EPIC® Immunization 2023 Update

Improving HPV Vaccination Rates in Your Practice

May 2022 Updated
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EPIC® is presented by:

Georgia Chapter - American Academy of Pediatrics

Ga. Dept. of Public Health/Immunization Program

In Cooperation with:

Georgia Academy of Family Physicians

Georgia Chapter - American College of Physicians

Georgia OB/Gyn Society

Faculty Disclosure Information

- In accordance with ACCME* and ANCC-COA* Standards, all faculty members are required to disclose to the program audience any real or apparent conflict of interest to the content of their presentation.
- This presentation will include the most current ACIP recommendations for HPV vaccine, but is not a comprehensive review of all available vaccines.
- Detailed information regarding all ACIP Recommendations is available at www.cdc.gov/vaccines/acip/recs/index.html

***Accreditation Council for Continuing Medical Education *American Nurses Credentialing Center Commission on Accreditation**

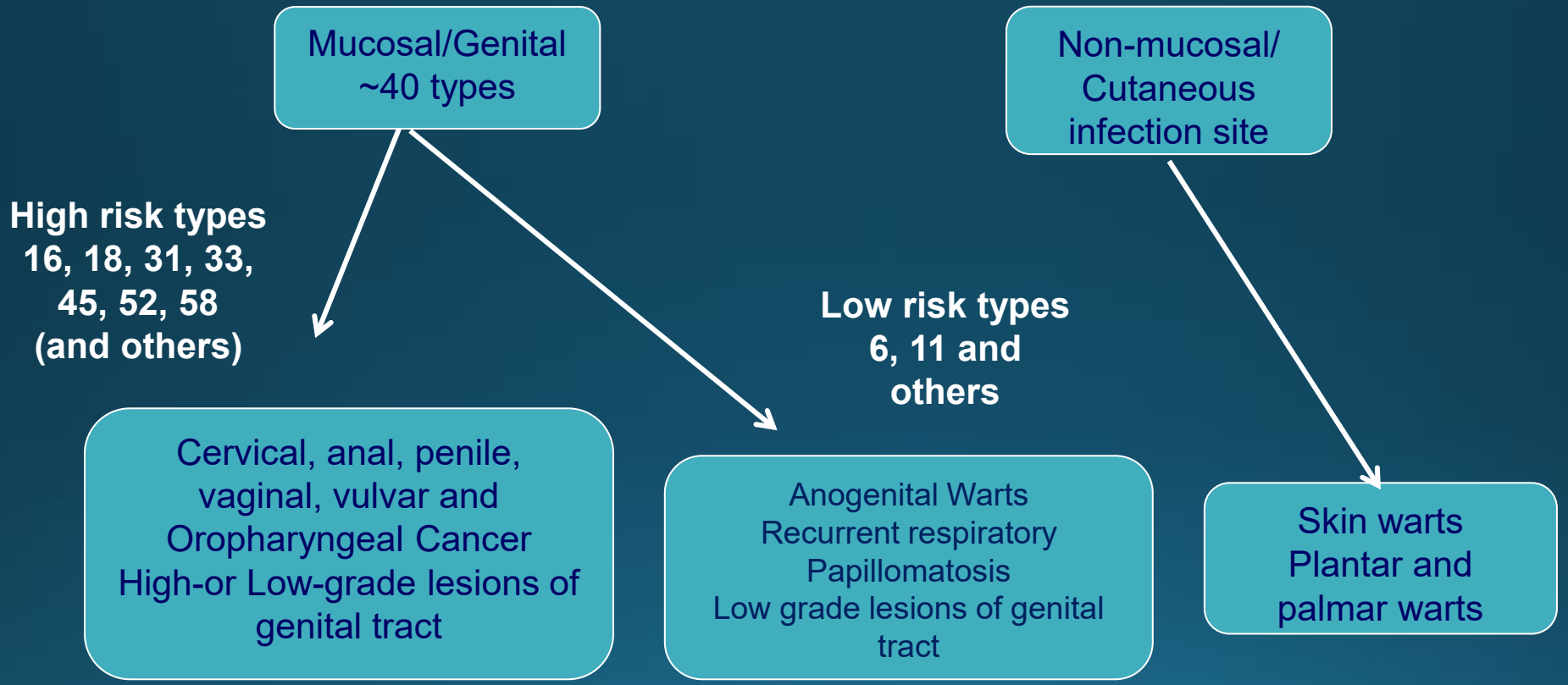
Objectives

- Discuss HPV-related disease prevalence in the U.S.
- Summarize HPV vaccination rates, nationally and in Georgia
- Evaluate current vaccination rates in an individual practice
- Formulate strategies to avoid missed HPV vaccination opportunities
- Apply communication strategies between providers and parents that facilitate HPV vaccination

CDC: HPV Home Page, https://www.cdc.gov/hpv/index.html
Epidemiology and Prevention of Vaccine Preventable Diseases 14th Edition, 2021
Red Book – AAP 2021 Report of the Committee on Infectious Diseases
Current ACIP Vaccine Recommendations: https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hpv.html

Types of Human Papilloma Virus (HPV)

(More Than 200 Types Identified)



Annual Estimates of HPV-related Diseases in the U.S.

Oncogenic

- Each year in the United States, about 43,999 HPV-associated cancers are reported
- In addition to 91% of cervical cancer, HPV is responsible for about 91% of anal cancers, 69% of vulvar cancers, 75% of vaginal cancers, 63% of penile cancers, and 70% of oropharyngeal cancers.

  On average annual reported cases:
  - Cervical---10,900 cervical cancers in women and
  - Oropharyngeal--- 11,300 oropharyngeal cancers in men.
- Non-oncogenic
  - Anogenital warts---about 90% are caused by HPV strains
  - Laryngeal papillomatosis

1/13/2023

Epidemiology and Prevention of Vaccine-preventable diseases, Pink Book, 14th edition, 2021

Disease Prevalence in the U.S.

- HPV is the most common STI in the U.S.
- Before vaccine introduction, Estimated 79 million infected in the U.S.
- 14 million new cases added each year in the U.S., half of those in persons 15-24 yrs. old.
- Every year about 43,999 HPV- associated cancers are reported in the U.S.
- Genital warts in teenagers---approximately 2% affected

Disease Potential

- Most sexually active adults will have an HPV infection at some point during their lives, although they may be unaware of their infection.
- HPV vaccination can prevent over 90% of cancers caused by HPV, as well as anal, vaginal, cervical, and vulvar precancers

https://www.cdc.gov/cancer/hpv/statistics/ and
https://www.cdc.gov/vaccines/pubs/pinkbook/hpv.html#hpv
and https://www.cdc.gov/hpv/hcp/protecting-patients.html

GENITAL WARTS*

*You Are the Key: Best Practices for Cancer Prevention, Betty Lo-Blais, MD, LSU Health Sciences Center, National AHEC Organization, HPV Immunization Project

HPV Disease Reduction

- No specific treatment is required or recommended for asymptomatic HPV infection.
- Medical management is recommended for treatment of specific clinical manifestations of HPV-related disease, including anogenital warts, laryngeal papillomas, precancers, and cancers.
- More than 9 of every 10 cases of cervical cancer are caused by HPV. Almost all cervical cancer can be prevented by HPV vaccination. Cervical cancer screening is also of utmost importance in addition to HPV vaccination.
- Cervical cancer is the ONLY type of HPV cancer for which there is a recommended screening test. Others may not be detected until they cause health problems.

Over 90% of HPV cancers are preventable through HPV vaccination.

https://www.cdc.gov/hpv/parents/cancer.html

Evidence of Reduction in HPV Prevalence

National Health and Nutrition Examination Survey (NHANES) Data (2003-2010)

Prevalence of HPV 6,11,16,18 in U.S. girls age 14-19

2003-2006: **11.5%**

HPV Vaccine
Licensed in 2006

2007-2010: **5.1%**

(Decline of 56%)

Markowitz et al, J Infect Dis . 2013 Aug 1;208(3):385-93.

