

HPV Vaccination: Don't Waste Time, Start at 9

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September 17, 2025

Objectives

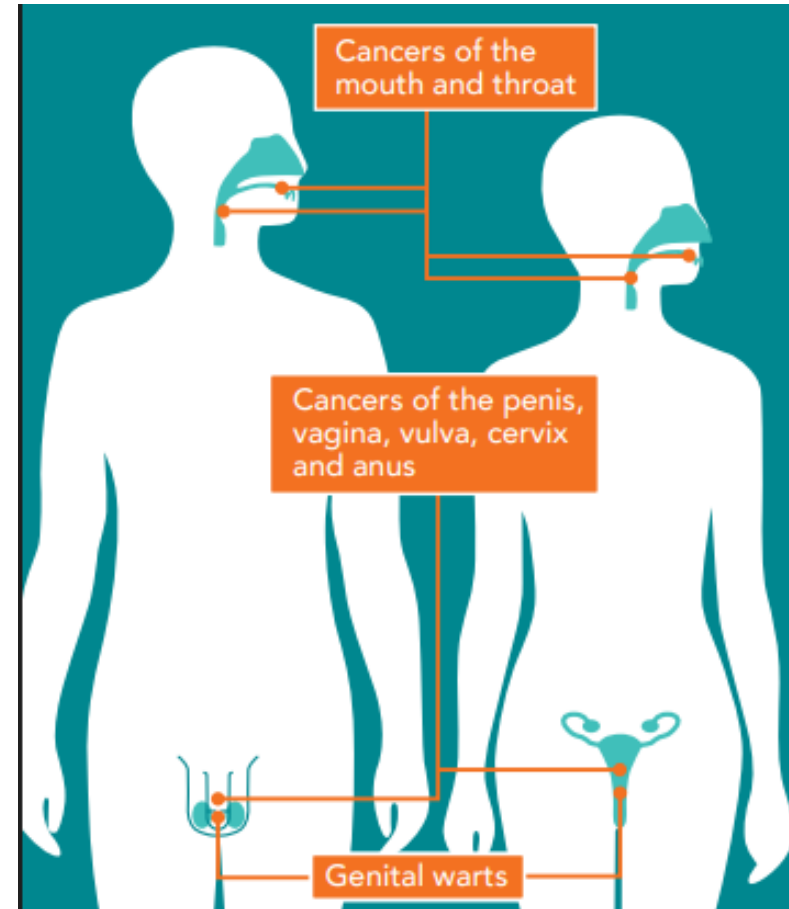
- Review Human Papillomavirus (HPV) vaccine recommendations
- Understand the evidence supporting HPV vaccination at age 9 years
- Discuss best practices to recommend and increase uptake of HPV vaccine among 9-year-old patients
- Review Citywide Immunization Registry (CIR) updates and tools supporting HPV vaccination at age 9 years
- Understand the impact and feasibility of the Start at 9 approach from a clinical perspective



Background

Human Papillomavirus (HPV)

- Virus with ~200 strains
 - 16 and 18 responsible for most HPV-related cancers
- Before HPV vaccine was available:
 - 80% to 90% of people got an HPV infection¹
 - Half of which occurred in 15 to 24 year-olds²
- Can lead to 6 types of cancers

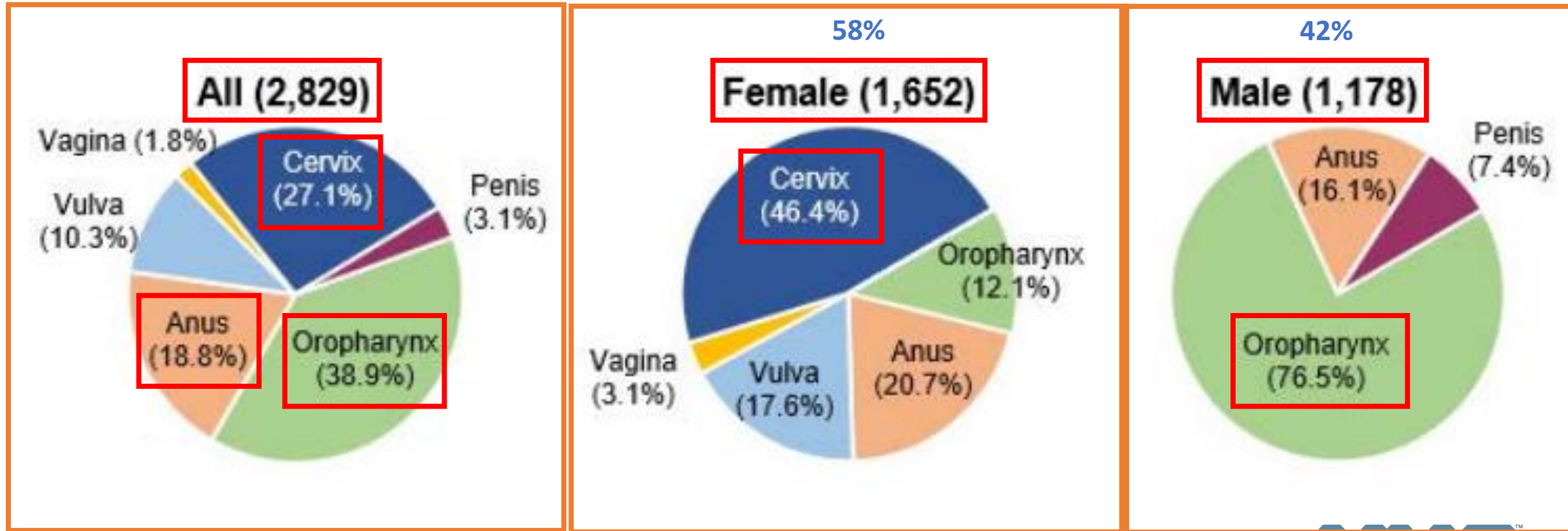


¹ Chesson, H.W., Dunne, E.F., Hariri, S., & Markowitz, L.E. (2014). The estimated lifetime probability of acquiring human papillomavirus in the United States. *Sexually Transmitted Diseases*, 41(11), 660–664.

