

Cancer Prevention Through HPV Vaccination:

An Action Guide for Large Health Systems



ACKNOWLEDGMENTS

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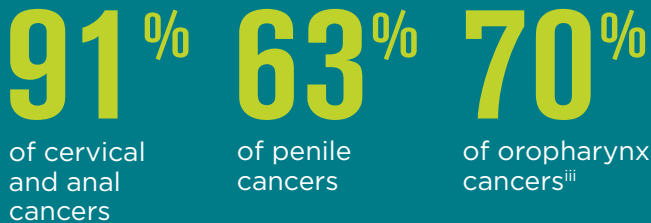
Your health system has the power to make a lasting impact on human papillomavirus (HPV) vaccination and help reduce the HPV cancer burden. **HPV cancer prevention starts with your health system.**

We invite your organization to join the national “[We’re In](#)”² movement to prevent HPV cancers and pre-cancers. By instituting system changes to improve HPV vaccination, **your health system can reduce future suffering, lower costs associated with treatment, and ultimately help save patients’ lives.**

The Problem

The HPV vaccine is a powerful tool to prevent multiple cancers, yet HPV vaccination rates lag behind those of other preteen vaccines. HPV causes about 34,800 cases of cancer in men and women each year in the U.S.ⁱ Nearly all cases of cervical cancer are caused by HPV, and the virus also causes many cancers of the vagina, vulva, penis, anus, and oropharynx.ⁱⁱ

HPV is linked with:



The HPV vaccine prevents infection by virus types that cause the vast majority of these cancers and genital warts. If fact, HPV vaccination may help to eliminate cervical cancer, which takes the lives of over 4,000 women in the U.S. each year.^{iv}

Missed opportunities for vaccination contribute to low HPV vaccination rates. A high-quality recommendation from a clinician is a powerful motivator of HPV vaccine acceptance, but many clinicians deliver the HPV vaccine recommendation hesitantly, late, or not at all.^v

The Solution

The HPV vaccine is cancer prevention. Boys and girls should complete the HPV vaccine series at age 11 or 12. The vaccine can be given starting as early as age 9. The HPV vaccine is most effective when given before age 13 to achieve the best immune response, and it provides long-lasting protection.^{vi}

HPV vaccination works. Infections with the HPV types that cause most HPV cancers and genital warts have dropped 71% among teen girls since children first started getting the vaccine in 2006.^{vii} [Get more facts.](#)³



Make it an organizational goal to vaccinate every age-eligible child in your system’s care.

Staff should understand and advocate for HPV vaccination and should work together to reduce missed opportunities.

Be a part of the cancer prevention community. This guide features actionable steps your organization can take to increase HPV vaccination **today.**





Actions At-A-Glance

Visit the action associated with each item below for detailed guidance.

Evidence-based interventions:

Presumptive recommendations	Action 3, Action 4
Standing orders	Action 4
Provider prompts	Action 4
Patient reminder and recall systems	Action 4
Plan-Do-Study-Act cycles	Action 5

Other strategies you can use:

Take the team approach	Action 1
Make the case for HPV vaccination	Action 2, Action 3
Evaluate, sustain, and celebrate success	Action 5
Create a pro-immunization environment	Patient Education Tools

If you are reading a printed version of this guide, please see the Appendix for full links to hyperlinked words, as indicated by superscript numbers (e.g., [Get more facts³](#)).

WHY PRIORITIZE HPV VACCINATION?

1 Decrease costs

- Preventing HPV cancers and pre-cancers is less expensive than testing for and treating cancers and pre-cancers.
- HPV vaccination prevents over 90% of cervical cancer cases and reduces costs associated with abnormal Pap tests, office visits, and procedures for cervical cancer prevention.
- Well-child visits that include the HPV vaccine may increase reimbursement. Providers can also take advantage of well-child visits to discuss multiple preventive topics.
- Systems with a demonstrated record of quality improvement (QI) success should contact their [manufacturer](#)⁴ representative to explore possible cost-saving solutions.
- Nationally, \$1.7 billion is spent annually in direct medical costs to treat conditions associated with genital HPV infections^{viii}—imagine the resource savings generated through prevention!
- HPV vaccination aligns with the [Medicare Access and CHIP Reauthorization Act of 2015](#)⁵ (MACRA).