HPV vaccination works!*

Within 10 years of vaccine introduction, infections with the four HPV types prevented by Gardasil decreased in the U.S.

by 86% among 14-19 year old females

By 71 % among 20-24 year old females

VACCINE EFFECTIVENESS= 71-86%!

- https://www.cdc.gov/vaccines/vpd/hpv/hcp/safety-effectiveness.html

HPV Vaccine

Gardasil 9® (9vHPV) HPV types 6, 11, 16, 18, 31, 33, 45, 52, 58

ACIP recommends HPV vaccine starting at age 11 or 12 years for:

- All males and females through 26 years of age
- Catch-up vaccination for persons through age 26 who are not adequately vaccinated

Gardasil 9 is now also licensed for all persons 9 through 45 yrs. of age

- Use the 3-dose schedule for persons 15-45 years of age
- Based on shared clinical decision making, the series may be given to persons ages 27-45.

4vHPV and 2vHPV are licensed but not currently distributed in the U.S.

Current ACIP Vaccine Recommendations: https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hpv.html

ACIP Recommendations and Schedule

2 Dose Schedule:
HPV vaccine initiated between 9-14 years can be given in two doses: 0, 6-12 months.
(If the 2nd dose is administered at least 5 months after 1st dose, it can be counted).

3 Dose Schedule:
HPV vaccine initiated after the 15th birthday or people with certain immunocompromising conditions should be vaccinated with the 3-dose schedule: 0, 1-2, 6 months

(Dose 2 should be given at least 1 to 2 months after first dose (1 month minimum); Dose 3 should be given at least 6 months after the first dose
(minimum of 3 months between dose 2 and 3)

Current ACIP Vaccine Recommendations: https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hpv.html

Globally

- Decreases in vaccine-type prevalence, genital warts, and cervical precancers have been observed in more than 14 countries with HPV vaccination programs, including Australia, Scotland, and others

- In Sweden and Denmark, women who had been vaccinated in their teens have been shown to have a lower risk of cervical cancer as adults.

https://www.cdc.gov/vaccines/vpd/hpv/hcp/safety-effectiveness.html
https://pubmed.ncbi.nlm.nih.gov/31255301/
Lei J, Ploner A, Elfstrom KM, Wang J, Roth A, Fang F, et al. HPV vaccination and the risk of invasive cervical cancer. N Engl J Med. 2020;383:1340-1348.
Kjaer SK, Dehlendorff C, Belmonte F, Baandrup L. Real-world effectiveness of human papillomavirus vaccination against cervical cancer. J Natl Cancer Inst. 2021. djab080, https://doi.org/10.1093/jnci/djab080.

HPV Vaccine Coverage in GA Compared to National Rates

The Healthy People 2020 goal is 80% for 13-17 year olds

2021 Up-to-Date HPV Estimated Vaccination coverage age 13-17

U.S.	Georgia
61.7% (up from 58.6 in 2020)	Complete HPV Series 23.4% 2018 Teen Vax View 2021: 60.90% (NIS survey)

School systems with a requirement for HPV vaccine at 6th grade and/or above (2021 NIS-Teen Survey)

Rhode Island---83% (UTD)	Hawaii---69.3% (UTD)	District Of Columbia---79.4% (UTD)

MMWR/Sept. 2,2022/ 71(35);1101–1108 National Immunization Survey-Teen, U.S., 2021
https://www.cdc.gov/mmwr/volumes/71/wr/mm7135a1.htm#T1_down
https://www.cdc.gov/vaccines/imz-managers/coverage/teenvaxview/data-reports/index.html and
Adolescent Immunization Study 2018 Final Report, Georgia

Why do we miss opportunities to immunize?

- Physician or patient unaware of the need
- Visits for mild illness, injury, or follow-up
- Need for multiple vaccines
- Invalid contraindications
- Inappropriate clinic policies
- Reimbursement deficiencies

Strategies to Avoid Missed Opportunities

- Provider Prompts
  - Automatic pop-up alerts through your EHR system
  - These can sometimes be pre-installed and then customized in your office

- Family-friendly office hours
  - Occasional evening or Saturday hours
  - “No-appointment-required” if needing immunizations only

https://www.aap.org/en-us/advocacy-and-policy/aap--health-initiatives/immunizations/Practice- Management/Pages/office- strategies.aspx

Strategies to Avoid Missed Opportunities (2)

- Immunization Champion in your practice
  - Manage vaccine supply and schedule periodic updates
  - Any member of the staff could fill this role

- Include all recommended vaccines at each visit

- Schedule periodic team meetings with all personnel to:
  - Improve patient flow
  - Improve quality of care
  - Discuss problems within the framework of the practice

https://www.aap.org/en-us/advocacy-and-policy/aap--health-initiatives/immunizations/Practice- Management/Pages/office- strategies.aspx

Reasons to Immunize Against HPV at age 11-12 Years

- Higher antibody level attained when given to pre-teens rather than to older adolescents or women
- At this age, more likely to be administered before onset of sexual activity
- HPV can be transmitted by other skin-to-skin contact, not just sexual intercourse
- There is no link between vaccine and riskier sexual behavior
- Even those who abstain from sex until marriage can be infected by their marital partner
- Individuals need to complete the series for full protection
- This is an anti-cancer vaccine, and…….

Over 90% of HPV cancers are preventable through HPV vaccination.

Bottom line: NOT receiving a healthcare provider's recommendation for HPV vaccine was one of the main reasons parents reported for not vaccinating their adolescent children.

Presented by Anne Schuchat, MD, RADM US Public Health Service, Asst. Surgeon General, Director NCIRD at Immunize Georgia Conference, Atlanta, GA, 9-11-14

Increasing HPV Vaccination Rates Among Adolescents: Challenges and Opportunities. PolicyLab: The Children's Hospital of Philadelphia, 2016.
http://www.immunize.org/askexperts/experts_hpv.asp

National HPV Vaccination Roundtable

- https://hpvroundtable.org/
- Why Age 9 - Factsheet

Practical Interventions

- Generate vaccine rate awareness
  - Know your data
  - Increase parental knowledge
- Strengthen provider recommendations and use consistent messaging
- Use a team approach, including ALL staff members
  - Periodically review and make systems changes as needed
  - Implement evidence-based interventions
- Utilize EHR and/or GRITS to evaluate progress and process improvement as needed

Key Steps for Primary Care Providers

- Make sure HPV vaccination is universally accepted within your practice
  - Don’t assume all clinicians in the practice fully support HPV vaccination
  - Confidentially assess attitudes and beliefs to guide educational and policy discussions
- Institute an evidence-based announcement approach
  - Treat HPV as you would other vaccines
  - Make parents aware that Hepatitis B is also sexually transmitted and has been routinely administered for over 20 years.
- Use standing orders for vaccination (available at www.immunize.org)
- Measure what you are doing
- Utilize Reminder recall

Reminder/Recall Is Evidence Based

- The Community Preventative Services Task Force recommended reminder recall in May 2015, based on strong evidence of effectiveness in improving vaccination rates.
- The Community Guide recommends reminder/recall across different levels of scale (from individual practices to entire communities), using a range of intervention characteristics, as part of individual or multi-component intervention.
- The included studies saw a median vaccination rate increase of 11 percentage points.

https://www.thecommunityguide.org/findings/vaccination-programs-client-reminder-and-recall-systems

AAP: Reminder Recall strategies

- **Social Media** is one way you can provide general reminders that your families should come in for immunizations and well visits.
- **Reminder postcards and letters** can be printed and mailed. You can pull a list from your EHR. Another approach is to have the family fill out the reminder card for the next visit (eg, dose 2 or 3 of HPV vaccine) when in your office. See the new customizable postcards!
- **Patient portals** are a common feature of most EHR systems. Use the patient portal to send messages to prompt patients or parents to check their patient portal for reminders about vaccinations that are due.

