AIRA
AMERICAN IMMUNIZATION REGISTRY ASSOCIATION

IIS Data Analyst User Group

(I-DAUG)

Electronic Binder

June 2025

AIRA
AMERICAN IMMUNIZATION REGISTRY ASSOCIATION

Early Initiation as a Potential Solution to Increase HPV Vaccine Uptake

Dr. Runa Bakshi with Louisiana Department of Health and
Sarah Brown with STC Health

LINK TO RECORDING

AIRA
AMERICAN IMMUNIZATION
REGISTRY ASSOCIATION

Meeting Minutes

AIRA
AMERICAN IMMUNIZATION REGISTRY ASSOCIATION

MINUTES

AIRA IIS Data Analyst User Group
June 26, 2025
1 - 2 p.m. ET

Welcome	**Attendance**: 69; all names have been recorded electronically and are on file with AIRA.
I-DAUG Presentation	Dr. Runa Bakshi with the Louisiana Department of Health and Sarah Brown with STC Health presented "Early initiation as a potential solution to increase HPV vaccine uptake".
Wrap-Up	Log in to IDAF**,** an online forum where you can chat with others who work with immunization data, post questions, and share your experiences. You can request access to the IDAF by emailing "AIRA IDAF" to info@immregistries.org.

Next Meeting: September 18, 2025, from 1 – 2 p.m. ET

Next Topic: tbd

AIRA
AMERICAN IMMUNIZATION REGISTRY ASSOCIATION

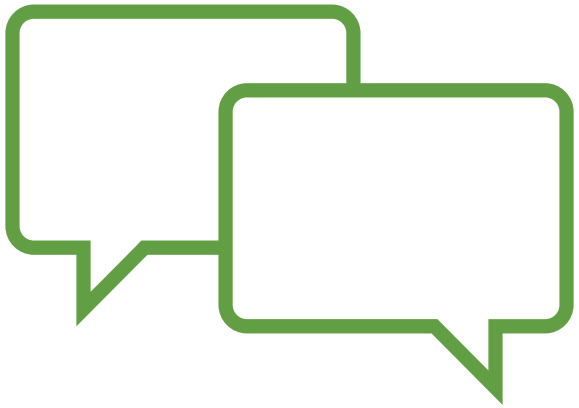
IIS Data Analyst User Group

June 26, 2025

Thank you for participating!

- Connect with other IIS data analyst about the presentation, issues, challenges, & successes!
- Today's presentation: Early initiation as a potential solution to increase HPV vaccine uptake
- Quarterly meetings are on the third Thursday of the month from 1 – 2pm ET

What to Expect Here



Sharing

Connection

Community

Introductions

In your **Zoom box**, please share your organization after your name

Then… in the **chat** share your favorite summertime treat

Today’s Presenters

Dr. Arundhati Bakshi

Sara Brown, MPH, CHES

Early initiation as a potential solution to increase HPV vaccine uptake

Dr. Runa Bakshi and Sara Brown, MPH, CHES

HPV Vaccination Series Initiation at Age 9 -10:

An Observational, Retrospective Cohort Utilizing Louisiana's IIS

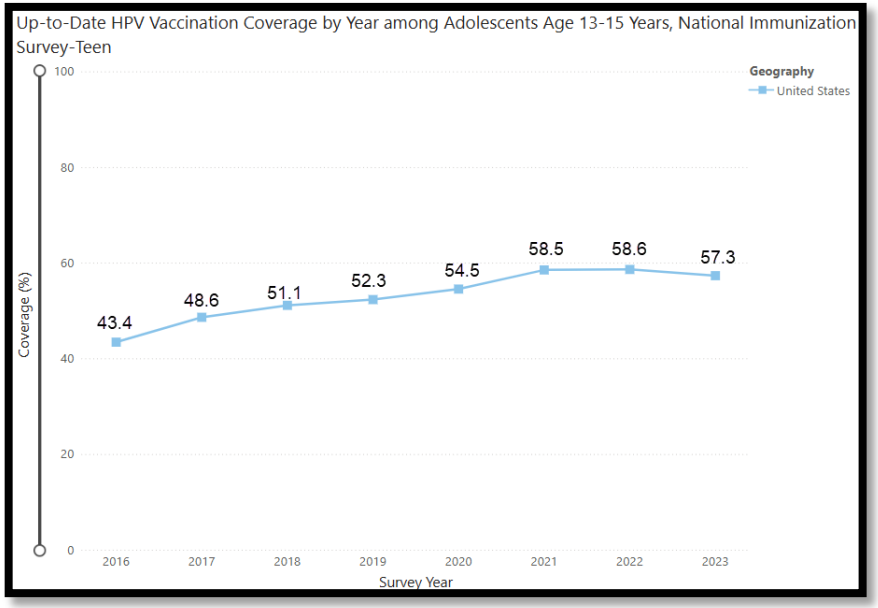
Sara Brown, MPH, CHES
Arundhati Bakshi, PhD (Project PI)

