Improving Pneumococcal Immunization Rates Among Immunocompromised Adolescent Patients with Inflammatory Bowel Disease (IBD)

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Disclosures

• Disclosure:

Pfizer Inc. research grant for improving immunization rates among adolescents with immunocompromising conditions
Pneumococcal infections in immunocompromised patients

- *Streptococcus pneumoniae* is a leading cause of severe infections among immunocompromised patients

- The administration of both the Prevnar 13 vaccine (PCV13) and the Pneumovax 23 vaccine (PPSV23) is indicated for patients with immunocompromising conditions per U.S. Advisory Committee on Immunization Practices (ACIP) guidelines
Background

- These high-risk children and teens often require additional vaccinations (such as the pneumococcal vaccines) and/or schedule modifications to meet Advisory Committee on Immunization Practices (ACIP) guidelines.
- Due to these updated recommendations by ACIP, pre-intervention delivery and documentation of pneumococcal immunizations to children and adolescents with IBD at Cincinnati Children’s Hospital Medical Center (CCHMC) occurred less than 5% of the time.
Pneumococcal vaccines

• **Prevnar 13 (PCV13)**
  - Polysaccharide Protein Conjugate
  - Serotypes-3,4,5,6A,6B,7F,9V,14,18C,19A,19F, 23F
  - Introduced in 2010

• **Pneumovax 23 (PPSV23)**
  - Contains the capsular polysaccharides of 23 serotypes: *(Those in PCV13 except 6A)* + 11 others

• Giving both immunizations is felt to provide broader coverage and better “memory”
Pneumococcal vaccination schedule

- Administration: 8 weeks between the PCV13 and the PPSV23
- PPSV23 boosters should be given every 5 years
Objectives

• **Global aim:**
  Assure timely immunizations for immunocompromised patients seen in CCHMC

• **SMART aim**
  Increase the percentage of immunocompromised patients 11 years and older seen in the Inflammatory Bowel Disease (IBD) clinic at CCHMC who receive PCV13 vaccine from <5% to 80%.
Methods

• Identification of the problem, aims, root cause analysis and interventions were completed using rapid cycle improvement methodology (RCIC)

• Eligible patients included adolescents defined as immunocompromised according to Center for Disease Control and Prevention (CDC) guidelines, between 11-18 years of age, who were seen in the IBD clinic between February and October 2015
Methods

• Providers from the IBD clinic at CCHMC recognized common barriers related to immunization administration

• Interventions that were implemented during the study included:
  * Education of clinic providers and nurses
  * The development of “talking points”
  * Easy clinic access to vaccines
  * Pended order in EMR
Identifying the Immunocompromised Patient

Criteria for Receiving Prevnar 13

- Diagnosed with IBD
- Between the ages of \( \geq 11 \) years and 19 years
- Taking immunosuppressant medication:
  - Biologics (Remicade, Humira, Cimzia, Stellara, Entyvio)
  - 6MP (mercaptopurine)
  - Imuran
  - Azathioprine
  - Methotrexate
  - Budesonide/Uceris
- If receiving prednisone > 20 mg, hold the vaccine until below 20 mg.

\( \geq 11 \) to <19 years of age

Prevnar 13 followed by Pneumovax 8 weeks or more after Pneumovax already given then prevnar 8 weeks after

\( \geq 19 \) years of age

Prevnar 13 followed by Pneumovax 8 weeks or more after Pneumovax already given then prevnar one year after
**Talking Points for Pneumococcal Vaccine**

**Need for Vaccine for Immunocompromised Patients**

- You are immunocompromised so you are more prone to infections from bacteria called pneumococcus.
- These bacteria may cause serious infections such as pneumonia and meningitis.
- We have a vaccine called Prevnar 13 that will help protect you from these bacteria. You received a similar vaccine of Prevnar 7 when you were a small child.
- We would like to give this to you today.
- You will need a dose of a similar vaccine in 2-3 months.
- The prices of the vaccines are similar to the cost at your PCP.
- Approximately 1/3 of the people get a local reaction of redness, warmth and pain from the vaccine.
Results – PCV13

• During the 7-month study period, 136 eligible patients were seen in the IBD clinic
• The pre-intervention immunization rate for PCV13 was <5%
• In total, 117 patients (86%) received the PCV13
Run chart – PCV13

Total % of Immunocompromised Patients who received Prevnar 13
Feb 17 - October 31, 2015

- PDSA 1 Prevnar 13 Pended
- Added Additional Provider Wk9
- PDSA 2 Added Talking Points
- Added staff to ID Immunocompromised kids and pend Prevnar 13

Percent of patients with Prevnar 13

Week

- week1 (n=38)
- week3 (n=29)
- week5 (n=20)
- week7 (n=23)
- week9 (n=15)
- week11 (n=26)
- week13 (n=32)
- week15 (n=42)
- week17 (n=47)
- week19 (n=53)
- week21 (n=48)
- week23 (n=50)
- week25 (n=39)
- week27 (n=44)
- week29 (n=63)
- week31 (n=50)
- week33 (n=40)
- week35 (n=29)
- week37 (n=39)
- week39 (n=28)
- week41 (n=39)
- week43 (n=51)

Median
Goal
Conclusions

• We demonstrated that with a few key interventions, it is possible to increase the pneumococcal vaccination rates to over 80% in a group of immunocompromised patients.

• These same measures and processes can be **easily and sustainably** implemented in other clinics for different vaccinations.

• We are currently expanding this project to the PPSV23 and Hepatitis B vaccines and automating the process.


5. Vaccines and Children with Inflammatory Bowel Disease. Available at: www.NASPGHAN.org


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www.cchmc.org/ibd