Enhanced Education and Administration of Influenza Vaccine in a Pediatric Subspecialty Practice

Carol A McCarthy MD, Leslie L Carson BSN, George H Russell MD, MS, F L Lucas PhD
The Barbara Bush Children's Hospital at Maine Medical Center, Portland Maine
mccarc@mmc.org

Background

- Yearly influenza (flu) immunization rates in children are suboptimal, lower than other childhood immunizations
- Many healthy, as well as children at high risk for complications of influenza, are seen by pediatric subspecialists during the months when flu vaccine is available.
- These visits provide opportunity to expand venues where vaccines are given and to educate about the benefits of flu vaccine.
- Recommendations from subspecialists might increase acceptance for families that are vaccine hesitant.

Objectives:
Increase education about the benefits of flu vaccine
Increase administration of flu vaccine during subspecialty visits

Methods

- Flu screening tools were created in the electronic medical record (EMR)
- From 9/1/19- 3/31/20 providers in a multispecialty pediatric practice were encouraged to use the tools to review to flu vaccine status and to offer state vaccine to eligible children 6m -18 yr
- Rates of flu vaccine administered was compared with prior year for practice and divisions
- Rates in children with certain high risk conditions were analyzed
- Reasons for vaccine refusal evaluated
- Missed opportunities for vaccine administration were reviewed

Results

5667 unique patients
→ 1788 no tool used or sufficient data to determine eligibility

3879 patients
→ 1982 reported receipt of flu vaccine

1897 patients
→ 579 not eligible
- 184 <6 months of age
- 229 >19 years of age
- 22 contraindicated
- 91 nonresidents
- 53 vaccine unavailable

1318 eligible patients
→ 687 declined

631 accepted; 615 received

Results

Flu Vaccine Administration Rates for Practice and Divisions

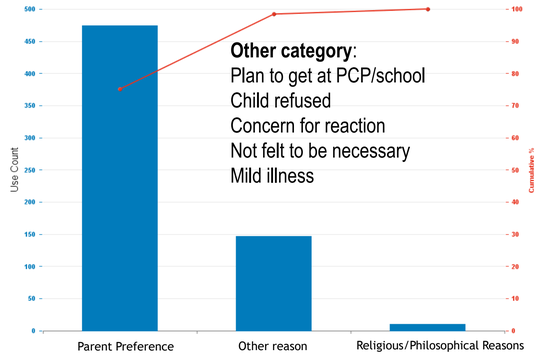
	2019/19	2019/20	p value
Practice	256/5760 (4.4%)	615/5667 (10.9%)	<0.0001
Pediatric Surgery	0/546 (0%)	6/449 (1.3%)	0.008
Endocrinology	16/1682(0.95%)	208/1752 (11.9%)	<0.0001
Gastroenterology	34/1779 (1.9%)	128/1762 (7.3%)	<0.0001
Infectious disease	68/185 (36.8%)	54/176 (30.7%)	0.27
Nephrology	2/589 (0.3%)	29/511 (5.7%)	<0.0001
Pulmonary	136/979 (13.9%)	190/1017 (18.7%)	0.005

Flu Administration Rates: Selected High Risk Groups

	2018/19	2019/20	p value
Diabetes	12/582 (2.1%)	96/575 (16.7%)	<0.0001
Inflammatory Bowel Disease	20/154 (13.0%)	30/159 (18.9%)	0.21
Cystic Fibrosis	34/71 (47.9%)	28/74 (37.8%)	0.29
Asthma	87/831 (10.5%)	132/921 (14.3%)	0.02
HIV	6/10 (60%)	4/11 (36%)	0.39
Renal Transplant	2/15 (13.3%)	3/14 (21.4%)	0.65
Chronic Kidney Disease	0/29 (0%)	5/34 (14.7%)	0.06

Results

Stated reasons for Declining Vaccine at Visits



Missed opportunities for vaccine receipt
Screening tool not utilized
Patients ineligible for state supplied vaccine (≥19yr, out of state resident)
No vaccine available
Vaccine ordered but not given

Conclusion

- Subspecialty visits provide excellent opportunities for vaccine administration.
- During the 2019-2020 flu season, all divisions had a significant increase in flu vaccine rates except for infectious disease. This division already had a high vaccine rate and travel visits declined significantly in 2020.
- There were increased flu vaccine rates in children with diabetes and asthma.
- There is a continued need to learn more about vaccine hesitancy and to provide effective education about flu and prevention
- Alerts in the EMR have been added for the current season to help decrease missed opportunities to offer vaccine
- These visits may also provide opportunity for the receipt of other new seasonal vaccines such as one for COVID-19, when available.

References

Mirza A, Subedar A, Fowler SL, et al. Influenza Vaccine: Awareness and Barriers to Immunization in Families of Children with Chronic Medical Conditions Other than Asthma. *Southern Medical Journal*. 2008;101:1101-1105.

Huth K, Benchimol EI, Aglipay M, et al. Strategies to Improve Influenza Vaccination in Pediatric Inflammatory Bowel Disease Through Education and Access. *Inflamm Bowel Dis*. 2015;21:1761-1768.

Rao S, Williams JTB, Torok MR, et al. Missed Opportunities for Influenza Vaccination Among Hospitalized Children with Influenza at a Tertiary Care Facility. *Hospital Pediatrics*. 2016;6: 513-519.

Kempe A, Saville AW, Albertin C, et al. Parental Hesitancy about Routine Childhood and Influenza Vaccinations: A National Survey. *Pediatrics*. 2020;146(1):e20193852