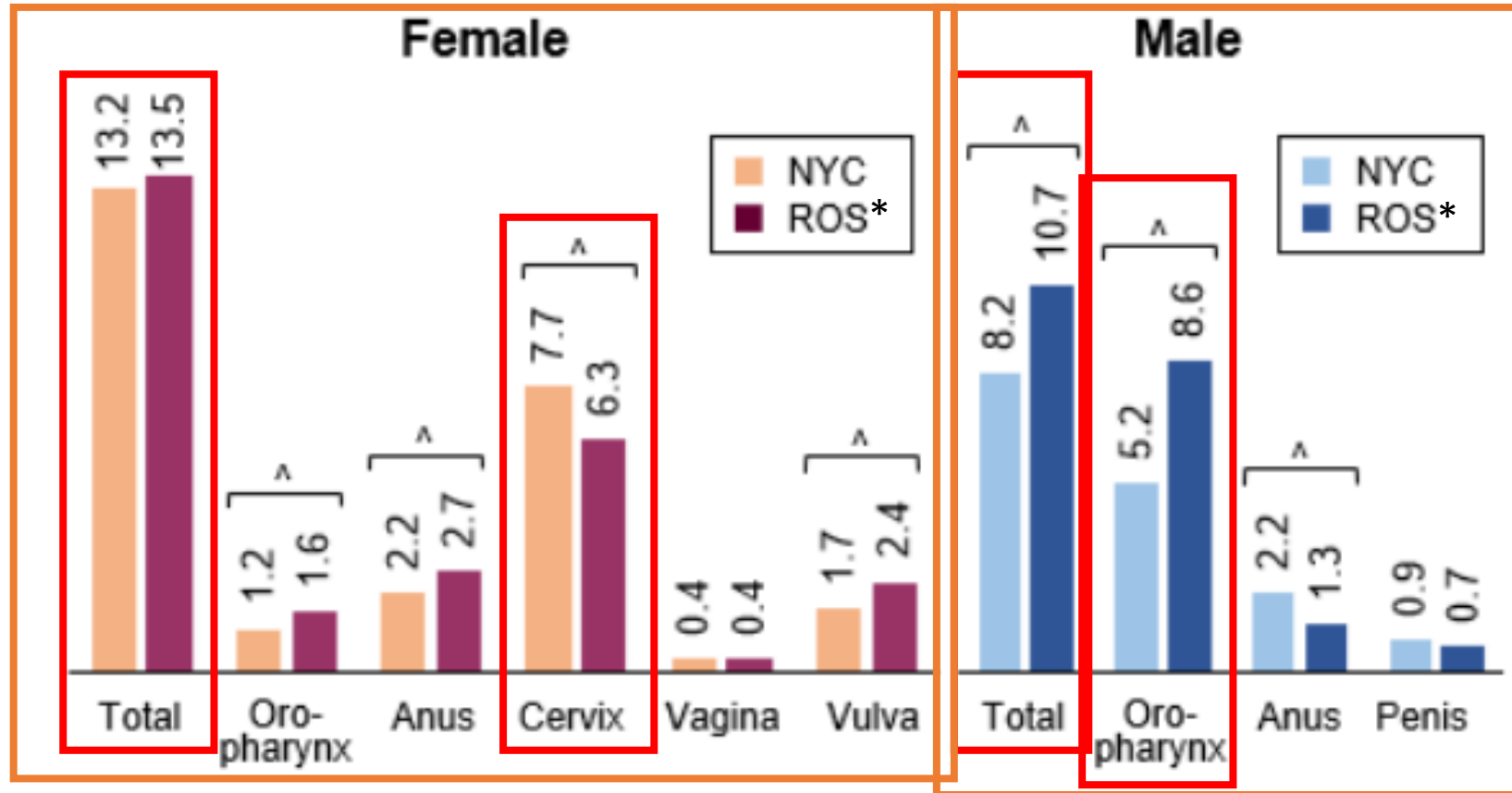
² Lewis, R.M., Laprise, J.F., Gargano, J.W., et al. (2023). Estimated prevalence and incidence of disease-associated HPV types among 15–59-year-olds in the United States. *Sexually Transmitted Diseases*, 48(4), 273–277.

