



Examining Health Care Professionals' Views on Using Electronic Health Records and Immunization Information Systems to Increase HPV Vaccination

A Project of the National HPV Vaccination Roundtable Executive Summary

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EXECUTIVE SUMMARY

BACKGROUND AND METHODS

In 2016, the National HPV Vaccination Roundtable (the Roundtable) engaged Cardea Services (Cardea) to develop a white paper that explores the technological and behavioral barriers that prevent health care providers from effectively using Electronic Health Record (EHR) and Immunization Information Systems (IIS) to support on-time, complete HPV vaccination.

The primary objectives of the project are to:

1. Gather feedback from medical practitioners, administrators, and technical staff about how current EHR/IIS do or do not support HPV vaccination
2. Identify and prioritize ways to modify EHR/IIS to enhance delivery, documentation, tracking, and coordination of HPV vaccination
3. Reveal practice operation (e.g., workflow) successes and challenges with regard to how EHR systems are integrated into office practices

Between May and July 2016, Cardea interviewed medical practitioners, administrators, and technical staff who currently deliver HPV vaccines and have an EHR system in place and/or experience using IIS. This report summarizes findings based on views expressed during semi-structured, in-depth, key informant interviews with 44 respondents from 29 different agencies across the U.S. Respondents used 14 different types of EHRs and 20 different IIS/registry systems.

For purposes of this report, we use the term “agency” to refer to the organization, clinical practice, hospital system, pharmacy or health center to which the respondent is affiliated.

FINDINGS

Vaccination coverage varies widely, and series completion is low

Providers reported that they often initiate the HPV vaccine with patients at age 11 or 12; however, vaccination coverage varied widely from less than 20% to 92% of patients receiving the first dose of the vaccine. Reported series completion rates were considerably lower than initiation rates, and coverage – for both series initiation and completion – was frequently reported to be higher among girls than boys and among younger adolescents.

EHRs and IIS pose challenges to maintaining complete and accurate vaccination histories

Most EHRs have a unidirectional interface to upload vaccination history into state IIS; few offer bidirectional communication. Often agencies check their IIS for vaccination histories or rely on patient report. Neither of these approaches are ideal, and providers have concerns about the completeness and accuracy of both approaches.

Diverse clinical decision supports exist, but they are not universally available

Most respondents reported built-in, EHR clinical decision supports to notify providers when patients are due for the HPV vaccine, but the structure and utility of these tools varied widely. Several agencies lacked any formal practice for tracking vaccine administration and/or progress toward series completion. Even if clinical decision tools are available through EHRs, providers may need to manually activate those features.

Agencies have implemented many strategies to improve vaccination rates

Respondents discussed several common strategies to improve vaccination rates, often applied in combination. These strategies included using data for quality

improvement, educating providers, using patient recalls and reminders, and implementing patient education. Some respondents reported that federal and local grants, as well as research partnerships, can facilitate opportunities to implement quality improvement initiatives.

Several factors facilitate vaccine initiation and series completion

Interviews revealed that technological solutions may not be the only or best approach to improve HPV coverage rates. Respondents identified workflows involving teams and “no missed opportunity” strategies as critical to success. Communication with external agencies using the same EHR enables better vaccination history capture. While dedicated IT support can be helpful, it is not always financially feasible. Having simple, built-in features (e.g., alerts and forecasting) helps providers monitor patient progress toward series completion.

Diverse challenges including data systems, policies, and community attitudes impede HPV vaccine initiation and series completion

Respondents described EHR and IIS limitations (e.g., mismatched records, unsupportive reminder tools, data upload lag times, etc.) that make it challenging to identify patients eligible for vaccination and produce meaningful coverage reports. Parental vaccine hesitancy and community associations between the vaccine and perceived promiscuity prevent youth from initiating the series. Cost was also cited as a barrier for some youth and young adults.

Professionals suggest provider training, reminder systems, streamlined workflow, and data monitoring to improve vaccination coverage

Respondents discussed several ways to improve vaccination rates. Their suggestions included strategies to standardize provider language around vaccine promotion, institute better patient reminder systems, streamline workflow and increase flexibility for providers and patients, and engage providers in quality improvement efforts through report cards.