Acknowledgements

- **Kaye Kleine** – Business Intelligence Analyst III, *STChealth*
- **Ousswa Kudia** – Analytics Product Management Supervisor, *STChealth*
- **Arundhati Bakshi** – Data Analytics Program Manager, *Louisiana Department of Health*
- **Quan Le** - LINKS Program Manager, *Louisiana Department of Health*

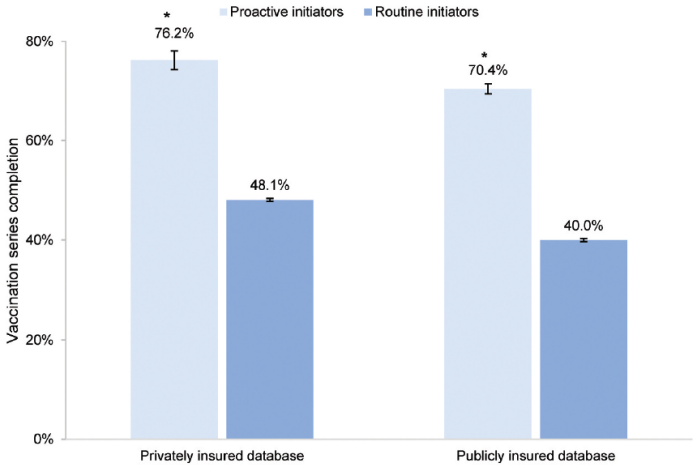
Background

- ~57% of 13-15 year-olds are up-to-date for HPV (NIS-Teen Survey)
- Healthy People 2030 goal: 80% coverage
- **ACIP Recommendation:** Initiate series at age 11
- In 2020, ACS and AAP updated recommendations to initiate between ages 9-12



(CDC TeenVaxViewer)

Early initiation may be associated with higher on-time HPV vaccine series completion.



(Saxena et al., 2023)

Early Initiation of HPV Vaccination and Series Completion in Early and Mid-Adolescence

Elizabeth Goodman, MD, MBA, Marisa Felsher, PhD, MPH, Dong Wang, PhD, Lixia Yao, PhD, Ya-Ting Chen, PhD, MPH

HPV vaccination initiation after the routine-recommended ages of 11–12 in the United States

Daniel C. Beachler [a,*], Felisa A. Gonzales [b], Sarah C. Kobrin [b], Aimée R. Kreimer [a]

[a] Division of Cancer Epidemiology, and Genetics, National Cancer Institute, Bethesda, MD, USA
[b] Division of Cancer Control and Population Sciences, National Cancer Institute, Bethesda, MD, USA

HPV vaccine initiation at 9 or 10 years of age and better series completion by age 13 among privately and publicly insured children in the US

Kunal Saxena[a], Niranjan Kathe[b], Poorva Sardana[b], Lixia Yao[a], Ya-Ting Chen[a], and Noel T. Brewer[c]

Purpose

Using Immunization Information System (IIS) data, determine the association between age at initiation of the HPV vaccine series and likelihood of completion and whether the association differs by individual characteristics.