HPV-Related Cancers

New York State, 2017 – 2021

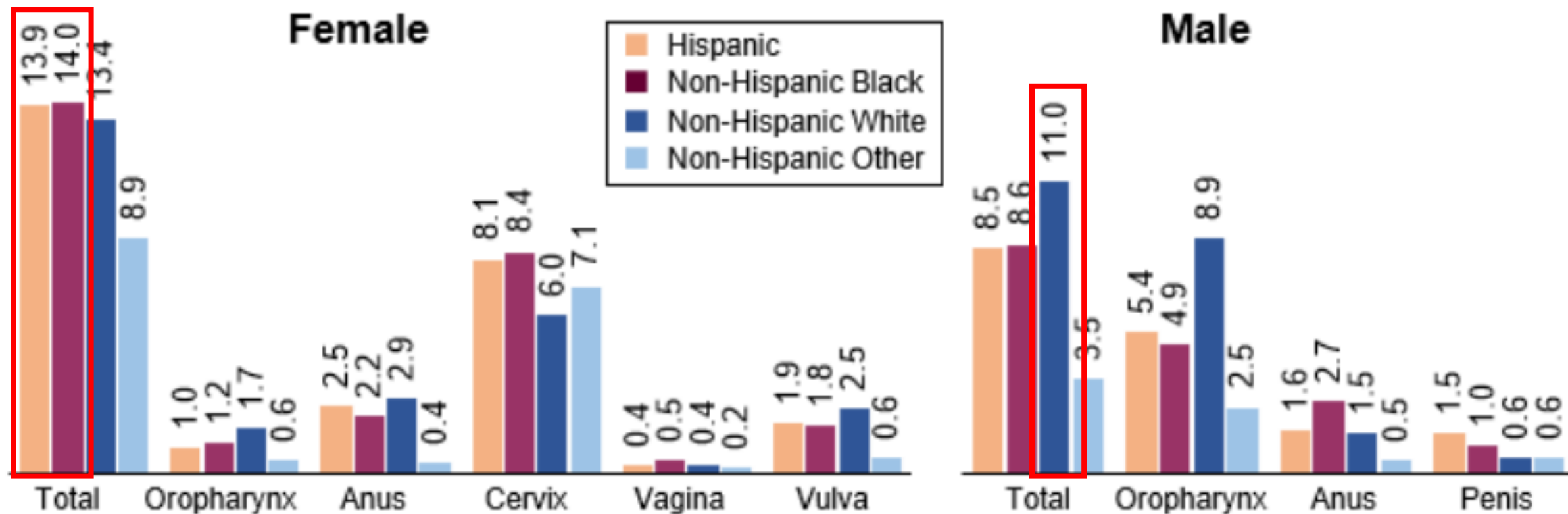


HPV-Related Cancer Incidence Rates (per 100,000) NYC & NYS, 2017 – 2021



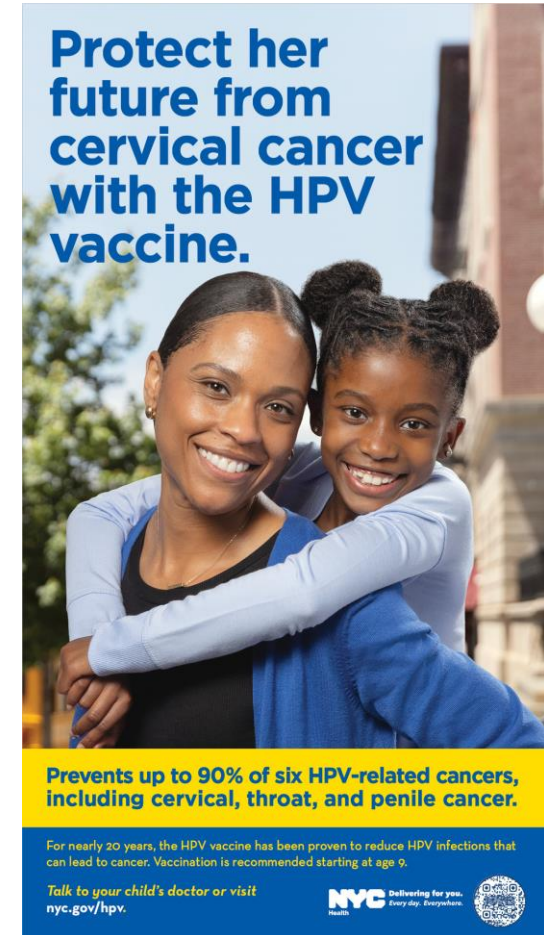
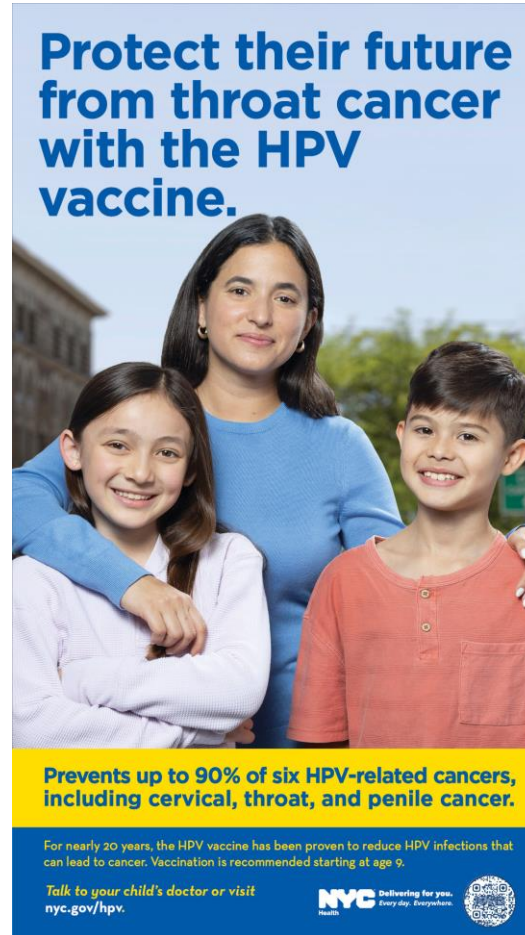
*Rest of NYS (excluding NYC)

HPV-Related Cancer Incidence (per 100,000) by Race/Ethnicity, NYS, 2017 – 2021



Human Papillomavirus (HPV) Vaccine

- Licensed in 2006
- Prevents 90% of HPV-related cancers¹
- Most effective against HPV-related disease outcomes when given prior to exposure²



¹ Saraiya, M., Unger, E.R. Thompson, T.D., et al. (2015). U.S. assessment of HPV types in cancers: Implications for current and 9-valent HPV vaccines. *Journal of the National Cancer Institute*, 107(6): djv086.

² Ellingson, M.K., Sheikha, H., Nyhan, K., et al. Human papillomavirus vaccine effectiveness by age at vaccination: A systematic review. *Human Vaccines and Immunotherapeutics*, 2023.

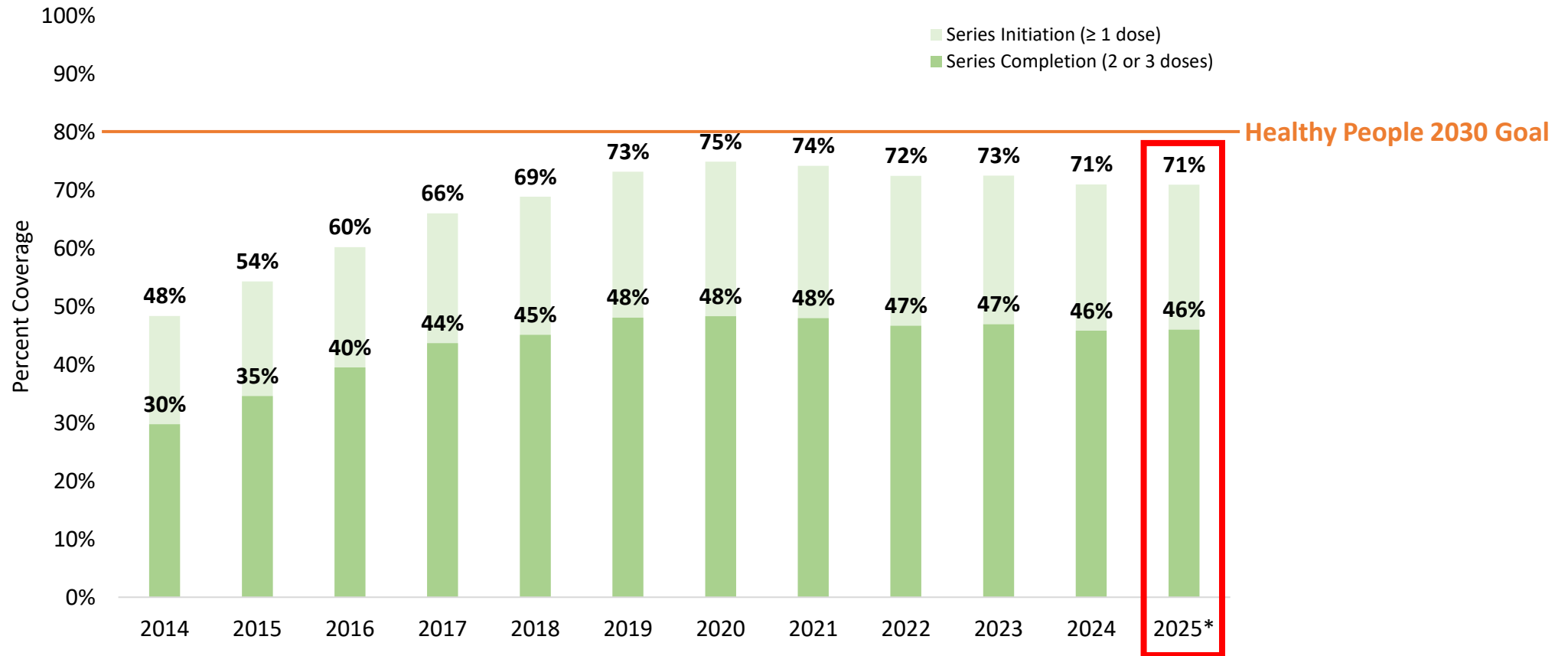
NYC and NYS Recommendations for HPV Vaccine

- The HPV vaccine is recommended for:
 - Children ages 9 through 12
 - Adolescents and young adults through age 26 who did not start or complete the series
 - Some adults ages 27 through 45 who may benefit
 - Shared clinical decision-making

