



## BACKGROUND

### Influenza:

- The American Academy of Pediatrics recommends that all children 6 months and older receive the annual influenza vaccination.
- Despite a high morbidity associated with the influenza virus and a high uptake of other childhood vaccinations, influenza vaccination rates for children remain low (nationally-59.3% in 2015-2016 season).
- The CDC recommends that providers offer the influenza vaccination during routine health care visits and hospitalizations when the vaccination is available.

### Pertussis:

- The Advisory Committee on Immunization Practices recommends pregnant women and household contacts of newborns receive the Tdap vaccination to provide a cocoon effect for the most vulnerable population.

Hospitalization and hospital-based clinics confer an opportunity to target high-risk patients and their families who would benefit from influenza and pertussis vaccination.

## INFLUENZA AND PERTUSSIS VACCINATION PROGRAM

- Educational sessions were conducted for inpatient nursing and Pediatric residents regarding the importance of influenza vaccination among high-risk, hospitalized patients and their families.
- In 2015, the CHOC Children's Hospital and the CHOC oncology-clinic began offering the influenza vaccination to parents of patients. In 2012, CHOC Children's Hospital began offering the Tdap vaccination to parents of hospitalized infants.
- After admission to the hospital, the nurse asked parents if they have received the current season's influenza immunization and the Tdap vaccination
- The nurse obtained parent consent, provided vaccination information statements (VIS) and administered the vaccination. Additionally, the nurse documented the date, vaccination, manufacturer, lot number, dose, and site on the consent. The nurse provided the parent with an immunization card.

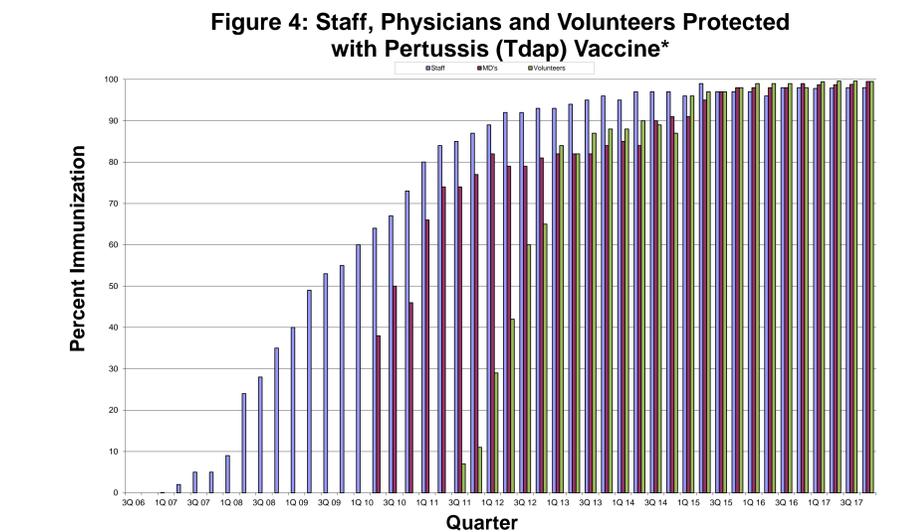
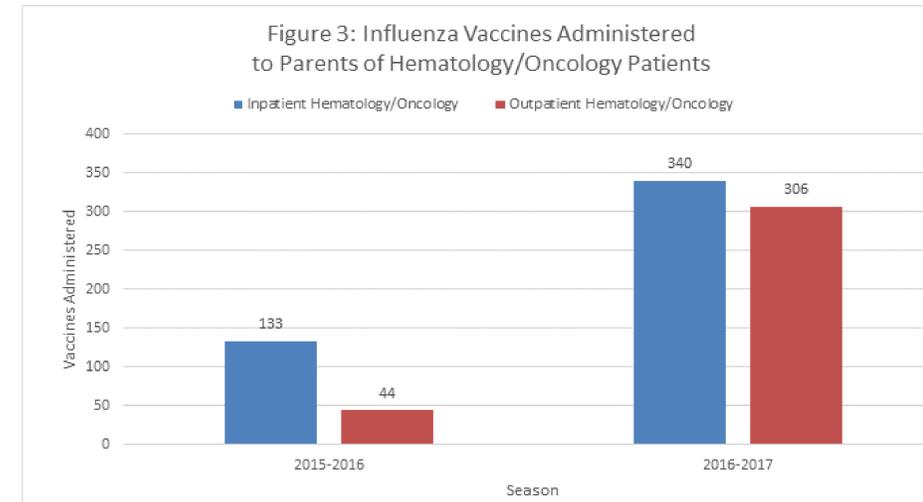
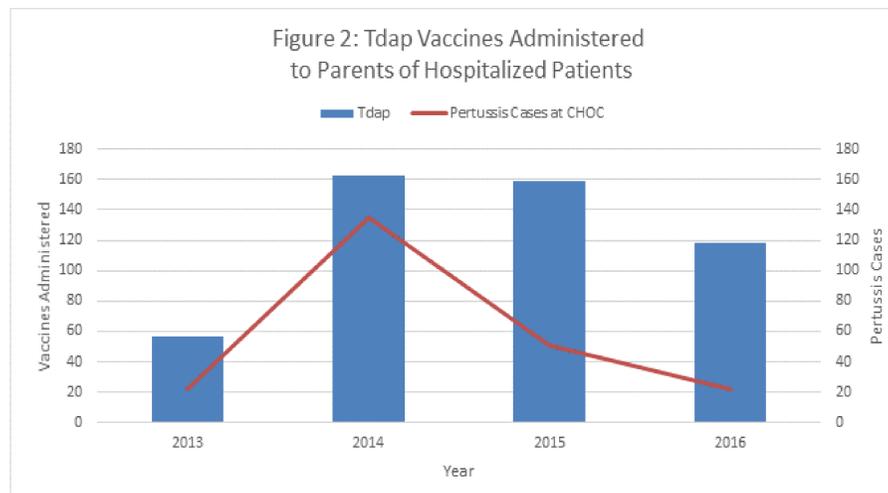
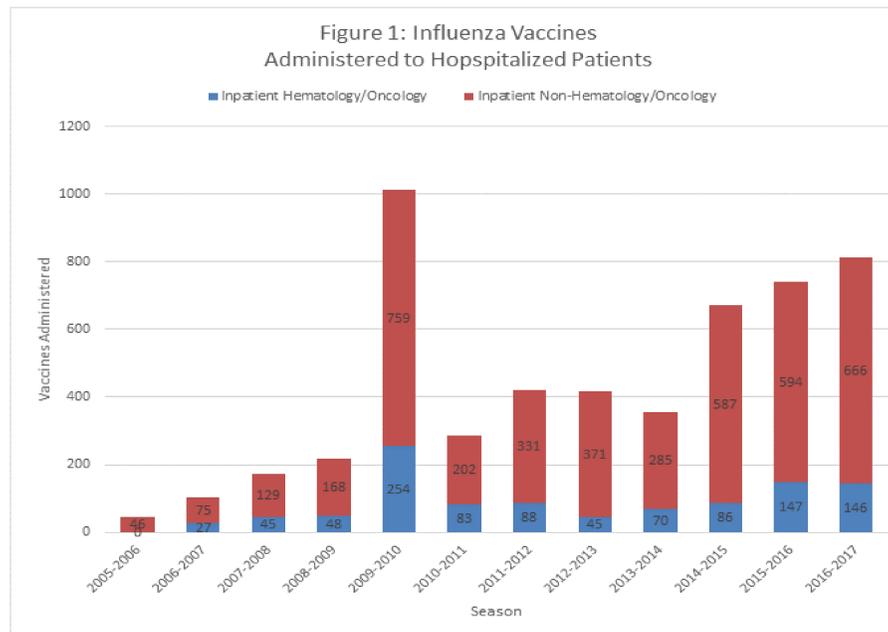
## METHODS