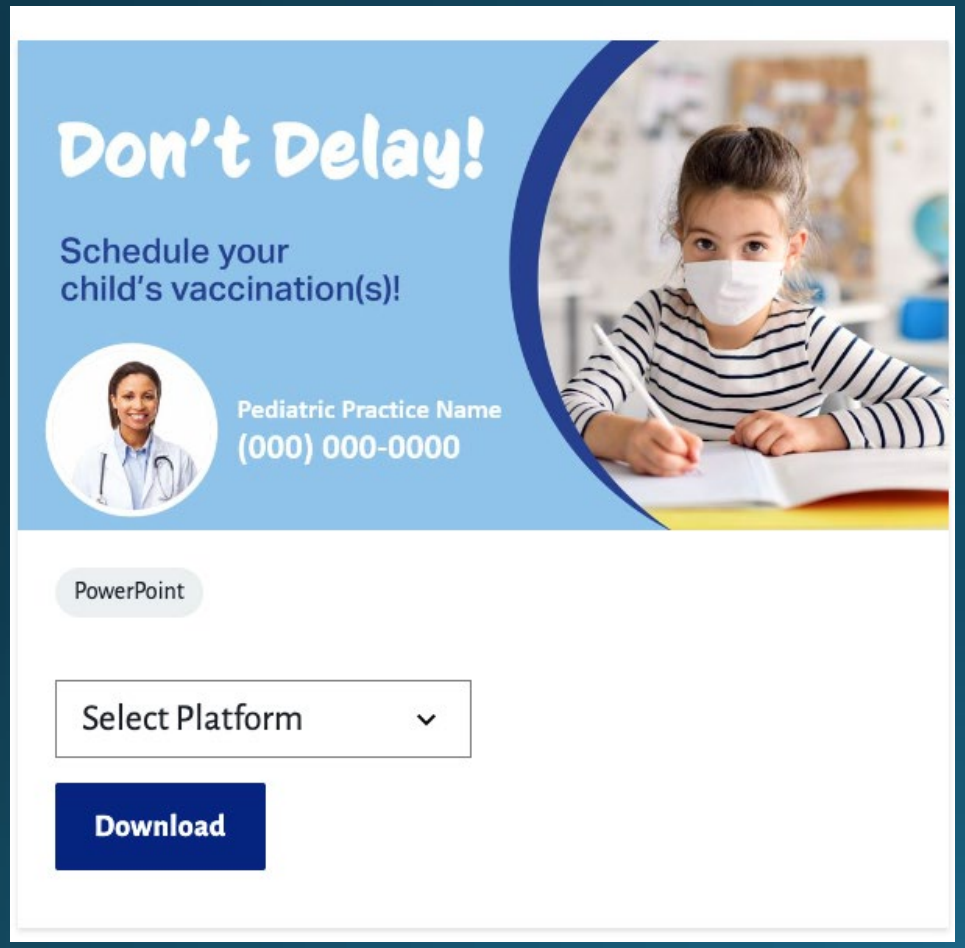
https://www.aap.org/en/patient-care/immunizations/implementing-immunization-administration-in-your-practice/reminder-and-recall-strategies/

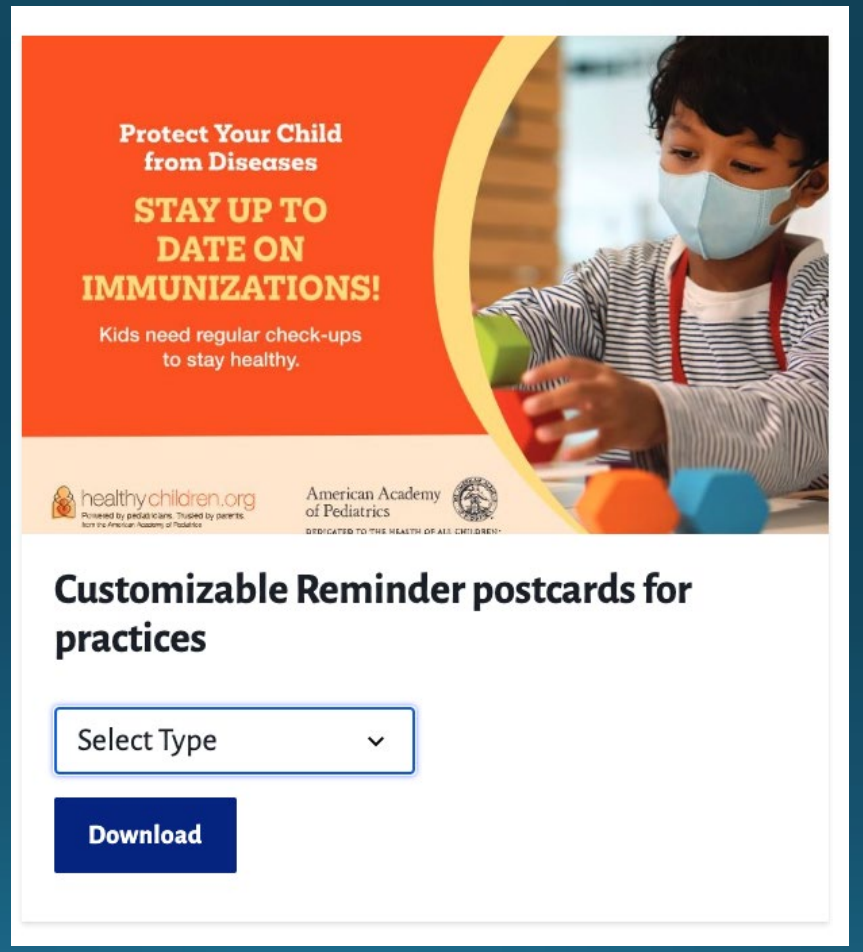
AAP: Reminder Recall strategies (2)

- **Text messages** are a great way to remind parents or adolescents about vaccinations. Note that they will need to "opt in." Obtain permission from families during office visits.
- **Phone calls** from office staff tend to be more effective than auto-dialer calls, but often cost more in staff time.
- **Auto-dialers** automatically dial phone numbers and either play a recorded message or connect the call to a person. These systems also can be used for appointment reminders.

https://www.aap.org/en/patient-care/immunizations/implementing-immunization-administration-in-your-practice/reminder-and-recall-strategies/

AAP: Download customizable social media graphics, postcards

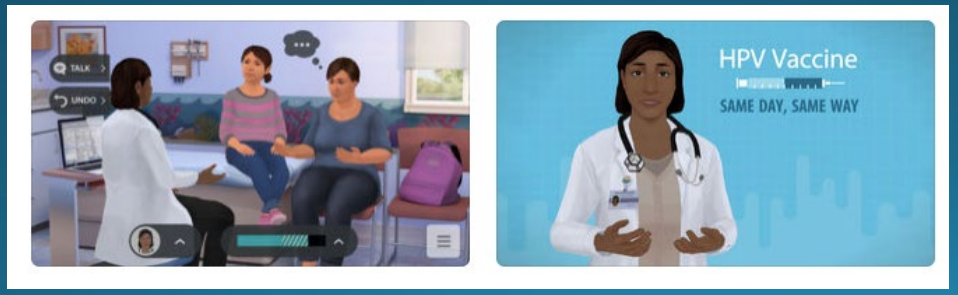




https://www.aap.org/en/patient-care/immunizations/implementing-immunization-administration-in-your-practice/reminder-and-recall-strategies/#resources

HPV Vaccine: Same Way, Same Day App

- Brief, interactive role-play simulation
- Designed to enhance healthcare professionals' ability to introduce HPV vaccine and address hesitant parents' concerns
- Developed by Academic Pediatric Association, American Academy of Pediatrics, and Kognito
- Free
- Available for mobile devices:
  - From the Google Play Store
    https://play.google.com/store/apps/details?id=com.kognito.hpv_immunization
  - From the Apple iTunes Store
    https://itunes.apple.com/us/app/hpv-vaccine-same-way-same-day/id1356847181?mt=8



Clinician & Support Staff Guides

Training Resources

Training Powerpoints

Infographics & One Pagers

Social Media Graphics

National HPV Vaccination Roundtable Guides, Trainings, Graphics

https://hpvroundtable.org/action-guides/

CDC: Tips to booster HPV Vaccination Rates

Bundle your recommendation

Bundle your recommendation for all adolescent vaccines, including HPV vaccine, in the same way, on the same day. You can start the vaccine discussion with, "Now that your child is 11, they need three vaccines to help protect against meningitis, HPV cancers, and whooping cough. We'll give these shots during today's visit. Do you have any questions about these vaccines?"

