2-2021

Assessing the utilization and effectiveness of pediatric order sets in HPV vaccine administration in a large urban family medicine practice

Lakshmi Narayanam

Krys Foster, MD, MPH

Sidney Kimmel Medical College™
at Thomas Jefferson University

Assessing the utilization and effectiveness of pediatric order sets in vaccine administration in a large urban family medicine practice

Lakshmi Narayanam, Krys Foster* MD, MPH

* indicates primary project advisor

Sidney Kimmel Medical College at Thomas Jefferson University

Introduction

- Vaccine administration to pediatric patients has been a vital step in eliminating and preventing deadly diseases from spreading across the world.[1]
- Human papilloma virus (HPV) vaccination remains a controversial topic with low rates of vaccination completion.
- Importance of HPV vaccination:
  - Cancer prevention
  - No screening tests available for these cancers
- In 2017, only 49% of adolescents were up to date on their HPV vaccinations.[2]
  - 2017 National Immunization Survey

Sidney Kimmel Medical College™
at Thomas Jefferson University

Introduction

- Order sets in EPIC group together helpful tools like pop-up reminders, documentation templates, vaccine schedules, and pertinent resources in a central easily accessible location.

- Usage of order sets in EPIC has been shown to improve vaccination and screening rates.

- Utilizing order sets in EPIC → enhanced patient care[3]
  - Lead screening study in family medicine: increase from 21% to 49%[3]
  - HPV vaccine administration in pediatrics: from 33.5% to 52.9%[4]

Sidney Kimmel Medical College™
at Thomas Jefferson University

Research Question & Hypothesis

- Research Question
  - What is the effectiveness of pediatric order sets in affecting rates of HPV vaccine administration in a large urban family medicine practice?

- Hypothesis
  - Utilizing pediatric order sets in a large urban family medicine practice will increase the rate of HPV vaccine administration.

Sidney Kimmel Medical College™
at Thomas Jefferson University

Review of Methods

- Retrospective chart review and data analysis
- Population: Pediatric well child visits at Jefferson Family Medicine Associates in Philadelphia, PA
- Timeline: Post-intervention period (April 2019-April 2020)

Sidney Kimmel Medical College™ at Thomas Jefferson University

Review of Methods

- Primary data collected:
  - Was patient up to date on their HPV vaccination before the encounter?
  - Was patient due for HPV vaccine at encounter?
  - Was patient up to date on HPV vaccination after the encounter?
  - Was this a missed opportunity?
  - Is the immunization report complete?

Sidney Kimmel Medical College™ at Thomas Jefferson University

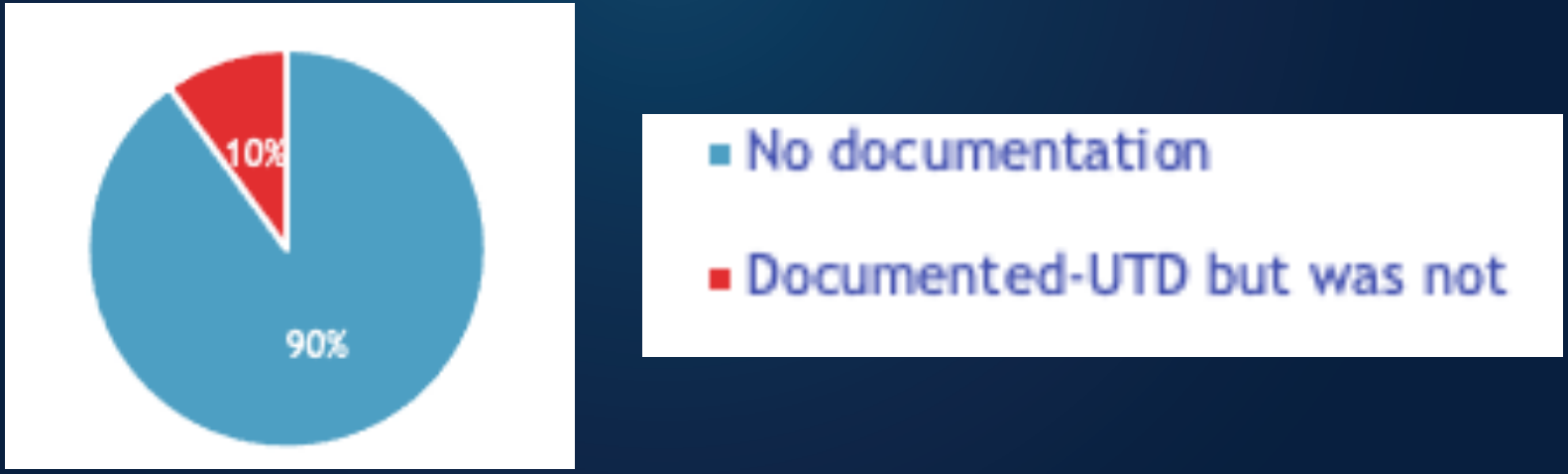
Review of Methods

- Secondary data collected:
  - Was there any documentation for the "missed opportunity" visits?
  - What were reasons for declining the HPV vaccination?
  - Was there a discussion about the importance of the vaccine if refused?
  - What kind of visits were the "missed opportunity" encounters?
    - Well child visit
    - Sick visit