Dosing Schedule

Schedule	Patient Population	Timing	Minimum Intervals
2-dose series	Healthy individuals starting before 15th birthday	0 and 6-12 months	5 months
3-dose series	- Individuals starting at age 15 or older - Immunocompromised individuals (any age)	0, 1-2 months, and 6 months	4 weeks between dose 1&2 12 weeks between dose 2&3 5 months between dose 1&3

HPV Vaccine Series Initiation and Completion Coverage Among 13-Year-Old Adolescents by 13th Birthday New York City, 2014 – 2025



*As of Q1 2025 (3/31/2025)

Coverage Year (as of 12/31)



Since 2018, the American Academy of Pediatrics (AAP) has Recommended HPV Vaccine at Ages 9 – 12 Years

Table 1

Recommended Child and Adolescent Immunization Schedule for Ages 18 Years or Younger, United States, 2025

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN®



These recommendations must be read with the Notes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the outlined purple bars . To determine minimum intervals between doses, see the catch-up schedule ([Table 2](#)).

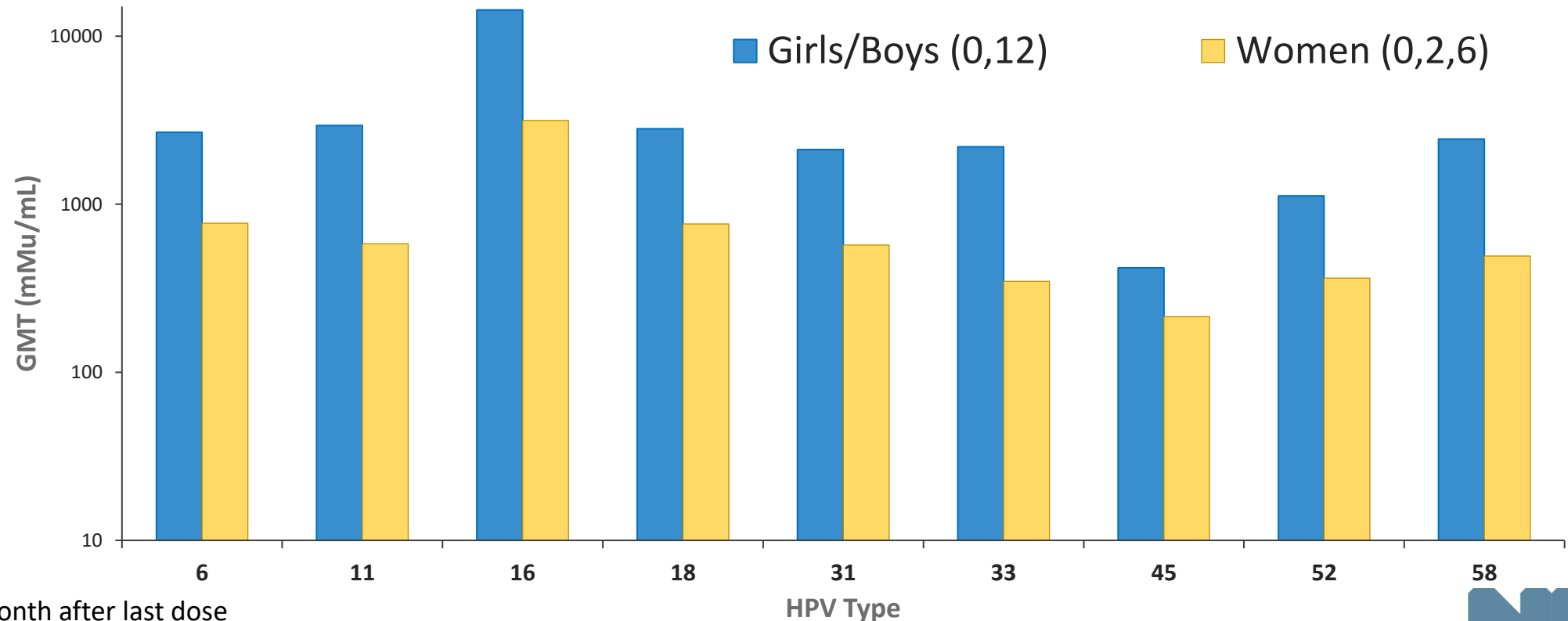
Vaccine and other immunizing agents	Birth	1 mos	2 mos	4 mos	6 mos	8 mos	9 mos	12 mos	15 mos	18 mos	19–23 mos	2–3 yrs	4–6 yrs	7–10 yrs	11–12 yrs	13–15 yrs	16 yrs	17–18 yrs
Human papillomavirus (HPV)														2-dose series			See Notes	



Reviewing the Evidence

Stronger Immune Response at Younger Ages¹

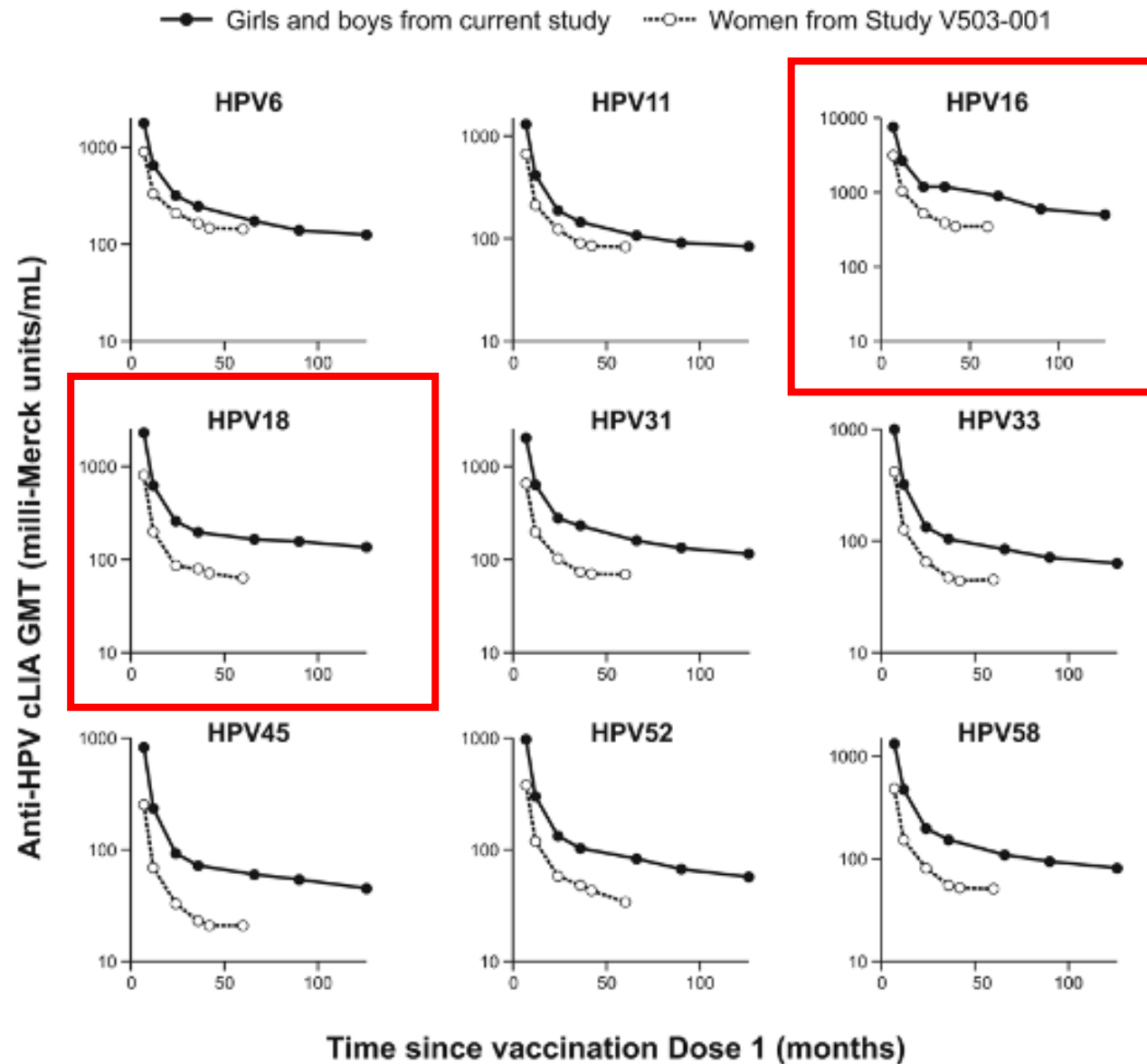
Non-Inferior Geometric Mean Antibody Titers (GMT)
2-Dose Girls/Boys 9-14 Years vs. 3-Dose Women 16-26 Years