Ensure a consistent message

Your office staff should receive training on how to successfully communicate with parents and patients about HPV vaccination. Starting with the front office, make sure that everyone is on the same page when it comes to proper vaccination practices, recommendations, and how to answer parents' questions.

Use every opportunity to vaccinate

Establish a policy to check patients' immunization status at every visit and always recommend and administer vaccines your patients need. Call to remind families about getting vaccines if they fall behind or need follow-up doses to complete the series. Develop a process where all clinicians in your practice compare HPV vaccination rates to rates of meningococcal and Tdap vaccination.

Provide personal examples

Providing personal examples of how you support vaccinations for your family members shows you believe they are important. Share how you recommended or administered HPV vaccine for your own children, grandchildren, and other family members. Sharing your personal experience may make parents more comfortable in their decision to vaccinate their child.

Effectively answer questions

Learn how to answer some of parents' most common questions about HPV vaccination. Be prepared to answer parents' questions succinctly, accurately, and empathetically by using terms that they understand. A parent will often accept your explanations if presented with their children's best interests in mind.

https://www.cdc.gov/hpv/hcp/boosting-vacc-rates.html

Addressing Safety Concerns

Concerns about unique risks for adolescent girls

Q: "I have concerns about vaccine safety---I keep reading things online that say it isn't safe."
A: There may be common mild side effects like headache or fever. There can be pain, redness, and/or swelling where the shot was given, but no other safety issues. No deaths have been attributed to HPV vaccine doses.

Q: "Could HPV vaccine cause my child to have infertility problems later?"
A: There is no data to suggest this. But women who develop cervical cancer could require treatment that would limit their ability to have children.

Q: "I'm worried that getting this vaccine will give my child a green light to become sexually active, thinking he/she is protected from STDs."
A: Numerous studies have shown that this vaccine does not make kids more likely to be sexually active or start having sex at a younger age.*

"Science Behind HPV Vaccine Communications: Creating an Evidence-based Campaign," presentation by Jill Roark, MPH, NCIRD
https://www.cancer.org/cancer/cancer-causes/infectious-agents/hpv/hpv-vaccine-facts-and-fears.html

Vaccine Safety Monitory Data – HPV vaccine

- **With more than 135 million doses of HPV vaccines distributed in the United States, there are robust data showing that HPV vaccines are safe.**
- Like any vaccine or medicine, HPV vaccines can cause side effects. The most common side effects reported through CDC's Vaccine Adverse Event Reporting System (VAERS) are pain, redness, or swelling in the arm where the vaccine was given, dizziness, syncope (fainting), nausea, and headache.
- Except syncope, which is more common among adolescents after receiving any vaccine, there have been no confirmed adverse events occurring at higher than expected rates following HPV vaccination.
- On very rare occasions, a person may have a serious allergic reaction (anaphylaxis) to any vaccine, including HPV vaccines. In the United States, anaphylaxis following vaccination has a reported rate of **3 cases per 1 million doses administered**. People with severe allergies to any component of a vaccine should not receive that vaccine.

https://www.cdc.gov/hpv/hcp/vaccine-safety-data.html

Post-licensure safety data (9vPHV)

- VAERS (data from December 2014 through December 2017)(1)
  - Approximately 28 million doses of Gardasil 9 distributed in the United States
  - 7,244 reports of adverse events (AEs)
  - 97% of AEs classified as non-serious and 3% classified as serious*
- VSD (data from October 2015 and October 2017)(2)
  - Weekly analyses to detect associations between Gardasil 9 administration and pre-specified adverse events (anaphylaxis, allergic reaction, appendicitis, Guillain-Barré syndrome, chronic inflammatory demyelinating polyneuropathy, injection site reaction, pancreatitis, seizure, stroke, syncope, and venous thromboembolism) among males and females age 9–26 years from seven VSD sites
  - >838,991 doses of Gardasil 9
  - **No statistically significant risk was detected for any of the pre-specified AEs following Gardasil 9 vaccination.**

https://www.cdc.gov/hpv/hcp/vaccine-safety-data.html[33]

If a Parent Doesn't Say Yes Right Away……..

ASK:

- Give parents a chance to ask questions and voice concerns
- Clarify and restate their concerns to make sure you understand

ACKNOWLEDGE:

- Emphasize it is the parent's decision
- Acknowledge risks and conflicting information sources
- Applaud them for wanting what is best for their child
- Be clear that you are concerned for the health of their child---not just public health safety

ADVISE:

- Allow time to discuss the pros and cons of the vaccine
- Be willing to discuss parents' ideas
- Offer written resources for parents

A MESSAGE FOR EVERYONE

- Identify HPV Vaccination Champions from every sector
- Engage employers, funders, foundations, and other stakeholders
- Engage in state-based and regional collaboration

Summary

- HPV is a very common virus---over 200 types
- HPV can persist for decades in persons
- HPV represents a broad threat for cancer in ALL mucosal tissues.
- HPV is a key contributor to oral cancer as well as cervical cancer.
- Over 270 million doses have been distributed worldwide and data continues to show the vaccine safe and effective.

How HPV Causes Cancer & Why It Still Matters : AHEC webinar---viewed 2/15/18 www.cdc.gov/hpv

THE STRONGEST PREDICTOR OF HPV VACCINE RECEIPT IS….

PROVIDER RECOMMENDATION!

*https://www.Medscape.com/viewarticle/882522_print

Do You Know…….

Q. 1 ---What is the approximate percentage of HPV cancers that could be prevented by HPV vaccination?
A.---90%

Q. 2 ---Give 3 examples of missed opportunities to vaccinate.
A.---Physician or patient unaware of the need
Visits for mild illness, injury, or follow-up
Need for multiple vaccines
Invalid contraindications
Inappropriate clinic policies
Reimbursement deficiencies

Q. 3 ---What are the 3 “A’s” that can be used to guide a discussion between the provider and vaccine-reluctant parents?
A.---Ask, Acknowledge, and Advise.

HPV Case Study

A 12-year-old accompanied by her mother has an appointment scheduled because of complaints of a sore throat that has persisted for a couple of days. Review of her history reveals the need for Tdap and MCV4 as recommended by ACIP and required by the State for entry into the 7th grade. Further, it is found that the recommended HPV vaccine has not been given.

A quick assessment is made. All vital signs are normal except a slight oral temperature of 100°F. An in office strep test is negative.

Can the required/recommended immunizations be given during this visit?

How would you communicate the need for these immunizations?

HPV Case Study (cont'd)

The mother agrees to the required vaccines, but is hesitant about the HPV vaccination. She feels her daughter is too young to get a vaccine associated with sexual contact.

What would you say to facilitate the 12-year-old getting this vaccine?

The mother agrees to allow her daughter to receive all three vaccines.

When should the second HPV vaccination be given and how will you facilitate receipt of that vaccination?