Materials & Methods

Data from LINKS

Retrospective cohort included those aged 9-17 by January 1, 2022

Follow-up periods through February 1, 2023 (n=670,398)

Multivariable logistic regression using general linear models

Adjusted for gender, SVI, urbanicity, and race

Materials & Methods

Primary Exposure: Age at HPV series initiation

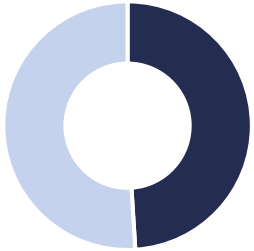
Outcome: HPV vaccine series completion. Series completion defined as:

- 2 recorded doses for those whose first dose was administered before their 15th birthday
- 3 recorded doses for those whose first dose was administered on or after their 15th birthday.

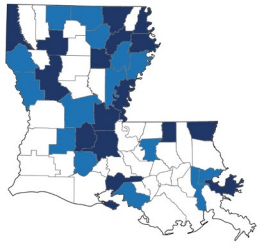
Covariates: Age, race, gender, urbanicity, VFC eligibility

Cohort Demographics

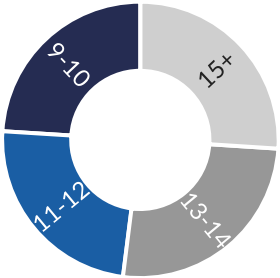
49%
female



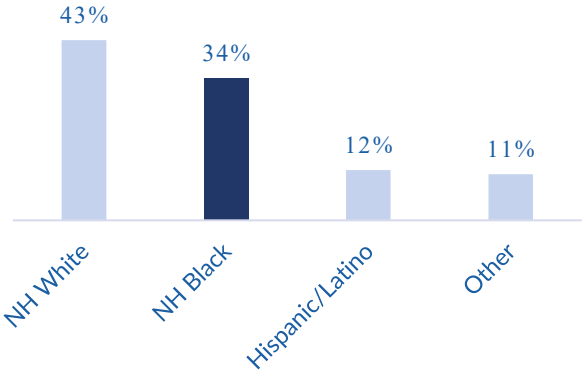
Roughly Half
reside in a Medium-High to High SVI parish



Age was evenly distributed

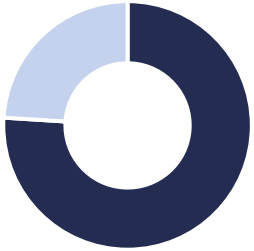


1 in 3
NH Black

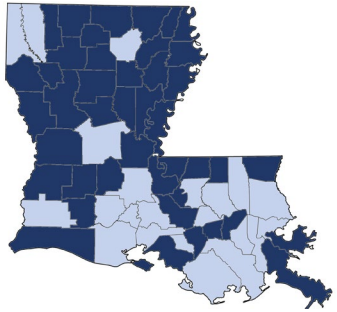


Cohort Demographics

76%
VFC eligible



3 in 4
reside in a rural parish



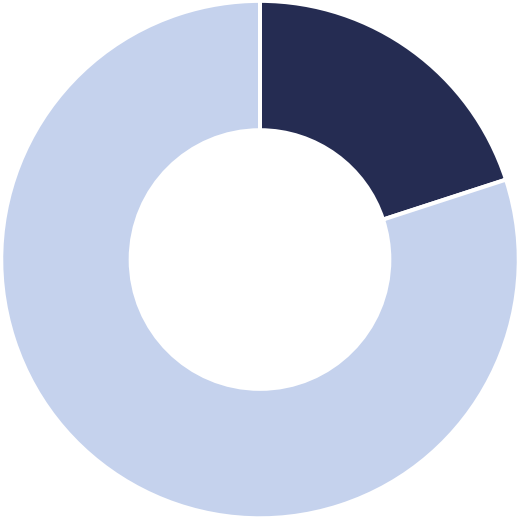
Of those who initiated 57%
completed HPV vaccine series

Results

- 7.3% of cohort started HPV vaccine series between January 1, 2022 and February 1, 2023 (n=49,012)
- 57.4% of cohort completed the HPV vaccine series
- Among those who completed the series:
  - 7.8% initiated at age 9-10
  - 79% initiated at age 11-12
  - 12% initiated at age 13-14
  - 1.7% initiated at age 15+