2 Improve quality care

- Patients receive preventive care as part of their routine medical visits.
- The vaccines provided to patients now are expected to protect them for the rest of their lives, improving long-term population health.
- [QI projects](#)⁶ can increase HPV vaccination rates and reduce missed opportunities.
- Adolescent health care quality is measured by several Healthcare Effectiveness Data and Information Set (HEDIS) performance indicators important to payors and consumers. Improving on HPV vaccination delivery can impact organizational quality measures for immunization of adolescents and adolescent well-care visits.

3 Improve patient experiences

- Cancer prevention is better than cancer treatment. Vaccination can prevent the pain and suffering that comes from HPV pre-cancer or cancer diagnosis and treatment.
- On-time vaccination means patients only need two doses instead of three, saving parents and patients time and money. It also reduces the number of office visits to complete the series.
- Proactive methods such as providing vaccine reminders and advance scheduling of second doses reflect the needs and wants of patients. This strategy is evidence-based and has been shown to improve vaccination rates.



ACTIONS YOUR SYSTEM CAN TAKE

■ Action 1 Establish an HPV vaccine team

A [team-based approach](#)⁷ to HPV vaccination is key for continuous improvement and can be particularly effective when used in a complex, integrated health system.

- Identify a “champion” among the group to galvanize the team and lead outreach to system leadership. This person should have scheduled administrative time to guide the initiative.
- Invite clinical and non-clinical staff to serve as team members:
 - Include members from senior management, information technology (IT), quality, and population health.
 - Foster collaboration by planning, leading implementation, and addressing gaps or barriers as a team.
- Engage existing groups with similar missions, such as:
 - Internal immunization policy panels
 - External groups, including local immunization partners, American Cancer Society affiliates, or pediatric society chapters

- Monitor and report system-wide HPV vaccination rates to identify high and low performers.
 - Identify the number of patients ages 9–13 in your health system. When pulling data from electronic health records (EHR), remember to:
 - Exclude non-primary care patients, including those from emergency room, urgent care, and specialty visits.
 - Exclude patients who are no longer alive.
 - **Measure the number of HPV doses ordered and administered**⁸ in comparison with other adolescent vaccines. Ideally, providers should be ordering and administering two doses of the HPV vaccine for every one dose of Tdap.
 - Determine current HPV vaccination rates by provider, location, and/or system.
 - Report rates to senior leadership from the start to show improvement as efforts take effect.
 - Contact your local health department, which may be able to provide additional data for assessment.
- Develop system improvement goals and objectives for a specific time period.
- Create an action plan to roll out process improvements throughout the system and share this plan with leadership.



■ Action 2 Educate leadership

Securing support from C-Suite leadership is critical for creating sustainable systems change.

- Review the HPV Vaccine Team action plan with leadership, and ensure they understand [why the HPV vaccine is important](#)⁹ and how it can improve patient outcomes and lead to cost savings.
- If HPV cancer data is available, provide leadership with the number of patients diagnosed with HPV cancers and treated over the past 10 years (if able to differentiate). Include an estimate of anticipated costs.
- Include HPV vaccine information during upcoming grand rounds, focus on the vaccine as cancer prevention, and provide recommendation strategies to providers.
- Have the HPV Vaccine Team provide regular progress updates to leadership, and inform leadership of any system barriers.

■ Action 3 Create a culture of cancer prevention

Create a cancer prevention and pro-immunization culture by [communicating the importance](#)¹⁰ of the HPV vaccine to your colleagues.