Resources for Factual & Responsible Vaccine Information

Allied Vaccine Group
MEMBER

ACP-ASIM online
American College of Physicians
American Society of Internal Medicine

American Academy of Family Physicians

vaccine safety net

www.vaccinesafetynet.org

National Foundation for Infectious Diseases

WHO OMS

NNii

immunization action coalition
IAC
immunize.org

Georgia public health

Gavi
The Vaccine Alliance

CDC
SAFER • HEALTHIER • PEOPLE™

Online Resources

Current Childhood and Adult Immunization Schedules – www.cdc.gov/vaccines/schedules/index.html

Parent's Guide to Childhood Immunizations – www.cdc.gov/vaccines/parents/tools/parents-guide/index.html

Order Information for Free CDC Immunization Materials for Providers and Patients – wwwn.cdc.gov/pubs/CDCInfoOnDemand.aspx

Vaccine Labels to Organize a Storage Unit – www.cdc.gov/vaccines/hcp/admin/storage/guide/vaccine-storage-labels.pdf

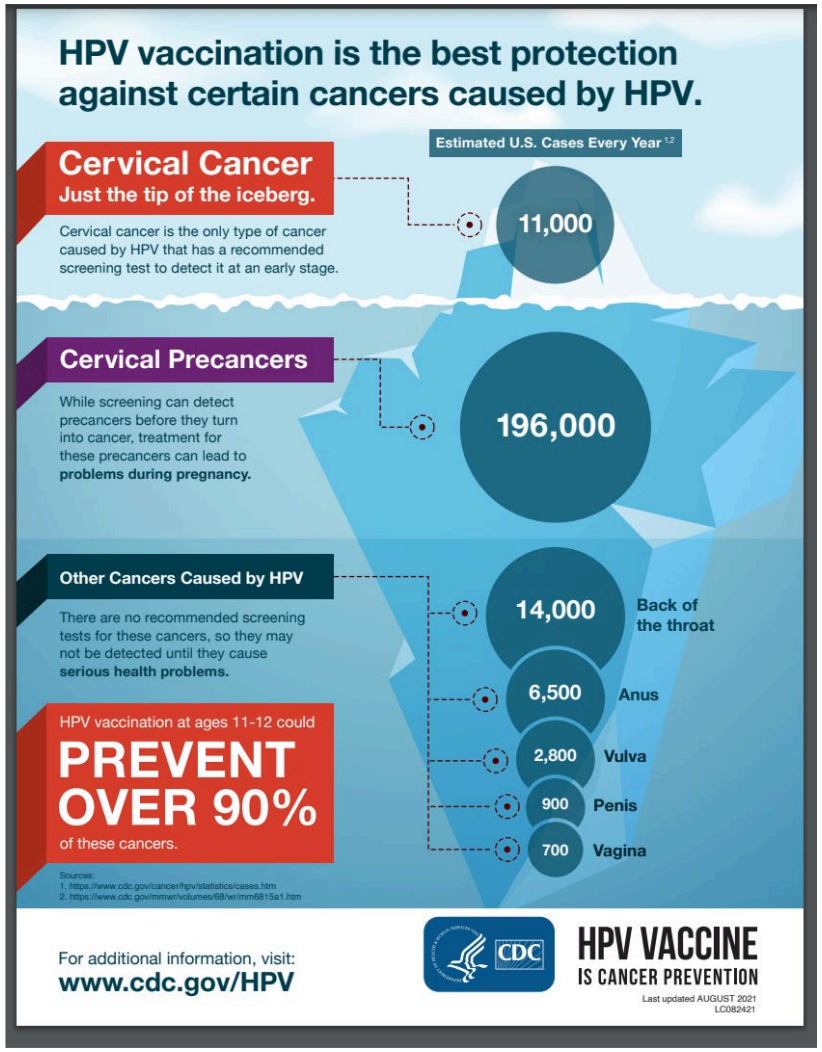
Vaccine Information Statements (VISs) –
www.cdc.gov/vaccines/hcp/vis/current-vis.html

Refusal to Vaccinate Form –
https://www.aap.org/en-us/documents/immunization_refusaltovaccinate.pdf

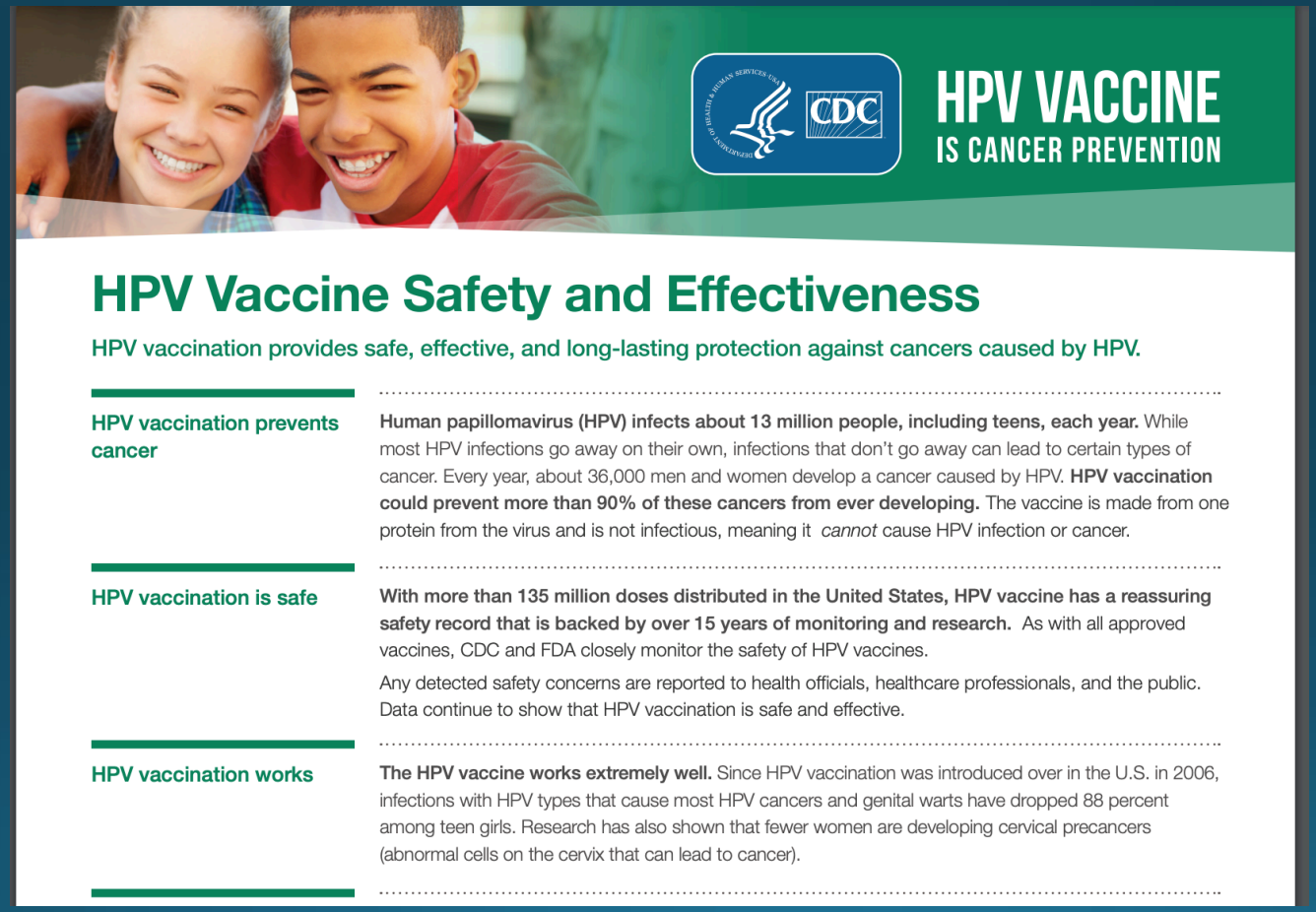
Standing Orders (Explanation and Templates) –
www.immunize.org/standing-orders/