*Data from 1 month after last dose

¹ Iversen O., Miranda M.J., Ulied A., et al. (2016). Immunogenicity of the 9-valent HPV vaccine Using 2-dose regimens in girls and boys vs. a 3-dose regimen in women. *JAMA*, 316(22): 2411–2421. doi:10.1001/jama.2016.17615

HPV Vaccine Protection is Long-Lasting¹



Fewer Missed Opportunities

- Children and adolescents are less likely to attend well visits as they age¹
 - Over one-third of children who had a well-visit at ages 9 or 10 years did not have a well-visit at 11 or 12 years²
- Missed opportunities to initiate HPV vaccination at ages 11 – 12 years are common²
 - About 25% of adolescents with an 11- or 12-year well-visit received a vaccine but not the HPV vaccine²

More Time = More Opportunities¹

- Helps mitigate disruptions in care
- More time for parents/guardians with low vaccine confidence to learn about HPV and the vaccine
- Opportunity to revisit the conversation and recommend the vaccine in subsequent visits
 - Almost half (45%) of parents who initially declined HPV vaccination for their child reported accepting it at a later visit²

¹ O'Leary, S. (2022). Why the American Academy of Pediatrics recommends initiating HPV vaccine at age 9. *Human Vaccines and Immunotherapeutics*, 18(6).

² Kornides, M.L., McRee, A.L., Gilkey, M.B. (2018). Parents who decline HPV vaccination: Who later accepts and why? *Academic Pediatrics*, 18(2S), S37-S43. doi: 10.1016/j.acap.2017.06.008

Increases On-Time Series Completion

- There is growing evidence that initiating HPV vaccination at earlier ages **increases on-time series completion** by age 13 years^{1,2}
- CIR evaluation of HPV vaccination data among 13-year-olds between 2017 – 2022 demonstrated:
 - **91%** of 9 – 10-year-old initiators completed the series by 13th birthday, compared to only 60% of 11 – 12-year-old initiators
 - 9 – 10-year-old initiators were **8.88 times** more likely to complete the HPV vaccine series by 13th birthday compared to 11–12-year-old initiators

¹Saxena K., Kathe, N., Sardana, P., et al. (2023). HPV vaccine initiation at ages 9 or 10 years of age and better series completion by age 13 among privately and publicly insured children in the U.S.. *Human Vaccines and Immunotherapeutics*, 19(1). 2161253. <https://doi.org/10.1080/21645515.2022.2161253>

²Goodman E., Felsher, M., Wang, D., et al. (2023). Early initiation of HPV vaccination and series completion in early and mid-adolescence. *Pediatrics*, 151(3). <https://doi.org/10.1542/peds.2022-058794>

Fewer Shots Per Visit

- HPV vaccine is often delayed at the 11–12-year-old visit due to prioritization of Tdap and meningococcal vaccines
 - **35%** of pediatricians and family physicians reported **not discussing HPV vaccine** during well-visits due to administration of other vaccines¹
- Parents are receptive to starting the HPV vaccine before age 11 years^{2,3}
 - Allows for vaccine spacing
 - Fewer shots per visit

¹ Allison, M. A., Hurley, L. P., Markowitz, L., et al. (2016). Primary care physicians' perspectives about HPV vaccine. *Pediatrics*, 137(2), e20152488. <https://doi.org/10.1542/peds.2015-2488>

² Biancarelli, D. L., Drainoni, M. L., & Perkins, R. B. (2020). Provider experience recommending HPV vaccination before age 11 years. *The Journal of Pediatrics*, 217, 92–97. <https://doi.org/10.1016/j.jpeds.2019.10.025>

³ Tietbohl, C.K., Gurfinkel, D., Duran, D., et al. (2025). Feasibility and acceptability of recommending HPV vaccine at ages 9–10 years. *Pediatrics*, 156(1), e2024069625. <https://doi.org/10.1542/peds.2024-069625>