- Consider developing a simple, clear organizational message:
“The XYZ health care system recommends vaccinations to help protect against meningitis, HPV cancers, and pertussis for all age-eligible patients.”
- Identify HPV vaccine champions system-wide, including in pediatrics, primary care, and oncology. Check out American Academy of Family Physician's (AAFP) [Child and Adolescent Immunization Office Champions Project](#)¹¹ for details on how to develop and implement an Immunization Office Champions program.
- Instruct providers to give a strong [bundled](#)¹² and [presumptive recommendation](#).¹³
- Assess staff and provider beliefs about the vaccine, and provide education to address common misconceptions.
- Train all appropriate staff on processes and messaging; repeat training as needed (or offer online recorded trainings).

- Communicate with IT colleagues, clinic managers, providers, and others across service lines when establishing new processes or strategies.
- Host an event, such as a [film viewing](#)¹⁴ or [survivor speaker panel](#)¹⁵ to reach both leadership and staff.
- Share successes and challenges, and reiterate why this initiative is important to your system.
 - Promote progress in newsletters.
 - Identify and engage HPV vaccine champions.
 - Partner with outside stakeholders.
 - Develop a short case study about the effective changes you made and disseminate it to all providers.



■ Action 4 Reduce missed opportunities for vaccination

Establish system-wide, standardized evidence-based interventions.

- Establish [standing orders](#)¹⁶ (procedures to facilitate efficient delivery of vaccines to age-eligible patients by properly trained medical staff other than a physician).
 - Ensure that all staff who administer vaccines receive competency training on immunization delivery.
 - Standing orders can reduce missed opportunities and help alleviate workload demands on physicians.
 - Eligible staff must be committed and empowered to act on standing orders.



- Use [EHR](#)¹⁷ to send patient reminders and give provider prompts.
 - Optimize EHR functionality to capture two doses.
 - Leverage your EHR data to inform patient care and QI efforts.
 - Improve data collection by training staff on exactly what data to capture and which fields to complete. Use [job aids](#)¹⁸ or short training videos to standardize processes.
- Connect to your state's [immunization information system \(IIS\)](#)¹⁹ to [pull down/upload](#)²⁰ current vaccination records to ensure vaccinations are captured accurately in both systems. Check first with your state health department to see what services they offer.
- Establish patient [reminder and recall systems](#)²¹ and consider how to optimize via text messaging, mail, email, and/or phone calls.
- Consider implementing a [Maintenance of Certification \(MOC\)](#)²² HPV vaccination QI project.^{ix}
- Apply QI strategies recommended by the experts:
 - HPV VACs: [Steps for Increasing HPV Vaccination in Your Practice](#)²³
 - AAP: [HPV Champion Toolkit: Making a Change in Your Office](#)²⁴
 - CDC: [IQIP Program](#)²⁵ (for Vaccines for Children [VFC]²⁶ Program providers)
 - CDC: [Quality Improvement and Evidence Based Interventions](#)²⁷
 - HPV IQ: [Immunization Quality Improvement Tools](#)²⁸
 - NIPA: [Improving HPV Immunization Rates in Practice-Based Settings Virtual Toolkit](#)²⁹
 - Merck Vaccines: [Health Care Provider-Generated Ideas for Process Improvement](#)³⁰
 - NFID: [5 Key Steps Infographic](#)³¹

■ Action 5 Evaluate, sustain, and celebrate success

Improving HPV vaccination delivery will ultimately reduce the incidence of HPV cancers and pre-cancers. Monitor your organizational progress to inspire and thank your staff for their efforts and to communicate your cancer prevention mission to patients.