Ask the Experts – www.immunize.org/askexperts/

General Best Practice Guidelines for Immunization –
https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html


HPV vaccination is the best protection against certain cancers caused by HPV.
Estimated U.S. Cases Every Year 1,2
Cervical Cancer
Just the tip of the iceberg.
Cervical cancer is the only type of cancer caused by HPV that has a recommended screening test to detect it at an early stage.
11,000
Cervical Precancers
While screening can detect precancers before they turn into cancer, treatment for these precancers can lead to problems during pregnancy.
196,000
Other Cancers Caused by HPV
There are no recommended screening tests for these cancers, so they may not be detected until they cause serious health problems.
14,000 Back of the throat
6,500 Anus
2,800 Vulva
900 Penis
700 Vagina
HPV vaccination at ages 11-12 could
PREVENT OVER 90%
of these cancers.
Sources:
1. https://www.cdc.gov/cancer/hpv/statistics/cases.htm
2. https://www.cdc.gov/mmwr/volumes/68/wr/mm6815a1.htm
For additional information, visit:
www.cdc.gov/HPV
CDC
HPV VACCINE
IS CANCER PREVENTION
Last updated AUGUST 2021
LC082421

Parent/Patient Fact Sheet



HPV VACCINE
IS CANCER PREVENTION

HPV Vaccine Safety and Effectiveness

HPV vaccination provides safe, effective, and long-lasting protection against cancers caused by HPV.

HPV vaccination prevents cancer

Human papillomavirus (HPV) infects about 13 million people, including teens, each year. While most HPV infections go away on their own, infections that don't go away can lead to certain types of cancer. Every year, about 36,000 men and women develop a cancer caused by HPV. **HPV vaccination could prevent more than 90% of these cancers from ever developing.** The vaccine is made from one protein from the virus and is not infectious, meaning it *cannot* cause HPV infection or cancer.

HPV vaccination is safe

With more than 135 million doses distributed in the United States, HPV vaccine has a reassuring safety record that is backed by over 15 years of monitoring and research. As with all approved vaccines, CDC and FDA closely monitor the safety of HPV vaccines.

Any detected safety concerns are reported to health officials, healthcare professionals, and the public. Data continue to show that HPV vaccination is safe and effective.

HPV vaccination works

The HPV vaccine works extremely well. Since HPV vaccination was introduced over in the U.S. in 2006, infections with HPV types that cause most HPV cancers and genital warts have dropped 88 percent among teen girls. Research has also shown that fewer women are developing cervical precancers (abnormal cells on the cervix that can lead to cancer).

https://www.cdc.gov/vaccines/partners/downloads/teens/vaccine-safety.pdf

Vaccine Administration Best practices – Route, Dose, Site, Needle Size

Administering Vaccines: Dose, Route, Site, and Needle Size

Vaccine	Dose	Route
COVID-19	Pfizer-BioNTech •age 5 to <12 yrs: 0.2 mL pediatric formulation ("orange cap") •age ≥12 yrs: 0.3 mL adult/adolescent formulation for primary and booster doses Moderna; ≥18 yrs: 0.5 mL primary series*; 0.25 mL booster Janssen: ≥18 yrs: 0.5 mL for primary & booster doses	IM
Diphtheria, Tetanus, Pertussis (DTaP, DT, Tdap, Td)	0.5 mL	IM
***Haemophilus influenzae* type b** (Hib)	0.5 mL	IM
Hepatitis A (HepA)	≤18 yrs: 0.5 mL ≥19 yrs: 1.0 mL	IM
Hepatitis B (HepB) *Persons 11–15 yrs may be given Recombivax HB (Merck) 1.0 mL adult formulation on a 2-dose schedule.*	Engerix-B; Recombivax HB ≤19 yrs: 0.5 mL ≥20 yrs: 1.0 mL Heplisav-B ≥18 yrs: 0.5 mL	IM
Human papillomavirus (HPV)	0.5 mL	IM
Influenza, live attenuated (LAIV)	0.2 mL (0.1 mL in each nostril)	Intranasal spray
Influenza, inactivated (IIV); for ages 6–35 months	Afluria: 0.25 mL Fluzone: 0.25 or 0.5 mL Fluarix, Flucelvax, FluLaval: 0.5 mL	IM
Influenza, inactivated (IIV), ≥3 yrs; **recombinant** (RIV), ≥18 yrs; **high-dose** (HD-IIV) ≥65 yrs	0.5 mL FluZone HD: 0.7 mL	IM
Measles, Mumps, Rubella (MMR)	0.5 mL	Subcut
Meningococcal serogroups A, C, W, Y (MenACWY)	0.5 mL	IM
Meningococcal serogroup B (MenB)	0.5 mL	IM
Pneumococcal conjugate (PCV)	0.5 mL	IM
Pneumococcal polysaccharide (PPSV)	0.5 mL	IM or Subcut
Polio, inactivated (IPV)	0.5 mL	IM or Subcut
Rotavirus (RV)	Rotarix: 1.0 mL Rotateq: 2.0 mL	Oral
Varicella (VAR)	0.5 mL	Subcut
Zoster (Zos)	Shingrix: 0.5† mL	IM
Combination Vaccines		
DTaP-HepB-IPV (Pediarix) DTaP-IPV/Hib (Pentacel) DTaP-IPV (Kinrix; Quadracel) DTaP-IPV-Hib-HepB (Vaxelis)	0.5 mL	IM
MMRV (ProQuad)	≤12 yrs: 0.5 mL	Subcut
HepA-HepB (Twinrix)	≥18 yrs: 1.0 mL	IM

* If immunocompromised, Moderna 0.5 mL for 3-dose primary series, then 0.25 mL for booster dose.

† The Shingrix vial might contain more than 0.5 mL. Do not administer more than 0.5 mL.

Intranasal (NAS) administration of Flumist (LAIV) vaccine

Injection Site and Needle Size

Subcutaneous (Subcut) injection
Use a 23–25 gauge needle. Choose the injection site that is appropriate to the person's age and body mass.

AGE	NEEDLE LENGTH	INJECTION SITE
Infants (1–12 mos)	5/8"	Fatty tissue over anterolateral thigh muscle
Children 12 mos or older, adolescents, and adults	5/8"	Fatty tissue over anterolateral thigh muscle or fatty tissue over triceps

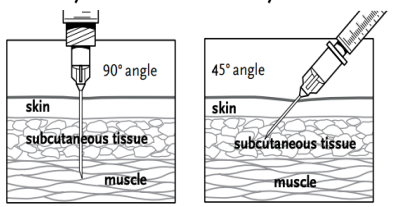
Intramuscular (IM) injection
Use a 22–25 gauge needle. Choose the injection site and needle length that is appropriate to the person's age and body mass.

AGE	NEEDLE LENGTH	INJECTION SITE
Newborns (1st 28 days)	5/8"[1]	Anterolateral thigh muscle
Infants (1–12 mos)	1"	Anterolateral thigh muscle
Toddlers (1–2 years)	1–1¼"	Anterolateral thigh muscle[2]
	5/8–1"[1]	Deltoid muscle of arm
Children (3–10 years)	5/8–1"[1]	Deltoid muscle of arm[2]
	1–1¼"	Anterolateral thigh muscle
Adolescents and teens (11–18 years)	5/8–1"[1]	Deltoid muscle of arm[2]
	1–1½"	Anterolateral thigh muscle
Adults 19 years or older		
Female or male <130 lbs	5/8–1"[1]	Deltoid muscle of arm
Female or male 130–152 lbs	1"	Deltoid muscle of arm
Female 153–200 lbs Male 153–260 lbs	1–1½"	Deltoid muscle of arm
Female 200+ lbs Male 260+ lbs	1½"	Deltoid muscle of arm
Female or male, any weight	1½"	Anterolateral thigh muscle

[1] A 5/8" needle may be used in newborns, preterm infants, and patients weighing less than 130 lbs (<60 kg) for IM injection in the deltoid muscle only if the skin stretched tight, the subcutaneous tissue is not bunched, and the injection is made at a 90-degree angle to the skin.