CHOC Children's Hospital is a tertiary-care hospital in Southern California with 316 beds and 12,898 admissions in 2017, including 1,836 hematology/oncology admissions.

We examined the trend in influenza vaccine administration in hospitalized and hematology/oncology patients over the last decade. We assessed the trend in Tdap and influenza vaccination administration among parents of hospitalized infants. We correlated those trends with disease outbreaks in the community and educational and programmatic efforts at our institution.

## RESULTS

- After educational efforts, the influenza vaccination rate in 2017 compared with 2006 increased 13-fold in hospitalized patients and increased 9-fold among hospitalized hematology/oncology patients. During the H1N1 pandemic in 2009, influenza vaccination rates increased 470% from the year prior (Figure 1).
- The number of influenza vaccinations administered in the clinic to hematology/oncology patients was 494 and 408 in 2015-2016 and 2016-2017, respectively.
- Following program initiation, the number of Tdap vaccinations administered to parents during their child's hospitalization increased from 57 doses in 2013 to 118 doses in 2016. The trend in vaccination roughly followed pertussis outbreak cases (Figure 2).
- The number of influenza vaccinations administered to parents of hematology/oncology patients during their child's clinic visit increased from 44 doses given in 2015-2016 to 306 doses given in 2016-2017 (Figure 3).
- At our institution, among staff we achieved a 98% vaccination rate for Tdap and influenza in 2017. There were no serious adverse events reported after patient, parent or staff vaccination during this time period (Figure 4).



## CONCLUSIONS

- Missed opportunities for vaccination of high-risk children include hospitalization and specialty clinic visits.
- Creating a culture of vaccination and public perception of vaccine importance during outbreaks can increase the influenza vaccination rate among high-risk, hospitalized and hematology/oncology patients.
- Programs targeting families of high-risk patients are an opportunity to cocoon a vulnerable population.
- Vaccination of hospitalized children, their parents and staff is safe in these settings.

## REFERENCES

1. CDC. Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2017–18 Influenza Season. MMWR 2017 / 66(2);1–20.
2. CDC. Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine (Tdap) in Pregnant Women and Persons Who Have or Anticipate Having Close Contact with an Infant Aged <12 Months — Advisory Committee on Immunization Practices (ACIP). MMWR 2011 / 60(41);1424-1426.
3. CDC. Flu Vaccination Coverage, United States, 2015-16 Influenza Season, <https://www.cdc.gov/flu/fluview/coverage-1516estimates.htm>