- Celebrate success! Recognize clinicians, clinics, practices, or groups with consistently high and/or increasing HPV vaccination rates.
 - Nominate effective providers, practices, or teams for [CDC's HPV Vaccine Is Cancer Prevention Champion award](#).³²
 - Provide MOC and [continuing medical education \(CME\)](#)³³ opportunities via QI projects.
 - Establish an HPV QI Performance Dashboard online or post in staff work areas.
 - Showcase a site that has significantly improved performance.
- Establish [systematic ways](#)³⁴ to regularly evaluate the ongoing success of your efforts.
 - Monitor and report system-wide and provider-specific HPV vaccination rates.
 - Conduct [Plan-Do-Study-Act](#)³⁵ cycles.
 - Utilize [IIS](#)³⁶ to inform vaccination coverage assessments, missed vaccination opportunities, invalid dose administration, and vaccination coverage disparities. IIS can also facilitate inventory management and accountability.
 - Consider tracking cases of genital warts, HPV cancers (if able to differentiate), and abnormal Pap smear results.

If your practice implements changes and sees positive results in your HPV vaccination rates, let us know! Please send your story to HPV.Vaccination.Roundtable@cancer.org.



Resource Citations:

- i <https://www.cdc.gov/cancer/hpv/statistics/cases.htm>
- ii Ibid.
- iii Ibid.
- iv <http://pediatrics.aappublications.org/content/early/2016/12/01/peds.2016-1764.full>
- v <https://www.cdc.gov/vaccines/partners/downloads/teens/vaccine-safety.pdf>
- vi <http://pediatrics.aappublications.org/content/140/6/e20163947>
- vii <https://www.cdc.gov/mmwr/volumes/66/wr/mm6633a2.htm>
- viii <https://www.cdc.gov/vaccines/pubs/surv-manual/chpt05-hpv.pdf>
- ix <http://pediatrics.aappublications.org/content/early/2016/02/01/peds.2015-0675>

Create a pro-immunization environment by displaying and disseminating posters, brochures, flyers, and handouts at relevant clinics within your health system. Disseminate pro-immunization messaging via your online channels, including patient portals, office website, and social media outlets.

Materials you can use:

- Flyers and posters: CDC's Flyers and Posters for Preteens and Teens³⁷



- Industry handout: 4 Things a Parent Needs to Know About Human Papillomavirus (HPV)³⁸
- Fact sheet: [HPV Vaccine for Preteens and Teens](#)³⁹
- Social media messages: HPV Vaccine Myth Busting for Health Care Providers Social Media Toolkit⁴⁰

Looking for action guides to share with other system staff and clinicians?

Find companion guides⁴¹ that are tailored to physicians, nurse practitioners, and physician assistants; nurses and medical assistants; office teams; and dental providers in the National HPV Vaccination Roundtable's Resource Library.⁴²

National HPV Vaccination Roundtable Resources:

- Elearning module: [Increasing Adolescent Immunization Coverage](#)⁴³
- HPV survivor videos⁴⁴
- HPV Resource Library⁴⁵
- Short video: *Protecting Your Patients from HPV-Associated Cancer: What Providers Need to Know about Oropharyngeal Cancer*⁴⁶

HPV Roundtable Member Resources:

- ACS: Just the Facts⁴⁷
- ACS: Steps to Increasing Vaccination in Your Practice⁴⁸
- AAFP: Immunizations website⁴⁹
- AAP: HPV Champion Toolkit⁵⁰
- ACOG: HPV Vaccination Toolkit⁵¹
- CDC: Clinician Fact Sheets and Guidance⁵²
- CDC: You Are the Key Resources
 - Presentation⁵³
- MD Anderson Cancer Center: HPV Vaccine—Cancer Prevention for Boys and Girls⁵⁴
- MD Anderson Cancer Center: Cervical Cancer—Reduce Your Risk⁵⁵
- NCI: NCI-designated Cancer Centers Urge HPV Vaccination for the Prevention of Cancer: Consensus Statement⁵⁶

Follow the National HPV Vaccination Roundtable:



<https://twitter.com/HPVRoundtable>

<https://www.facebook.com/groups/HPVCancerFreeFamily>

APPENDIX: LARGE HEALTH SYSTEMS

1. Suite of guides: <http://hpvroundtable.org/task-groups/action-guides/>
2. We're In: <http://hpvroundtable.org/were-in/>
3. Get more facts: <https://www.cancer.org/content/dam/cancer-org/online-documents/en/pdf/flyers/hpv-vacs-just-the-facts-for-providers.pdf>
4. Manufacturer: <https://www.merckvaccines.com/Professional-Resources/Pages/Home>
5. Medicare Access and CHIP Reauthorization Act of 2015: <https://qpp.cms.gov/>
6. QI projects: <https://www.hpviq.org/>
7. Team-based approach: <https://www.cancer.org/content/dam/cancer-org/online-documents/en/pdf/flyers/steps-for-increasing-hpv-vaccination-in-practice.pdf>
8. Measure the number of HPV doses ordered and administered: <http://hpvroundtable.org/wp-content/uploads/2017/09/Texas-Vaccines-for-Children-A-Case-Study-HPV-RT.pdf>
9. Why the HPV vaccine is important: <https://www.cdc.gov/hpv/parents/cancer.html>
10. Communicating the importance: https://www.cdc.gov/hpv/hcp/continuing-ed.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fhpv%2Fhcp%2Fspeaking-colleagues.html
11. Child and Adolescent Immunization Office Champions Project: http://www.aafp.org/dam/AAFP/documents/patient_care/immunizations/office-champions-final-report.pdf
12. Bundled: <http://www.aafp.org/patient-care/public-health/immunizations/disease-population/hpv.html>
13. Presumptive recommendation: <http://pediatrics.aappublications.org/content/early/2016/12/01/peds.2016-1764.full>
14. Film viewing: <https://www.youtube.com/watch?v=wOdN-2fuq-zQ>
15. Survivor speaker panel: <https://hpvroundtable.org/speakers-bureau/>
16. Standing orders: <http://www.immunize.org/standing-orders/>
17. EHR: <https://www.healthit.gov/providers-professionals/achieve-meaningful-use/menu-measures/patient-reminders>
18. Job aids: <https://www.merckvaccines.com/Professional-Resources/EHRRelatedTools>
19. Immunization information system: <https://www.cdc.gov/vaccines/programs/iis/contacts-locate-records.html>
20. Pull down/upload: https://www.aap.org/en-us/Documents/healthInitiatives_hpvtoolkit_cleaning_iis_data_2015.pdf
21. Reminder and recall systems: <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/immunizations/Practice-Management/Pages/reminder-recall-systems.aspx>
22. Maintenance of Certification (MOC): <https://www.cdc.gov/vaccines/ed/quality-improvement-proj.html>
23. Steps for Increasing HPV Vaccination in Your Practice: <https://www.cancer.org/content/dam/cancer-org/online-documents/en/pdf/flyers/steps-for-increasing-hpv-vaccination-in-practice.pdf>
24. HPV Champion Toolkit: Making a Change in Your Office: <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/immunizations/HPV-Champion-Toolkit/Pages/Making-a-Change-in-Your-Office.aspx>
25. AFIX Programs: <https://www.cdc.gov/vaccines/programs/afix/index.html>
26. Vaccines for Children [VFC]: <https://www.cdc.gov/vaccines/programs/vfc/index.html>
27. Quality Improvement and Evidence Based Interventions: <https://www.cdc.gov/hpv/partners/outreach-hcp/quality-improvement.html>
28. Immunization Quality Improvement Tools: <https://www.hpviq.org/>
29. NIPA: Improving HPV Immunization Rates in Practice-Based Settings Virtual Toolkit: <http://www.academicpediatrics.org/niPA/index.cfm?page=quality-improvement>
30. Health Care Provider-Generated Ideas for Process Improvement: <https://www.merckvaccines.com/Professional-Resources/HCPGeneratedIdeas>
31. 5 Key Steps Infographic: <http://www.adolescentvaccination.org/professional-resources/hpv-resource-center/5-key-steps-hpv.pdf>
32. CDC's HPV Vaccine Is Cancer Prevention Champion award: <https://www.cdc.gov/hpv/champions/index.html>
33. Continuing medical education (CME): <https://www.hpviq.org/assessment-feedback-tools/prepare/>
34. Systematic ways: <https://www.hpviq.org/assessment-feedback-tools/evaluate/>
35. Plan-Do-Study-Act: <http://www.ihl.org/resources/Pages/Tools/PlanDoStudyActWorksheet.aspx>
36. IIS: <https://www.cdc.gov/hpv/partners/outreach-hcp/iis.html>
37. CDC's Flyers and Posters for Preteens and Teens: <https://www.cdc.gov/vaccines/partners/teens/posters.html>
38. 4 Things a Parent Needs to Know About Human Papilloma-virus (HPV): https://www.hpv.com/static/pdf/MKHPV_FACT_SHEET.pdf
39. Diseases and the Vaccines that Prevent Them—HPV: <https://www.cdc.gov/vaccines/parents/diseases/hpv-basics-color.pdf>
40. HPV Vaccine Myth Busting for Health Care Providers: Social Media Toolkit: <https://smhs.gwu.edu/cancercontroldtap/sites/cancercontroldtap/files/HPV%20Social%20Media%20Resources%20for%20Partners.pdf>
41. Companion guides: <http://hpvroundtable.org/task-groups/action-guides/>
42. Resource Library: <http://hpvroundtable.org/resource-library/>
43. Free 1-credit CME: <https://www.youtube.com/watch?v=pS-SZa3LY9k&feature=youtu.be#01>
44. HPV survivor videos: https://www.youtube.com/watch?v=y-FbdPY2DhTk&list=PLRuOuHzo7TdJzR83_C2ACchJl-cFw-AbTc
45. HPV Resource Library: <http://hpvroundtable.org/resource-library/>