[2] Preferred site

NOTE: Always refer to the package insert included with each biologic for complete vaccine administration information. CDC's Advisory Committee on Immunization Practices (ACIP) recommendations for the particular vaccine should be reviewed as well. Access the ACIP recommendations at www.immunize.org/acip.



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www.immunize.org/catg.d/p3085.pdf . Item #P3085 (11/21)

https://www.immunize.org/catg.d/p3085.pdf

How to administer IM and SC vaccine injections

How to Administer Intramuscular and Subcutaneous Vaccine Injections

Administration by the Intramuscular (IM) Route

Administer these vaccines via IM route

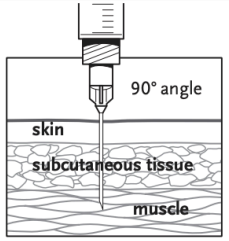
- Diphtheria-tetanus-pertussis (DTaP, Tdap)
- Diphtheria-tetanus (DT, Td)
- *Haemophilus influenzae* type b (Hib)
- Hepatitis A (HepA)
- Hepatitis B (HepB)
- Human papillomavirus (HPV)
- Inactivated influenza (IIV)
- Meningococcal serogroups A,C,W, Y (MenACWY)
- Meningococcal serogroup B (MenB)
- Pneumococcal conjugate (PCV13)
- Zoster, recombinant (RZV)

Administer inactivated polio (IPV) and pneumococcal polysaccharide (PPSV23) vaccines either IM or subcutaneously (Subcut).

PATIENT AGE	INJECTION SITE	NEEDLE SIZE
Newborn (0–28 days)	Anterolateral thigh muscle	5/8"* (22–25 gauge)
Infant (1–12 mos)	Anterolateral thigh muscle	1" (22–25 gauge)
Toddler (1–2 years)	Anterolateral thigh muscle	1–1¼" (22–25 gauge)
	Alternate site: Deltoid muscle of arm if muscle mass is adequate	5/8*–1" (22–25 gauge)
Children (3–10 years)	Deltoid muscle (upper arm)	5/8*–1" (22–25 gauge)
	Alternate site: Anterolateral thigh muscle	1–1¼" (22–25 gauge)
Children and adults (11 years and older)	Deltoid muscle (upper arm)	5/8†–1" (22–25 gauge)
	Alternate site: Anterolateral thigh muscle	1–1½" (22–25 gauge)

* A 5/8" needle usually is adequate for neonates (first 28 days of life), preterm infants, and children ages 1 through 18 years if the skin is stretched flat between the thumb and forefinger and the needle is inserted at a 90° angle to the skin.

† A 5/8" needle may be used in patients weighing less than 130 lbs (<60 kg) for IM injection in the deltoid muscle only if the skin is stretched flat between the thumb and forefinger and the needle is inserted at a 90° angle to the skin; a 1" needle is sufficient in patients weighing 130–152 lbs (60–70 kg); a 1–1½" needle is recommended in women weighing 153–200 lbs (70–90 kg) and men weighing 153–260 lbs (70–118 kg); a 1½" needle is recommended in women weighing more than 200 lbs (91 kg) or men weighing more than 260 lbs (118 kg).



Needle insertion

Use a needle long enough to reach deep into the muscle.

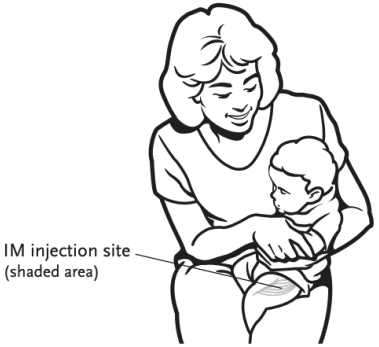
Insert needle at a 90° angle to the skin with a quick thrust.

(Before administering an injection of vaccine, it is not necessary to aspirate, i.e., to pull back on the syringe plunger after needle insertion.¶)

Multiple injections given in the same extremity should be separated by a minimum of 1", if possible.

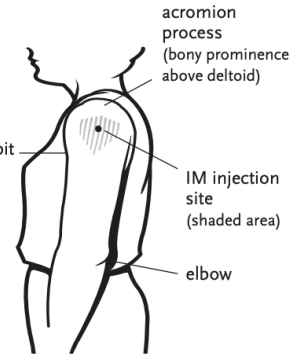
¶ CDC. "General Best Practices Guidelines for Immunization: Best Practices Guidance of the ACIP" at https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/downloads/general-recs.pdf

Intramuscular (IM) injection site for infants and toddlers



Insert needle at a 90° angle into the anterolateral thigh muscle.

Intramuscular (IM) injection site for children and adults



Give in the central and thickest portion of the deltoid muscle – above the level of the armpit and approximately 2–3 fingerbreadths (~2") below the acromion process. See the diagram. To avoid causing an injury, do not inject too high (near the acromion process) or too low.

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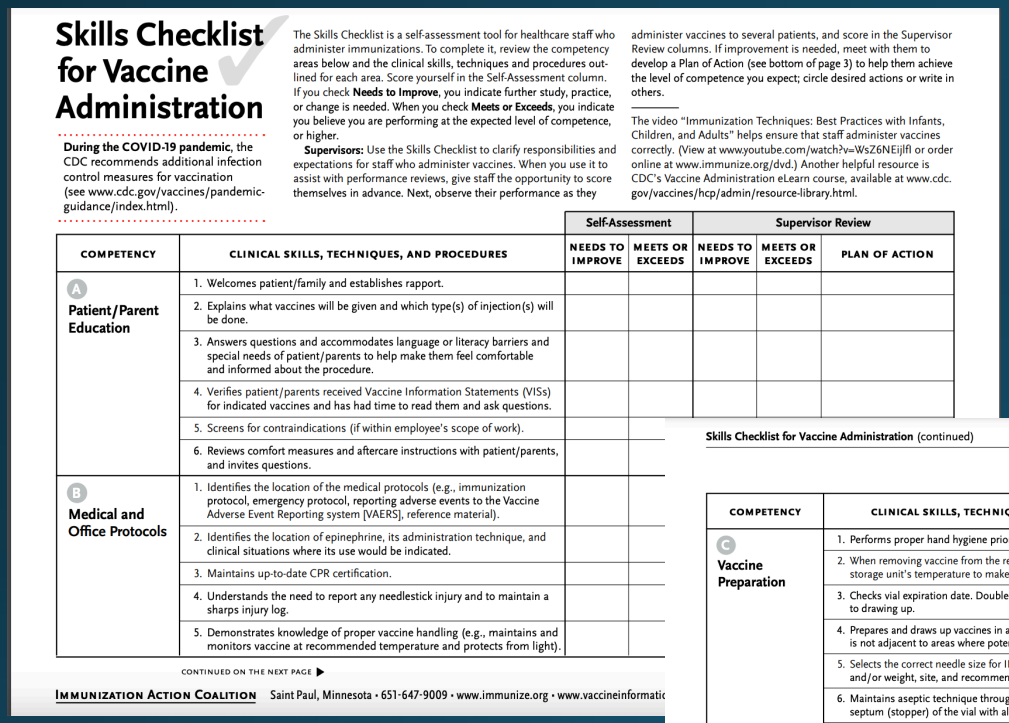
https://www.immunize.org/catg.d/p2020.pdf

Training Tools: Skills Checklist for Vaccine Administration



Skills Checklist for Vaccine Administration

During the COVID-19 pandemic, the CDC recommends additional infection control measures for vaccination (see www.cdc.gov/vaccines/pandemic-guidance/index.html).

