



# Reducing HPV Associated Cancers: Implementation of Evidence-Based Interventions to Increase HPV Vaccination Rates

## Background

Human papillomavirus (HPV) vaccine protects against HPV types that most commonly cause cervical, throat/tonsil, anal, penile, vaginal, and vulvar cancers. Despite the importance of HPV cancer prevention, South Dakota HPV vaccination coverage rates fall considerably short of the Healthy People 2020 goals of 80%. In 2017, the percentage of males and females ages 13-17 in South Dakota who were up-to-date on the HPV vaccine series was 44.8% compared to 48.6% nationally.<sup>1</sup> The U.S. Advisory Committee on Immunization Practices recommends routine HPV vaccination at age 11 or 12 years.<sup>2</sup> Vaccination may be given starting at age 9 through age 26.<sup>2</sup> To reduce the burden of HPV associated cancers, the Comprehensive Cancer Control, Immunization, and All Women Count! Programs within the SD Department of Health (SDDOH) released a request for applications targeting health systems interested in partnering to implement evidence-based interventions to increase HPV vaccination rates in the state. Health systems were required to implement at least two evidence-based interventions. Black Hills Pediatrics, LLP. was awarded \$13,653 in funding. In addition to the funding for this project, the SDDOH provided technical assistance to support project implementation and evaluation.

## Project Summary

Black Hills Pediatrics, LLP. implemented project efforts at their clinic location in Rapid City, SD. The clinic has eight pediatricians and five allied health professionals on staff and serves approximately 6,400 male and female patients ages 11-18. The project period was June 1, 2018-May 31, 2019.

## Interventions

*Client Reminder and Recall Systems:* Black Hills Pediatrics, LLP. chose to implement a client reminder system as part of the project and implemented a process within their electronic health record (EHR) to determine patients due for their first and/or subsequent doses of HPV vaccine. A combination of staff reminder calls, automated reminder phone calls, mailed reminders, and EHR portal reminders were utilized to remind the patient's parent/guardian that they were due for HPV vaccination.

*Provider Assessment and Feedback:* Provider assessment and feedback efforts included sharing and discussion of clinic and provider-level vaccination coverage rates in an open and unblinded manner to drive quality improvement efforts.

*Patient and Provider Education:* Black Hills Pediatrics, LLP. provided patient and provider education regarding the HPV vaccine and encouraged establishment of a same way, same day and no missed opportunity culture that aimed to ensure every eligible adolescent received a strong recommendation for the HPV vaccine regardless of their visit reason.

## Outcomes

Black Hills Pediatrics, LLP. was asked to provide system-level data at baseline and on a quarterly basis throughout the project. The data presented in this section was compiled from grantee reports. Efforts were made by program staff to aid sites in providing accurate data reporting; however, accuracy is not guaranteed. Outcome measures tracked to demonstrate effectiveness included HPV vaccine doses administered, HPV vaccine series initiation rates (one or more doses), and HPV series completion rates. Overall, 4,135 client reminders and 1,477 doses of HPV vaccine were administered during the project.

Series initiation and completion rates increased for all age groups through the project. Black Hills Pediatrics, LLP. saw a 13% increase over baseline in HPV vaccination initiation rates among all patients ages 11-18. HPV vaccination series completion rates increased by 14% over baseline among all patients ages 11-18.

Black Hills Pediatrics, LLP. serves as an outreach clinic for certain specialty providers. Outreach only patients fall within the eligible patient population reported above; however, these patients are not truly Black Hills Pediatrics, LLP. patients since they are only seen by the specialty outreach providers. Given this, immunization record information is often not on file for the outreach only patient population. To account for this, South Dakota Immunization Information System (SDIIS) data was analyzed since SDIIS data excludes the outreach patient population and only includes patients attributed to Black Hills Pediatrics, LLP. Using SDIIS data, the final project period first dose initiation rate for HPV vaccination was 70% and the two-dose completion rate was 58% for all adolescents ages 11-18.

## Conclusion

Project efforts included implementation of client reminders, provider assessment and feedback, and patient and provider education to increase HPV vaccination rates within a pediatric practice located in Rapid City, South Dakota. The practice saw an increase in HPV vaccination initiation and series completion rates through project implementation. Other health systems in SD interested in implementing similar interventions are encouraged to reach out to the SDDOH for assistance.

## SDDOH Contact

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## References

1. 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.mm6733a1>
2. Meites E, Kempe A, Markowitz LE. Use of a 2-Dose Schedule for Human Papillomavirus Vaccination — Updated Recommendations of the Advisory Committee on Immunization Practices. *MMWR Morb Mortal Wkly Rep* 2016; 65: 1405–1408. DOI: <http://dx.doi.org/10.15585/mmwr.mm6549a5>.