The Roundtable can support HPV vaccine coverage through engagement with vendors and states, provider and community education campaigns, and policy change efforts

Respondents recommended several approaches for the Roundtable to advance vaccination coverage. They suggested that the Roundtable could explore systems improvements with EHR vendors and state IIS, organize professional development opportunities for providers to learn best practices for promoting vaccine uptake, and support public awareness campaigns. In addition, respondents called for support with reducing out-of-pocket costs for patients to make the vaccine more accessible.

RECOMMENDATIONS

Data systems change

Encourage vendors to improve EHR usability

As much as possible, EHRs should be capable of bidirectional interface with IIS and be equipped with clinical decision aids (e.g., pop-up boxes, highlighted fields) to notify providers when patients are due for initial or follow-up doses. By default, EHRs ideally should also generate accurate and useful coverage reports to monitor vaccine uptake and series completion and to assist agencies with quality improvement. Standardized templates and modules to track vaccination histories and monitor coverage should be available by default.

Support bidirectional, universal, real-time, and interstate IIS

State IIS should bidirectionally interface with EHRs to coordinate care for patients who receive services at multiple sites. Funding at the state and federal levels is critical to support this technology infrastructure. State IIS should also encourage *all* providers to report HPV vaccinations to achieve complete and accurate IIS data. Stakeholders can explore ways to: 1) reduce IIS lag times to allow immediate access to patient vaccination history information and 2)

support interstate data exchange via a hub or national registry or otherwise allow for inter-IIS coordination because patients often move or cross state lines to receive care.

Agency and provider practice change

Promote prioritization of vaccination coverage

Stakeholders should promote vaccination coverage as a priority among clinical leadership to foster expansions of quality improvement efforts. With buy-in from clinical and administrative leaders, agencies can implement multi-pronged quality improvement strategies, seek funding and partnership opportunities to support and enhance these efforts, and integrate sufficient IT staff into clinical settings to further meaningful use of EHR features.

Advance quality improvement strategies in clinical settings

To improve vaccination coverage, agencies should consider establishing clinic and provider benchmarks for vaccine initiation and series completion, monitoring disaggregated coverage rates through EHR or IIS reports, and generating routine reports of patients due for initial and follow-up vaccination.

Encourage adoption of diverse communication strategies in clinical settings

Diversifying communication strategies has the potential to improve coverage. For example, launching patient reminder protocols for scheduling initial and/or follow-up doses and using more accessible communication methods to contact families and young people (i.e., text messages, emails, phone calls and/or postcards) could promote uptake.

Support new strategies and streamlined workflow in clinical settings

Adopting a “no missed opportunity” approach to ensure that patients receive the vaccine regardless of their primary reason for a visit, implementing standing orders so nurses, medical assistants, or pharmacists may administer

follow-up doses, and establishing walk-in appointments for follow-up doses to encourage series completion would all support improved coverage rates.

Increase provider and staff understanding of how to improve vaccination coverage

Developing and providing accessible professional development opportunities related to motivational interviewing, stronger recommendations for the HPV vaccine, team-based approaches to achieving higher vaccination coverage rates, and EHR and IIS capabilities could increase understanding of how to improve vaccination coverage.

Systemic policies and community attitude change

Explore opportunities for improved access to the HPV vaccine

Reducing financial barriers has the potential to increase vaccination rates. Access is still an issue for some patients, due to the high cost of the vaccine, particularly those individuals who are not eligible for Vaccines for Children (VFC).

Continue efforts to reframe the HPV vaccine through innovative marketing and patient education

Support for the continuation of national marketing campaigns aimed at increasing public awareness of the benefits of HPV vaccine should be continued. Efforts to “desexualize” language around the HPV vaccine and shift the focus to cancer prevention should be reinforced.

Convene EHR vendors and IIS vendors and administrators to enhance data systems coordination

The Roundtable should consider facilitating conversations among prominent EHR vendors and IIS vendors and administrators to bolster coordination among these stakeholders. A convening could focus on developing functional standards for EHR vaccination records and a roadmap for enhancing data systems interoperability.