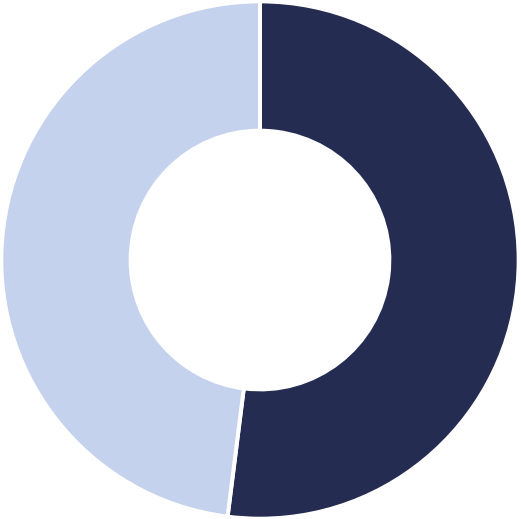
Of those who initiated at age 15+…

20% completed the series



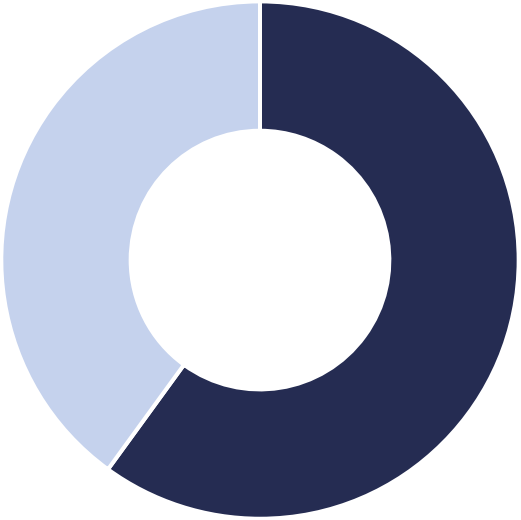
Of those who initiated at age 13-14…

52% completed the series



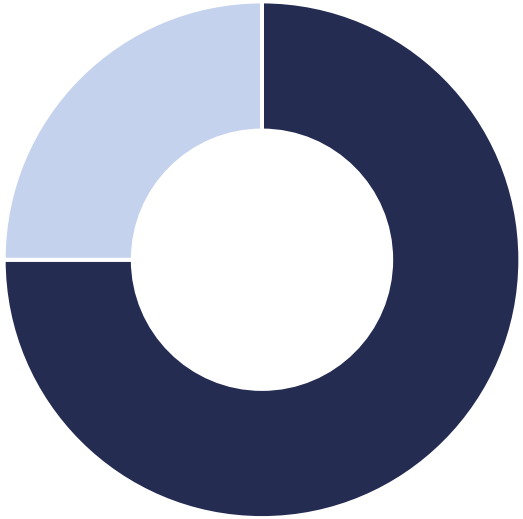
Of those who initiated at age 11-12…

60% completed the series



Of those who initiated at age 910…

75% completed the series



Association between individual characteristic and odds of series completion

Characteristic	Reference Group	Unadjusted Odds Ratio [95% CI]	Adjusted Odds Ratio [95% CI]
Initiated at age 9-10 years	Initiated at 11-12 years	1.99 [1.83, 2.17] *p-value<0.01*	1.78 [1.26, 2.53] *p-value<0.01*

Interpretation

- Those who initiated the HPV vaccine series at 9-10 years were 78% more likely to complete the series compared with those who initiated at 11-12 years.

Results- VFC

- Overall, those who were VFC eligible were 20% less likely to complete the HPV vaccine series
  - Those aged 9-10 who were VFC eligible were 61% more likely to complete the HPV vaccine series compared to 11-12 non-VFC eligible children
  - Aged 9-10 NH Black individuals were 63% more likely to complete compared to aged 11-12 NH Black individuals

Results- Urbanicity

- Overall, those who initiated in a rural parish were 18% less likely to complete the HPVv series.
  - Those aged 9-10 who lived in a rural parish were 12% more likely to complete the HPVv series compared to 11-12 aged metro children
  - Aged 9-10 rural NH White initiators were 26% more likely to complete compared to their 11-12 year old counterparts
  - No differences were observed by urbanicity for NH Black individuals

