

# Comparison of Influenza Vaccination Rate among children at Pediatric clinic over three seasons after intervention

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## Abstract

- Background:** CDC recommends the annual influenza vaccination for everyone 6 months of age and older. National vaccination rates for the pediatric population were:
  - 2013-2014 season- 58.8%
  - 2014-2015 season- 59.3%
  - 2015-2016 season- yet to be reported
- Methods:** This is a QI project. A baseline was established in 1 season. Interventions of extended hours and education were added in the following 2 seasons. Rates were also evaluated for the at-risk patients with asthma/reactive airway disease
- Results:** Vaccination rates similar to national average
  - 2013-2014: 58.7%
  - 2014-2015: 58.8%
  - 2015-2016: 57.9%
- Conclusion:** Further intervention is necessary for significant rate improvements. Rates were consistent with national average.

## Background

- There were 8367 influenza associated hospitalizations and 4 pediatric deaths in the 2015-2016 season in the U.S.
- Annual influenza vaccine is recommended for everyone 6 months of age or older
- The vaccine is a trivalent or quadrivalent prediction of the season's prevalent strains
- National Influenza vaccination rates
  - 2013-2014 season- 58.8%
  - 2014-2015 season- 59.3%
  - 2015-2016 season- yet to be reported

## Methods

- This was a QI (quality improvement project)
  - No IRB approval needed
- Retrospective and prospective assessment of influenza vaccination rates at Creighton University Children's Clinic
- Baseline rates established in August 2013-April 2014 season
- Intervention August 2014- April 2015 season
  - Extended Clinic hours
- Intervention August 2015- April 2016 season
  - Extended clinic hours + Education materials (CDC posters, handouts, presentation of the rates with intervention ideas)
- Rates also evaluated for at-risk patients with asthma/RAD

## References

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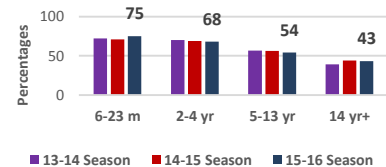
**Table 1. Influenza vaccination among children in 3 consecutive seasons**

AGE	SEASON	Vac	NO Vac	Total	Rate
Overall	13-14	2695	1894	4589	58.7%
	14-15	2803	1968	4771	58.8%
	15-16	2928	2133	5061	57.9%
6-23 m	13-14	442	172	614	72.0%
	14-15	446	182	628	71.0%
	15-16	458	153	611	75.0%
2-4 yr	13-14	703	298	1001	70.2%
	14-15	702	314	1016	69.1%
	15-16	741	341	1082	68.5%
5-13 yr	13-14	1255	959	2214	56.7%
	14-15	1314	1031	2345	56.0%
	15-16	1333	2124	3457	38.6%
14 yr+	13-14	295	465	760	38.8%
	14-15	341	441	782	43.6%
	15-16	396	515	911	43.5%

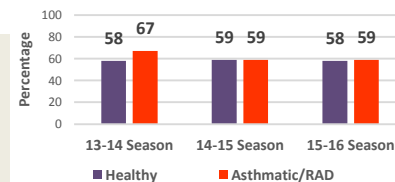
Overall there is a downward trend in influenza vaccination rate across seasons with increasing age (75% to 43%) (Table 1, Fig 1); 13-14 yr olds rate is significantly higher than 14-15  $p < 0.0001$ ; and 14-15 yr olds was significantly higher than 15-16  $p < 0.0001$ . Among 13-14 yr olds those with asthma were vaccinated at a higher proportion than those without asthma  $p = 0.0008$ . Among asthmatics 13-14 yr old rate is higher than 14-15  $p = 0.0248$  and 15-16 yr olds  $p = 0.0157$

## Results

**Fig 1. Influenza Vaccination Rates across 3 seasons**



**Fig 2. Asthmatic/Reactive Airway Disease Flu Vaccination Rates**



## Discussion

- 8367 influenza vaccinations and 4 pediatric deaths were reported in U.S. in the 2015-2016 season. Annually 20,000 children under 5 years require hospital care related to flu
- Rates for Asthmatics are similar to non asthmatics in 2015-16 season (Fig 2)
- CUMC pediatric clinic flu vaccination rate is similar to national rates (Fig 2)
- Extended hours and education alone did not increase the rates
- Vaccination at outside facility may underestimate vaccine rates
  - Rates would improve with effective use of vaccine registry-NESIIS (Nebraska state immunization information system)

## Conclusion

- All 3 seasons the rates remained the same
- Intervention for high risk patients can be addressed earlier in season
- Vaccine reminders and other strategy are needed to increase the rate
- Updates to NESIIS would allow more accurate evaluation

## Acknowledgements

We would like to thank Lynne Provondra for providing data, the Children's Clinic staff for intervention, and the immunization task force for the funding.