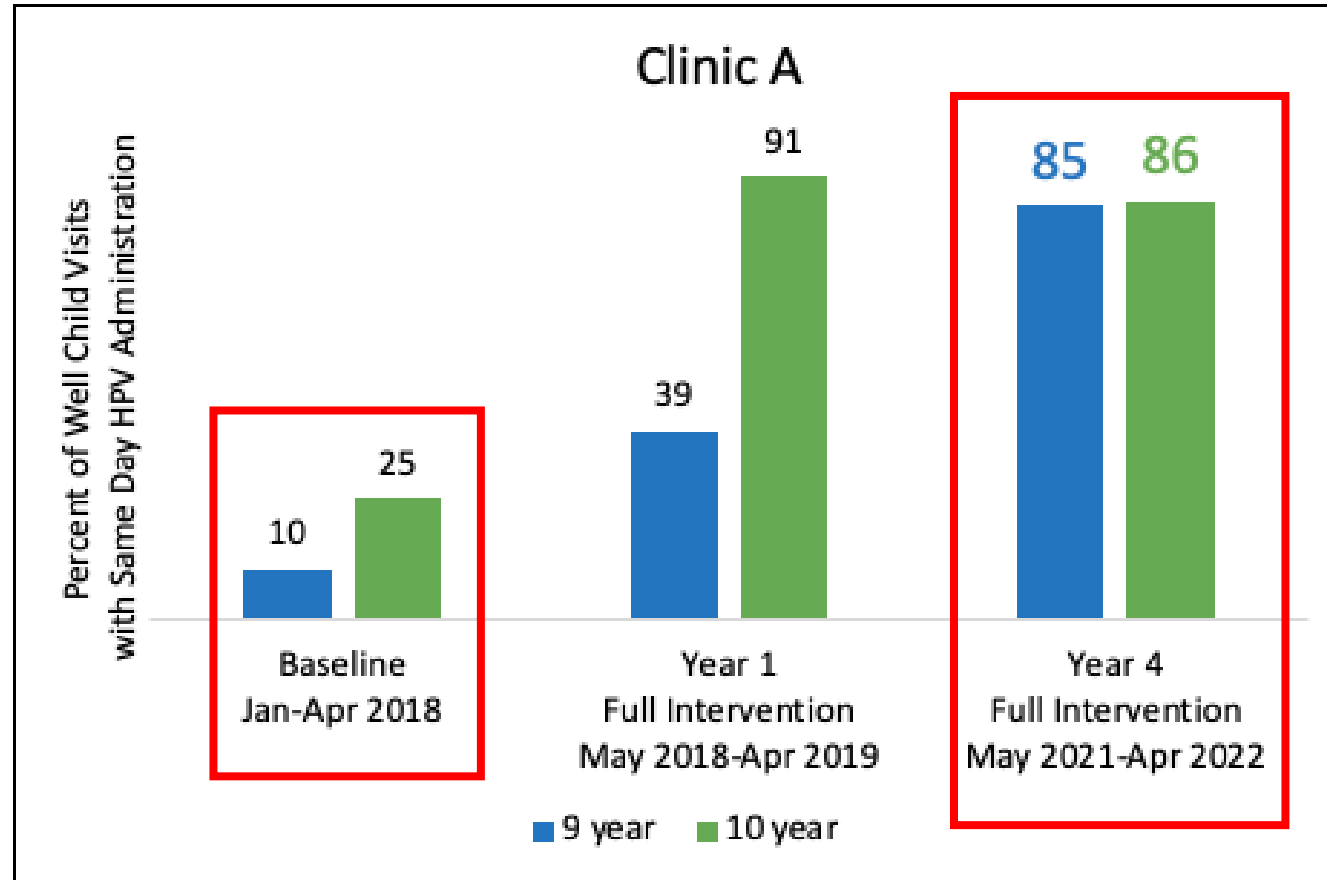
Decouples Vaccination from Sexual Activity

- Easier conversations that focus on cancer prevention well before sexual debut
 - May reduce parental hesitancy related to the perceived association between HPV vaccination and the initiation of sexual activity¹
- Shorter discussions at ages 9–10 years because sexual activity was not perceived as salient²

¹ Biancarelli, D. L., Drainoni, M. L., & Perkins, R. B. (2020). Provider experience recommending HPV vaccination before age 11 years. *The Journal of Pediatrics*, 217, 92–97. <https://doi.org/10.1016/j.jpeds.2019.10.025>

² Tietbohl, C.K., Gurfinkel, D., Duran, D., et al. (2025). Feasibility and acceptability of recommending HPV vaccine at ages 9–10 years. *Pediatrics*, 156(1), e2024069625. <https://doi.org/10.1542/peds.2024-069625>

HPV Vaccination at Age 9 Years is Accepted by Parents^{1,2,3}



¹ Biancarelli, D. L., Drainoni, M. L., & Perkins, R. B. (2020). Provider experience recommending HPV vaccination before age 11 years. *The Journal of Pediatrics*, 217, 92–97.

² Tietbohl, C.K., Gurfinkel, D., Duran, D., et al. (2025). Feasibility and acceptability of recommending HPV vaccine at ages 9–10 years. *Pediatrics*, 156(1), e2024069625.

³ Zorn S., Darville-Sanders, G., Vu, T. et al. (2023). Multi-level quality improvement strategies to optimize HPV vaccination starting at the 9-year well child visit: Success stories from two private pediatric clinics. *Human Vaccines and Immunotherapeutics*, 19(1):2163807.

Provider Recommendations Impact HPV Vaccine Uptake

- Provider recommendations for HPV vaccine have a strong impact on vaccine acceptance among parents and patients^{1,2}
- As of 2021, only 21% of primary care professionals reported routinely recommending HPV vaccination at ages 9 or 10 years³
 - However, over half (61%) reported being somewhat or more willing to start routinely recommending HPV vaccination at ages 9 to 10 years³

¹ Newman, P. A., Logie, C. H., Lacombe-Duncan, A., et al. (2018). Parents' uptake of human papillomavirus vaccines for their children: A systematic review and meta-analysis of observational studies. *BMJ Open*, 8(4), e019206.

² Perkins, R.B., Clark, J.A., Apte, G., et al (2014). Missed opportunities for HPV vaccination in adolescent girls: A qualitative study. *Pediatrics*, 134(3), e666 – e674.

³ Kong, W.Y., Huang, Q., Thompson, P., et al. (2022). Recommending human papillomavirus vaccination at age 9: A national survey of primary care professionals. *Academic Pediatrics*, 22(4), 573 – 580.



Citywide Immunization Registry (CIR) Updates

HPV Vaccine Clinical Decision Support

- CIR clinical decision support updated to use stronger language to recommend the HPV vaccine starting at ages 9-10
 - “May be given now” → “Due now”
- [Joint NYS/NYC letter](#) sent to providers on July 29, 2025

➔ Please see the [2025 Immunization Schedules](#).

- As of July 2025, the New York State Department of Health and the New York City Health Department IISs recommend HPV vaccination beginning at age 9 years as routine practice. Visit this [page](#) for more details. This update is now reflected in CIR's decision support and in the reminder/recall functions.
- The immunization forecasting of Tdap in the **adolescent** series aligns with [CDC's recommendation of a 10-year-old minimum age for the routine Tdap adolescent dose](#). Children who received a Tdap at ages 7-9 years should receive a Tdap at age 11-12 years (after age 10). This update may affect the up-to-date status of some of your patients.

➔ Reminder: Please update patient's information in the [Update Patient Info](#) screen.

