Up to 50% of heart failure exacerbations are triggered by respiratory infections. Large heart failure registry data has shown respiratory infections or pneumonia to be the leading precipitating cause of heart failure hospital admissions and associations with in-hospital mortality. Streptococcus pneumonia accounts for approximately 400,000 hospitalizations annually in the United States with a high fatality rate.
Vaccination is a low-cost intervention that could decrease morbidity, mortality and healthcare costs associated with heart failure. While many patients over 65 are offered vaccination as part of their routine wellness care, few efforts have focused on vaccinating high-risk patients under age 65.

**Objectives**
To improve pneumococcal polysaccharide vaccination (PPSV) rates among patients aged 19-64 with congestive heart failure (CHF) or non-hypertensive cardiomyopathies, by 25% in 3 months.

**Methods**
We gathered expert input from literature reviews, national guidelines, practicing clinicians, and informaticists to identify potential interventions to improve vaccination rates in cardiomyopathy and CHF patients at the Baylor General Internal Medicine Clinic. We identified interventions for a two-PDSA-cycle improvement project. Our first intervention involved creating a “Best Practice Advisory" (BPA) in the electronic health record (EHR) that alerted physicians during office visits when a patient met criteria for vaccination. The BPA was activated on 2/7/2018 and we collected and analyzed vaccination rates (% of eligible patients who were vaccinated) X days before and Y days after the intervention to identify its impact. Our next intervention will involve a physician education program to improve the understanding of guidelines related vaccination in this population and promote awareness of this BPA.

**Results**
Baseline data shows that pre-intervention, the mean vaccination rate for the PPSV vaccine in our target population was 66.7%. After the first PDSA cycle, the mean vaccination rate increased to 85.42%.

**Discussion**
The initial results indicate improved mean PPSV vaccination rates in patients with cardiomyopathies and CHF under age 65 by approximately 20% after the first intervention. This is promising given the limited promotion of this BPA. Data collection is ongoing to increase sample size for calculation of statistical significance, but this suggests that even EHR-only interventions are likely to improve guideline-based vaccination rates when such interventions are integrated into existing physician workflows. An additional intervention is planned to promote awareness of vaccination guidelines and use of BPA with the aim of achieving improved vaccination rate above our 25% improvement threshold.