The Skills Checklist is a self-assessment tool for healthcare staff who administer immunizations. To complete it, review the competency areas below and the clinical skills, techniques and procedures outlined for each area. Score yourself in the Self-Assessment column. If you check **Needs to Improve**, you indicate further study, practice, or change is needed. When you check **Meets or Exceeds**, you indicate you believe you are performing at the expected level of competence, or higher.

Supervisors: Use the Skills Checklist to clarify responsibilities and expectations for staff who administer vaccines. When you use it to assist with performance reviews, give staff the opportunity to score themselves in advance. Next, observe their performance as they administer vaccines to several patients, and score in the Supervisor Review columns. If improvement is needed, meet with them to develop a Plan of Action (see bottom of page 3) to help them achieve the level of competence you expect; circle desired actions or write in others.

The video "Immunization Techniques: Best Practices with Infants, Children, and Adults" helps ensure that staff administer vaccines correctly. (View at www.youtube.com/watch?v=WsZ6NEijlfI or order online at www.immunize.org/dvd.) Another helpful resource is CDC's Vaccine Administration eLearn course, available at www.cdc.gov/vaccines/hcp/admin/resource-library.html.

COMPETENCY	CLINICAL SKILLS, TECHNIQUES, AND PROCEDURES	Self-Assessment: NEEDS TO IMPROVE	Self-Assessment: MEETS OR EXCEEDS	Supervisor Review: NEEDS TO IMPROVE	Supervisor Review: MEETS OR EXCEEDS	Supervisor Review: PLAN OF ACTION
A Patient/Parent Education	1. Welcomes patient/family and establishes rapport.					
	2. Explains what vaccines will be given and which type(s) of injection(s) will be done.					
	3. Answers questions and accommodates language or literacy barriers and special needs of patient/parents to help make them feel comfortable and informed about the procedure.					
	4. Verifies patient/parents received Vaccine Information Statements (VISs) for indicated vaccines and has had time to read them and ask questions.					
	5. Screens for contraindications (if within employee's scope of work).					
	6. Reviews comfort measures and aftercare instructions with patient/parents, and invites questions.					
B Medical and Office Protocols	1. Identifies the location of the medical protocols (e.g., immunization protocol, emergency protocol, reporting adverse events to the Vaccine Adverse Event Reporting system [VAERS], reference material).					
	2. Identifies the location of epinephrine, its administration technique, and clinical situations where its use would be indicated.					
	3. Maintains up-to-date CPR certification.					
	4. Understands the need to report any needlestick injury and to maintain a sharps injury log.					
	5. Demonstrates knowledge of proper vaccine handling (e.g., maintains and monitors vaccine at recommended temperature and protects from light).					

CONTINUED ON THE NEXT PAGE ▶

COMPETENCY	CLINICAL SKILLS, TECHNIQUES, AND PROCEDURES	Self-Assessment: NEEDS TO IMPROVE	Self-Assessment: MEETS OR EXCEEDS	NEEDS T IMPROV
C Vaccine Preparation	1. Performs proper hand hygiene prior to preparing vaccine.			
	2. When removing vaccine from the refrigerator or freezer, looks at the storage unit's temperature to make sure it is in proper range.			
	3. Checks vial expiration date. Double-checks vial label and contents prior to drawing up.			
	4. Prepares and draws up vaccines in a designated clean medication area that is not adjacent to areas where potentially contaminated items are placed.			
	5. Selects the correct needle size for IM and Subcut based on patient age and/or weight, site, and recommended injection technique.			
	6. Maintains aseptic technique throughout, including cleaning the rubber septum (stopper) of the vial with alcohol prior to piercing it.			
	7. Prepares vaccine according to manufacturer instructions. Inverts vial and draws up correct dose of vaccine. Rechecks vial label.			
	8. Prepares a new sterile syringe and sterile needle for each injection. Checks the expiration date on the equipment (syringes and needles) if present.			
	9. Labels each filled syringe or uses labeled tray to keep them identified.			
D Administering Immunizations	1. Verifies identity of patient. Rechecks the provider's order or instructions against the vial and the prepared syringes.			
	2. Utilizes proper hand hygiene with every patient and, if it is office policy, puts on disposable gloves. (If using gloves, changes gloves for every patient.)			
	3. Demonstrates knowledge of the appropriate route for each vaccine.			
	4. Positions patient and/or restrains the child with parent's help.			
	5. Correctly identifies the injection site (e.g., deltoid, vastus lateralis, fatty tissue over triceps).			
	6. Locates anatomic landmarks specific for IM or Subcut injections.			
	7. Preps the site with an alcohol wipe, using a circular motion from the center to a 2" to 3" circle. Allows alcohol to dry.			

CONTINUED ON THE NEXT PAGE ▶

COMPETENCY	CLINICAL SKILLS, TECHNIQUES, AND PROCEDURES	Self-Assessment: NEEDS TO IMPROVE	Self-Assessment: MEETS OR EXCEEDS	Supervisor Review: NEEDS TO IMPROVE	Supervisor Review: MEETS OR EXCEEDS	Supervisor Review: PLAN OF ACTION
D Administering Immunizations (continued)	8. Controls the limb with the non-dominant hand; holds the needle an inch from the skin and inserts it quickly at the appropriate angle (90° for IM or 45° for Subcut).					
	9. Injects vaccine using steady pressure; withdraws needle at angle of insertion.					
	10. Applies gentle pressure to injection site for several seconds (using, e.g., gauze pad, bandaid).					
	11. Uses strategies to reduce anxiety and pain associated with injections.					
	12. Properly disposes of needle and syringe in "sharps" container.					
	13. Properly disposes of vaccine vials.					
E Records Procedures	1. Fully documents each vaccination in patient chart: date, lot number, manufacturer, site, VIS date, name/initials.					
	2. If applicable, demonstrates ability to use state/local immunization registry or computer to call up patient record, assess what is due today, and update computerized immunization history.					
	3. Asks for and updates patient's vaccination record and reminds them to bring it to each visit.					

Plan of Action

Circle desired next steps and write in the agreed deadline for completion, as well as date for the follow-up performance review.

a. Watch video on immunization techniques and review CDC's Vaccine Administration eLearn, available at www.cdc.gov/vaccines/hcp/admin/resource-library.html.
b. Review office protocols.
c. Review manuals, textbooks, wall charts, or other guides (e.g., Key Vaccination Resources for Healthcare Professionals at www.immunize.org/catg.d/p2005.pdf)
d. Review package inserts.
e. Review vaccine storage and handling guidelines or video.
f. Observe other staff with patients.
g. Practice injections.
h. Read Vaccine Information Statements.
i. Be mentored by someone who has demonstrated appropriate immunization skills.
j. Role play (with other staff) interactions with parents and patients, including age appropriate comfort measures.
k. Attend a skills training or other appropriate courses/training.
l. Attend healthcare customer satisfaction or cultural competency training.
m. Renew CPR certification.

Other _____

File the Skills Checklist in the employee's personnel folder.

PLAN OF ACTION DEADLINE _____

DATE OF NEXT PERFORMANCE REVIEW _____

EMPLOYEE SIGNATURE _____ DATE _____

SUPERVISOR SIGNATURE _____ DATE _____

https://www.immunize.org/catg.d/p7010.pdf

Thank you!!

QUESTIONS?

Questions?

Contacts for more immunization information and resources!

National Center for Immunization and Respiratory Diseases, CDC

E-mail ▶ **NIPInfo@cdc.gov**

Hotline 800.CDC.INFO

Website **http://www.cdc.gov/vaccines**

Georgia Immunization Program

E-mail **DPH-Immunization@dph.ga.gov**

Hotline 404-657-3158

Website **http://dph.georgia.gov/immunization-section**

Immunization Action Coalition

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Website **www.immunize.org**