Sidney Kimmel Medical College™
at Thomas Jefferson University

Results

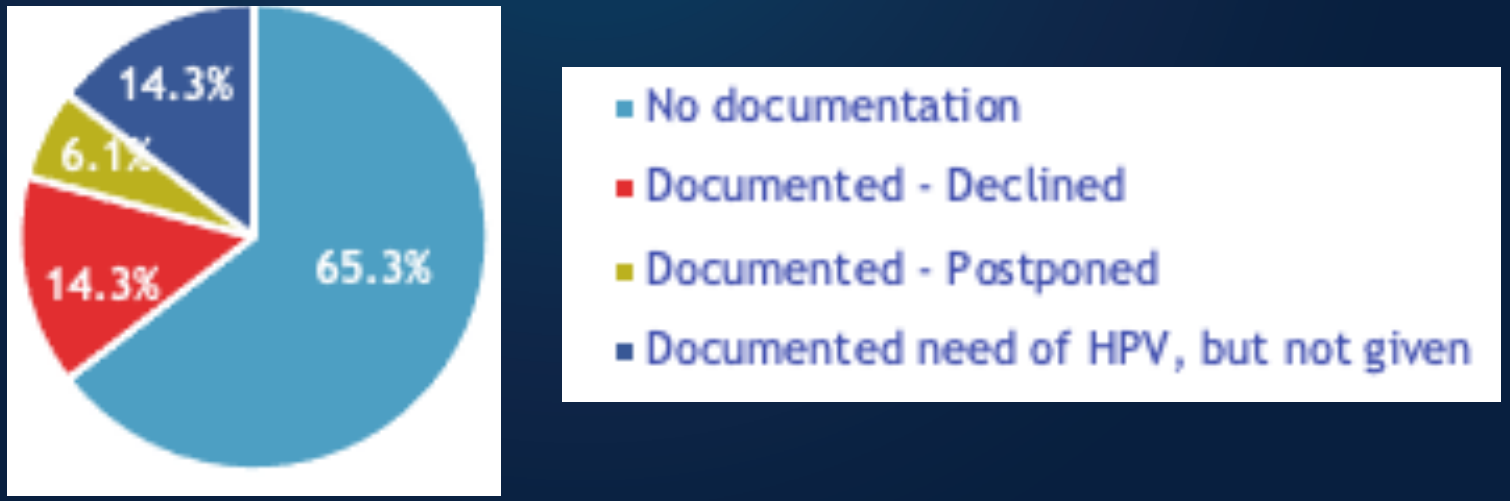
- Of the 49 encounters of patients older than 15 years and not UTD before the encounter, 29% were a "missed opportunity."
- According to the secondary analysis, none of the encounters utilized the pediatric smart sets and 90% included no associated documentation.



Sidney Kimmel Medical College™
at Thomas Jefferson University

Results

- Of the 251 encounters of patients between the age of 11-14 years, 21% were a "missed opportunity."
- Secondary analysis revealed that 87% of them did not utilize smart sets and of those, 65.3% did not have any associated documentation.
- Encounters with documentation showed HPV was declined 14.3% and postponed 6.1%.
- The remaining 14.3% stated the vaccine was needed but was never administered.



Sidney Kimmel Medical College at Thomas Jefferson University

Results

- Overall, missed opportunities were seen in sick child visits as opposed to well child visits.

- In patients 10-14 years and were due for their next HPV vaccine dose:
  - 50% of encounters who refused the HPV vaccine noted a discussion
  - 14% noted HPV vaccine was needed, but it was never administered

- In patients > 9 years and never received the HPV vaccine:
  - 33% of encounters who refused the HPV vaccine noted a discussion

- Reasons for declining vaccination
  - Parent refusal (most common)
  - Postponed for another visit
  - Fear of needles

Sidney Kimmel Medical College™
at Thomas Jefferson University

Conclusions

- These results demonstrate that a majority of missed opportunities for HPV immunization are during encounters where the pediatric order sets were not being utilized.

- In addition, most encounters without the use of the order set had no clear documentation of why the vaccine was not administered.

Sidney Kimmel Medical College™ at Thomas Jefferson University

Future Directions

- Although further studies are needed to address missed opportunities, this data illustrates that pediatric order sets have the potential to improve rates of HPV vaccination completion.
- Encourage physicians to use the pediatric order sets.
- Further enhance the order set note templates to prevent signing the encounter without a documentation field being completed.

Sidney Kimmel Medical College™
at Thomas Jefferson University

Acknowledgements

- I would like to thank and acknowledge Dr. Krys Foster for her guidance throughout this research.

Sidney Kimmel Medical College™
at Thomas Jefferson University

References

1. Rolnick S, Parker E, Nordin J, Hedblom B, Wei F, Kerby T, Jackson J, Crain A, and Euler G. "Self-report compared to electronic medical record across eight adult vaccines: Do results vary by demographic factors?" Vaccine 2013; 31: 3928-3935.
2. Walker TY, Elam-Evans LD, Yankey D, et al. National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years — United States, 2017. MMWR Morb Mortal Wkly Rep 2018;67:909–917.
   DOI: http://dx.doi.org/10.15585/mmwr.mm6733a1external icon
3. Adams W, Mann A, and Bauchner H. "Use of an Electronic Medical Record Improves the Quality of Urban Pediatric Primary Care." Pediatrics 2003;(111):626-632.