Scroll down to [Lead Test History](#)

Immunization History

Event	1	2	3	4	5	Next Due
Influenza 2 Event/s	10/01/2024 Influenza NOS 8y 4m	12/15/2024 Influenza NOS 8y 6m				Due now Influenza
HepB 4 Event/s	05/30/2016 HepB NOS 0w 1d	07/30/2016 DTaP-IPV-Hib-HepB (Vaxelis) 8w 6d	09/30/2016 DTaP-IPV-Hib-HepB (Vaxelis) 17w 5d	11/30/2016 DTaP-IPV-Hib-HepB (Vaxelis) 6m 0w		Completed Vaccine Series
Rotavirus 0 Event/s						Not recommended after 8 months.
DTP 4 Event/s	07/30/2016 DTaP-IPV-Hib-HepB (Vaxelis) 8w 6d	09/30/2016 DTaP-IPV-Hib-HepB (Vaxelis) 17w 5d	11/30/2016 DTaP-IPV-Hib-HepB (Vaxelis) 6m 0w	05/29/2021 DTaP-IPV (Kinrix; Quadracel) 5y 0m		Due on 05/29/2027 Tdap
Hib 3 Event/s	07/30/2016 DTaP-IPV-Hib-HepB (Vaxelis) 8w 6d	09/30/2016 DTaP-IPV-Hib-HepB (Vaxelis) 17w 5d	11/30/2016 DTaP-IPV-Hib-HepB (Vaxelis) 6m 0w			Not generally recommended after 5 years
Pneumococcal 0 Event/s						Not Recommended
Polio 4 Event/s	07/30/2016 DTaP-IPV-Hib-HepB (Vaxelis) 8w 6d	09/30/2016 DTaP-IPV-Hib-HepB (Vaxelis) 17w 5d	11/30/2016 DTaP-IPV-Hib-HepB (Vaxelis) 6m 0w	05/29/2021 DTaP-IPV (Kinrix; Quadracel) 5y 0m		Completed Vaccine Series
MMR 2 Event/s	05/29/2017 MMR-Varicella 12m 0w	05/29/2020 MMR-Varicella 4y 0m				Completed Vaccine Series
Varicella 2 Event/s	05/29/2017 MMR-Varicella 12m 0w	05/29/2020 MMR-Varicella 4y 0m				Completed Vaccine Series
Zoster 0 Event/s						Due on 05/29/2066 Zoster (shingles, Shingrix)
HepA 2 Event/s	05/29/2017 HepA NOS 12m 0w	05/29/2020 HepA NOS 4y 0m				Completed Vaccine Series
Meningococcal (MenACWY) 0 Event/s						Recommended for high risk groups >= 2 months old, otherwise Due on 05/29/2027 MenACWY
Human Papillomavirus 0 Event/s						Due now Human Papillomavirus



First:
Fake

Middle:

Last:
Fake Test

DOB:
05/29/2016

Sex:
Female

920018106

, NY

(Age: 9y 2m)

9-year-old



Strengthening Communication

Provider Role in Vaccine Uptake

- Strong recommendation
- Presumptive language
- Addressing parent/patient concerns
- Normalizing HPV vaccine alongside other vaccines

How Should I Recommend to Patients?

- Presumptive approach – assume family will agree to vaccinate
 - *Perla is due for the HPV vaccine today. It prevents 6 different types of cancers.*
 - Pause
 - If family agrees to vaccinate, move on with the visit
 - If concerns, address specific questions using principles of motivational interviewing

Responding Using Parent-Centered Motivational Interviewing

“My daughter doesn’t need the HPV vaccine. She’s too young. And I’ve heard all of these stories on Facebook about kids getting very sick and even dying after getting the vaccine. And I’ve heard it will cause infertility too.”

- How would you respond?
 - Recognize similar goal of keeping child healthy
 - State that online stories are false
 - Discuss most common side effects
 - Emphasize benefit of giving vaccine years/decades in advance of exposure and impact of cancer prevention

Example Response

I understand you are concerned about your child's future health.

So am I!

What you have heard is false. There are many fake stories online and on social media.

Is it ok if I tell you more about how the vaccine protects your daughter?

Great! The HPV vaccine prevents HPV infection, which can cause pre-cancers and cancer of the cervix.

Procedures needed to treat these conditions could make it harder to have children or lead to preterm birth.

The vaccine prevents these cancers.



Addressing Common Concerns

“Is 9-Years-Old Too Young?”

- Kids produce a stronger immune response to HPV vaccine when they are younger¹, and we want to ensure they are protected long before exposure
- Starting and completing the series at this age also reduces the number of shots needed during future adolescent visits when other routine vaccines are given
- Experts at the American Academy of Pediatrics, the American Cancer Society, NYS and NYC Departments of Health, and other health organizations agree that kids should get the HPV vaccine starting at age 9 years

¹ Iversen O., Miranda M.J., Ulied A., et al. (2016). Immunogenicity of the 9-valent HPV vaccine using 2-dose regimens in girls and boys vs. a 3-dose regimen in women. *JAMA*, 316(22): 2411–2421. doi:10.1001/jama.2016.17615

“Does it Encourage Early Sexual Activity?”

- This is about cancer prevention
- Evidence shows no behavior change¹

¹ Brouwer, A.F., Delinger, R.L., Eisenberg, M.C., et al. (2019). HPV vaccination has not increased sexual activity or accelerated sexual debut in a college-aged cohort of men and women. *BMC Public Health*, 19(1), 821.

“Is the Vaccine Safe and Effective?”

- The HPV vaccine has been shown to prevent up to 90% of six HPV-related cancers¹
- The safety of the HPV vaccine has been thoroughly researched, and millions of doses have been administered in the United States since the vaccine first came out in 2006
- Adverse reactions are rare²
- There is **no** causal link between HPV vaccination and adverse events, such as stroke, DVTs, and autoimmune diseases²

¹ Saraiya, M., Unger, E.R. Thompson, T.D., et al. (2015). U.S. assessment of HPV types in cancers: Implications for current and 9-valent HPV vaccines. *Journal of the National Cancer Institute*, 107(6): djv086.

² Gee, J., Weinbaum, C., Sukumaran, L., et al. (2016). Quadrivalent HPV vaccine safety review and safety monitoring plans for nine-valent HPV vaccine in the United States. *Human Vaccines and Immunotherapeutics*, 12(6), 1406 – 1417.

“Why Do Boys Need the Vaccine?”

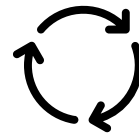
- HPV can cause infections and cancers in boys too – including throat and penile cancer

“Does the HPV Vaccine Impact Fertility?”

- The HPV vaccine does not cause fertility problems^{1,2}
- Not getting the HPV vaccine increases the risk for HPV-related cancers and precancers that can impact fertility
 - Treatment for HPV-related cancers, such as a hysterectomy, chemotherapy, or radiation, can sometimes limit an individual’s ability to have children
 - Treatment for cervical precancer could also put people at risk for problems with their cervix, which can sometimes cause preterm delivery

¹ Schmuhl, N.B., Mooney, K.E., Zhang, X., et al. (2020). No association between HPV vaccination and infertility in U.S. females 18-33 years old. *Vaccine*, 38(24), 4038-4043.