46. Protecting Your Patients from HPV-Associated Cancer: What Providers Need to Know about Oropharyngeal Cancer: <https://www.youtube.com/watch?v=qnwb2-yYPU&list=PLRuOuHzo7TdKdq1TstwyNbSnOKMI8L4--&index=13>
47. Just the Facts: <https://www.cancer.org/content/dam/cancer-org/online-documents/en/pdf/flyers/hpv-vacs-just-the-facts-for-providers.pdf>
48. Steps for Increasing HPV Vaccination in Your Practice: <https://www.cancer.org/content/dam/cancer-org/online-documents/en/pdf/flyers/steps-for-increasing-hpv-vaccination-in-practice.pdf>
49. Immunizations website: <http://www.aafp.org/patient-care/public-health/immunizations.html>
50. HPV Champion Toolkit: <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/immunizations/HPV-Champion-Toolkit/Pages/HPV-Champion-Toolkit.aspx>
51. HPV Vaccination Toolkit: <http://immunizationforwomen.org/toolkit/hpv>
52. Presentations: <https://www.cancer.org/content/dam/cancer-org/online-documents/en/pdf/flyers/steps-for-increasing-hpv-vaccination-in-practice.pdf>
53. Non-medical audiences: https://www.cdc.gov/hpv/hcp/continuing-ed.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fhpv%2Fhcp%2Fspeaking-colleagues.html
54. HPV Vaccine—Cancer Prevention for Boys and Girls: <https://www.mdanderson.org/content/dam/mdanderson/documents/about-md-anderson/Community%20Services/HP-Vaccine.pdf>
55. Cervical Cancer—Reduce Your Risk: <https://www.mdanderson.org/content/dam/mdanderson/documents/about-md-anderson/Community%20Services/cervical-cancer.pdf>
56. NCI-designated Cancer Centers Urge HPV Vaccination for the Prevention of Cancer: Consensus Statement: https://healthcaredelivery.cancer.gov/hpvuptake/nci_hpv_consensus_statement_012716.pdf