Results- SVI

- Overall, those who initiated in a High SVI parish were **no more likely** to complete HPVv series compared to those in a Low SVI parish.
  - Those aged 9-10 who were in a High SVI parish **12%** less likely to complete the HPVv series compared to 11-12 children who live in a Low SVI parish
  - However, aged 9-10 in High SVI parishes were **6%** more likely to initiate the series compared to all 11-12 year-olds in Low SVI parishes

Discussion

- These results support that initiating the HPV vaccine at age 9-10 is associated with significantly higher HPV series completion rates, both before and after adjusting for covariates.
- When compared to the eligible population, those historically at higher risk for experiencing vaccine inequities experienced greater odds of HPV vaccine series completion.
  - **However, these re-appeared when stratified by initiators.**
- When stratified by age, VFC status was positively significantly associated with HPV series completion.

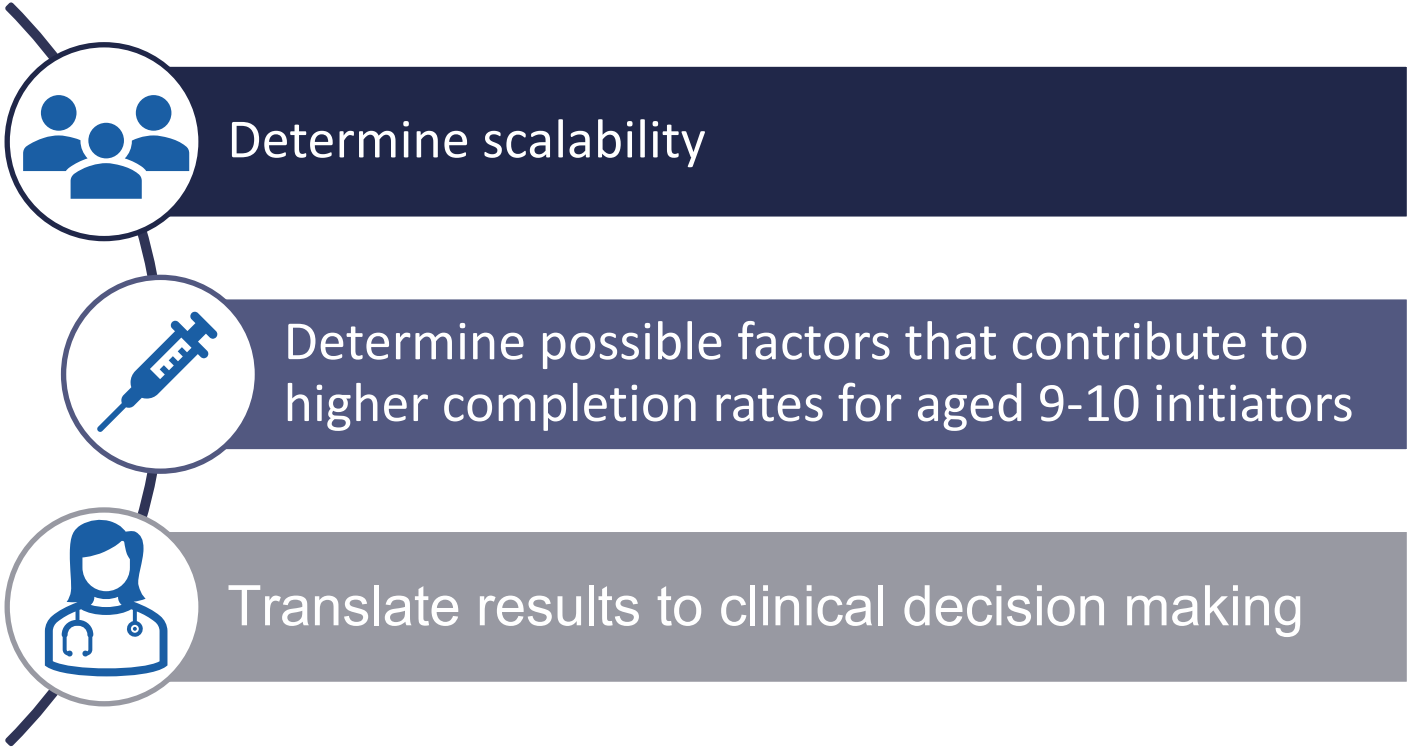
Limitations

IIS denominator inflation

Follow-up period may have marked individuals as series incomplete

Indeterminate external generalizability

Next Steps


Determine scalability
Determine possible factors that contribute to higher completion rates for aged 9-10 initiators
Translate results to clinical decision making

