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Improving the rate of PPSV-23 vaccination in children with Type I Diabetes

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Improving the rate of PPSV-23 vaccination in children with Diabetes Mellitus

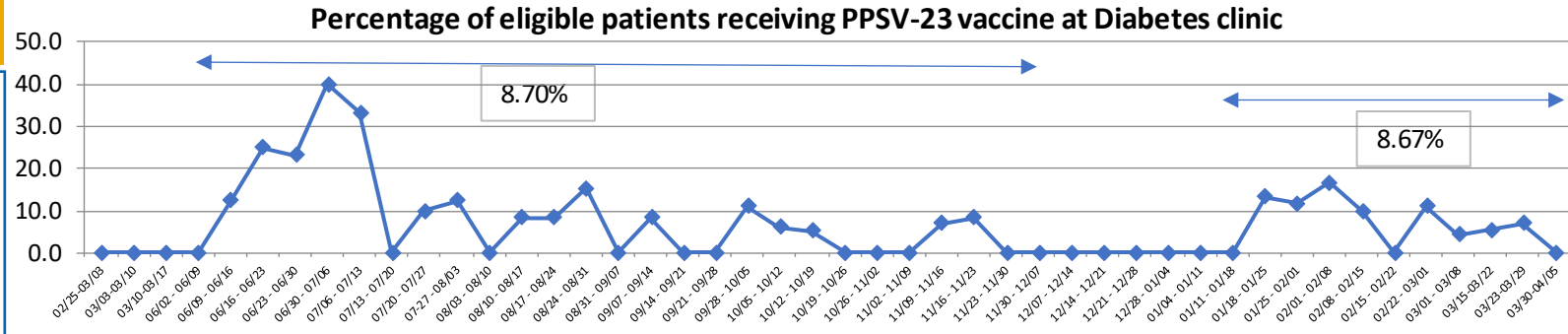
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Background

The routine use of PCV-13 has resulted in a dramatic reduction in the incidence of pneumococcal infections among young children.¹ However, serious pneumococcal infections caused by additional vaccine serotypes continue to occur in older children with high-risk conditions.¹ Thus, children with Diabetes should receive the PPSV-23 vaccine beginning at 2 years of age and at least 8 weeks after their last indicated dose of PCV-13.²

A review of Endocrinology division data from March 2016 to November 2018 revealed that only 2.6% of children seen by Endocrinology have received the PPSV-23 vaccine.³ The aim of this project was to determine reasons for the low vaccination rate, establish a protocol to set up tracking for the eligibility and administration of PPSV-23 and to have a vaccination rate of at least 5% among the eligible patient population in a six-month period from June to December 2020. This project is also part of a multidisciplinary collaborative at CMH to improve PPSV-23 vaccination rates in eligible patients with chronic illnesses.³



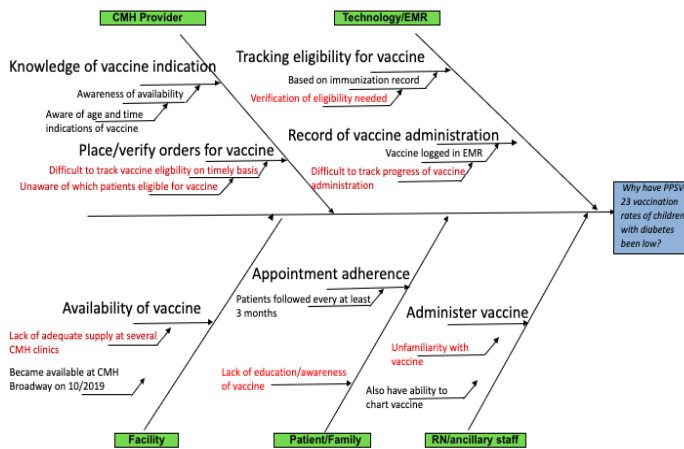
Data and Analysis

From a data standpoint, tracking and monitoring of vaccination rate among eligible patient population was carried out on a weekly basis. Eligibility is defined as pediatric patient with history of either Type 1 or Type 2 Diabetes who had completed childhood vaccination series of PCV-13, and thus were eligible to receive PPSV-23 vaccine during their Diabetes clinic visit. Outcome measure is the percentage of eligible patients vaccinated with PPSV-23 during Diabetes clinic visit.

Summary

With PPSV-23 vaccine being indicated in all children with Diabetes beginning at 2 years of age, this project has been started in order to help improve the rate of vaccination of this patient population at CMH. Root causes to the problem were identified and countermeasures were put in place in order to rectify them. Improvements in PPSV-23 vaccination rates were noted, although more work is needed to sustain goal for another six-month period. Vaccination rates will be monitored in conjunction with the CMH multidisciplinary collaborative to improve vaccination rates in high-risk patients with chronic illnesses.

Identify Root Cause - Fishbone Diagram



Develop and Implement Countermeasures					
Countermeasure	PSDA Cycle	Root Cause Addressed	How to Measure	Actions	Whom to Impact
Ensure supply at all clinic locations	1	Availability of vaccine	Check in with Clinical Pharmacy and RN managers at each clinic	Make PPSV-23 available in Cerner's Rx Station at all clinic locations	Patients, providers, support staff
Supplying of patient fact sheets	1	Patient awareness and education	RN manager check in	Compile fact sheets (CDC, Immunization action Coalition), distribute to clinic offices	Patients, support staff
Immunization verification	2	Eligibility confirmation	Bi-weekly data report with alert of current vaccination status	Weekly review of immunizations for upcoming Diabetes Clinic patient visits pulled from report	Patients
Establishment of suitable tasks/responsibilities for providers	2	Provider role in education of vaccine for patient	N/A	Provider meeting to review vaccine education	Providers/RN/Ancillary staff
Establishment of suitable tasks/responsibilities for RN/ancillary staff	2	RN/ancillary staff role in vaccine administration	N/A	Communication established with RN manager/charge RN/CA's in designated roles for vaccine administration	Providers/RN/Ancillary staff
Message alert regarding vaccine eligibility	2	Provider awareness	Based on weekly review from bi-weekly data reports	providers on weekly basis regarding upcoming patients that are eligible for vaccine	Providers
Providing run charts	2	Provider awareness of vaccination progress	Post-weekly review of vaccination status	Run charts to be provided on weekly basis	Providers
Duty reassignment	3	Tracking eligibility and administration of vaccine	N/A	Allocation of duties for long term continuation of QI project	Endocrine Department
Ambulatory organizer alert	3	Provider awareness	Post-weekly review of vaccination status	Utilize ambulatory organizer in Cerner to alert providers of	RN/Ancillary staff
PPSV-23 fact sheets	3	Patient awareness and education	RN manager check in	Succinct 1-page handout for patients at Diabetes clinic	RN/Ancillary staff

Credits/Disclosures/References

- 1 Committee on infectious diseases. Immunizations for Streptococcus Pneumoniae Infections in High-Risk Children. Pediatrics. December 2014. 134 (6) 1230 – 1233.
- 2 Miwako Kobayashi, MD; et al. Intervals Between PCV13 and PPSV23 Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP). Center for Disease Control MMWR. September 4, 2015. 64(34):944-947.
- 3 Harris, Luke; Moran, Rachel; Blowey, Doug. Improving Pneumococcal Vaccination Rates in High Risk Patients Across Multiple Specialty Divisions. Children's Mercy Hospital.