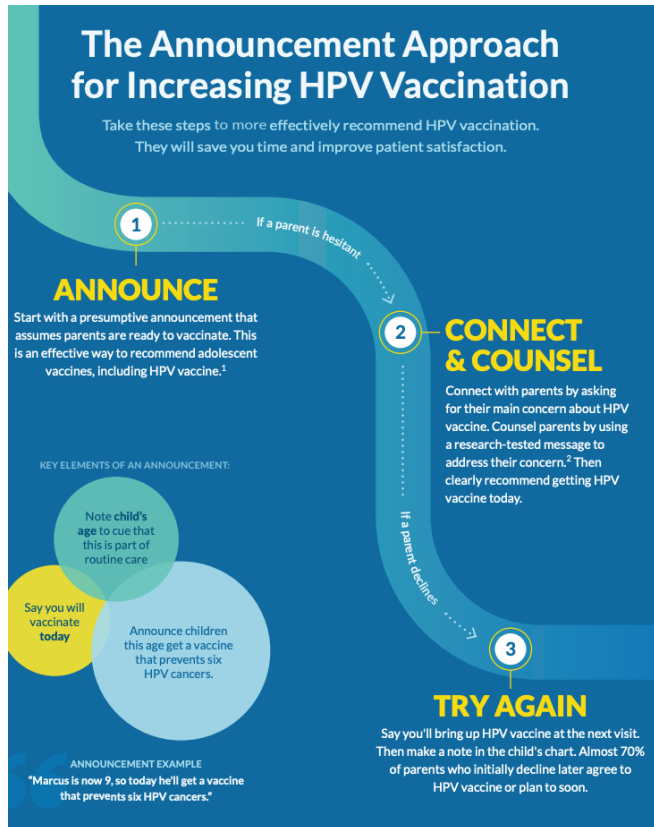
² World Health Organization. Human papilloma virus vaccines and infertility. <https://www.who.int/groups/global-advisory-committee-on-vaccine-safety/topics/human-papillomavirus-vaccines/infertility>. Last accessed 8/4/2025.



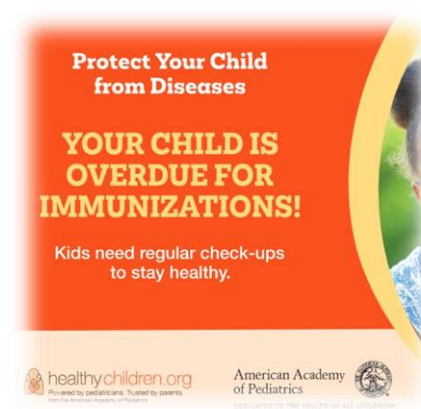
Practice-Based Approaches

Continue Best Practices for HPV Vaccination, But Start Them at Age 9 Years

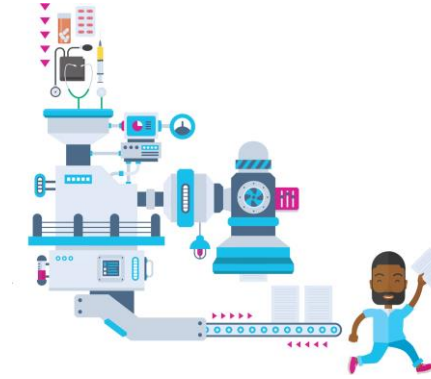
Strong Recommendation



Reminder/Recall



Standing Orders



Quality Improvement



Staff Training



CIR Tools for Providers

- The CIR offers tools for providers to help improve their HPV vaccination rates
 - Generate assessment reports of their practice's HPV vaccination coverage
 - Generate lists of patients who are overdue or soon to be due for HPV vaccine
 - Send reminder or recall text-messages to patients
 - Standard or custom messages
 - Site-specific vaccine coverage dashboards that include HPV vaccine
- NYC DOHMH technical assistance and in-depth demos
 - CIR@health.nyc.gov, please use subject: CIR Online Registry Training
 - [CIR Online Registry Reminder/Recall Guide](#)
 - Immunization Quality Improvement for Providers (IQIP) visits for providers enrolled in the Vaccines for Children program



Lessons from the Field

Columbia University Medical Center/New York Presbyterian

Start at 9 Lessons Learned

- Makes the conversation easier to focus on cancer prevention
- Easier to encourage the family to get one vaccine vs. 3 or more at the 11-year-old visit
- We are giving a handout about vaccines to families where HPV vaccine is listed at age 9 so it just makes it routine
- We can always discuss at next visit if the family refuses at 9 or 10 years



Resources

Resources

- Educational materials/information for patients
 - [NYC DOHMH: HPV Vaccine](#)
 - [Children's Hospital of Philadelphia \(CHOP\) Vaccine Education Center](#)
 - [Immunize.org - HPV](#)
- Tools to improve HPV vaccination in primary care
 - [NYC DOHMH: HPV Vaccine Action Toolkit for Providers](#)
 - [National HPV Roundtable – Start at 9 Toolkit](#)
 - [American Academy of Pediatrics: HPV](#)
 - [HPV IQ](#)
- Other resources
 - [NYC DOHMH Childhood Vaccine Data Explorer](#)
 - [NYS HPV-Related Cancers Report](#)
 - [NYS HPV Coalition](#)
 - [HPV Vaccine Information Statement \(VIS\)](#) – English & Additional Languages

Additional Research Articles

- O'Leary, S. (2022). Why the American Academy of Pediatrics recommends initiating HPV vaccine at age 9. *Human Vaccines and Immunotherapeutics*, 18(6). <https://doi.org/10.1080/21645515.2022.2146434>
- Perkins, R. B., Humiston, S., & Oliver, K. (2023). Evidence supporting the initiation of HPV vaccination starting at age 9: Collection overview. *Human Vaccines & Immunotherapeutics*, 19(3), Article 2269026. <https://doi.org/10.1080/21645515.2023.2269026>
- Ciemins, E. L., Rooney, A., Yaun, J. A., Saxena, K., Schmier, J. K., Dempsey, A. F., & Oliver, K. (2025). Initiating human papillomavirus vaccination at age 9: Strategies for success from 5 US health systems. *Academic Pediatrics*, 25(7), Article 102869. <https://doi.org/10.1016/j.acap.2025.102869>
- Brewer, N. T., Kahn, B. Z., Kritikos, K. I., Heisler-MacKinnon, J. A., Young, J. D., & Gilkey, M. B. (2023). How to make effective HPV vaccine recommendations starting at age 9. *Human Vaccines & Immunotherapeutics*, 19(2), Article 2216117. <https://doi.org/10.1080/21645515.2023.2216117>



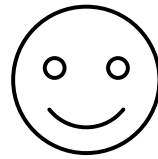
Key Takeaways

Consider Adopting “Start at 9” in Your Practice

- HPV vaccination is cancer prevention!
- You are an expert and your recommendations matter!
- Earlier recommendations can reduce missed opportunities to vaccinate and lead to better on-time completion
- HPV vaccination starting at age 9 is accepted by both clinicians and parents
- Continue best practices for HPV vaccination, but start them at age 9 years

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Questions



Thank you!

Contact Information

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