Thank you!

analytics@stchome.com

References

1. Centers for Disease Control and Prevention. Cancers Caused by HPV are Preventable. July 9, 2024. Accessed December 20, 2024. https://www.cdc.gov/hpv/hcp/clinical-overview/
2. Centers for Disease Control and Prevention. Up-to-Date HPV Vaccination Coverage by Year Among Adolescents Age 13-17 Years, National Immunization Survey-Teen. August 22, 2024. Accessed December 20, 2024. https://www.cdc.gov/teenvaxview/interactive/
3. U.S. Department of Health and Human Services. Increase the proportion of adolescents who get recommended doses of the HPV vaccine — IID-08. Healthy People 2030. Accessed December 20, 2024. https://odphp.health.gov/healthypeople/objectives-and-data/browse-objectives/vaccination/increase-proportion-adolescents-who-get-recommended-doses-hpv-vaccine-iid-08
4. 4. Meites E, Szilagyi PG, Chesson HW, Unger ER, Romero JR, Markowitz LE. Human papillomavirus vaccination for adults: updated recommendations of the advisory committee on immunization practices. MMWR Morb Mortal Wkly Rep. 2019;68(32):698-702. doi:10.15585/mmwr.mm6832a3
5. Saslow D, Andrews KS, Manassaram-Baptiste D, Smith RA, Fontham ETH, American Cancer Society Guideline Development Group. Human papillomavirus vaccination 2020 guideline update: American Cancer Society guideline adaptation. CA Cancer J Clin. 2020;70(4):274-280. doi:10.3322/caac.21616
6. Beachler DC, Gonzales FA, Kobrin SC, Kreimer AR. HPV vaccination initiation after the routine-recommended ages of 11-12 in the United States. Papillomavirus Res. 2016;2:11-16. doi:10.1016/j.pvr.2015.12.001
7. Goodman E, Felsher M, Wang D, Yao L, Chen Y-T. Early Initiation of HPV Vaccination and Series Completion in Early and Mid-Adolescence. Pediatrics. 2023;151(3). doi:10.1542/peds.2022-058794
8. Minihan AK, Bandi P, Star J, Fisher-Borne M, Saslow D, Jemal A. The association of initiating HPV vaccination at ages 9-10 years and up-to-date status among adolescents ages 13-17 years, 2016-2020. Hum Vaccin Immunother. 2023;19(1):2175555. doi:10.1080/21645515.2023.2175555
9. Inguva S, Barnard M, Ward LM, et al. Factors influencing Human papillomavirus (HPV) vaccination series completion in Mississippi Medicaid. Vaccine. 2020;38(8):2051-2057. doi:10.1016/j.vaccine.2019.12.030
10. Saxena K, Kathe N, Sardana P, Yao L, Chen Y-T, Brewer NT. HPV vaccine initiation at 9 or 10 years of age and better series completion by age 13 among privately and publicly insured children in the US. Hum Vaccin Immunother. 2023;19(1):2161253. doi:10.1080/21645515.2022.2161253

References

11. O'Leary SC, Frost HM. Does HPV vaccination initiation at age 9, improve HPV initiation and vaccine series completion rates by age 13? Hum Vaccin Immunother. 2023;19(1):2180971. doi:10.1080/21645515.2023.2180971
12. 12. St Sauver JL, Rutten LJF, Ebbert JO, Jacobson DJ, McGree ME, Jacobson RM. Younger age at initiation of the human papillomavirus (HPV) vaccination series is associated with higher rates of on-time completion. Prev Med. 2016;89:327-333. doi:10.1016/j.ypmed.2016.02.039
13. 13. Chido-Amajuoyi OG, Talluri R, Wonodi C, Shete S. Trends in HPV Vaccination Initiation and Completion Within Ages 9-12 Years: 2008-2018. Pediatrics. 2021;147(6). doi:10.1542/peds.2020-012765
14. 14. Biancarelli DL, Drainoni M-L, Perkins RB. Provider experience recommending HPV vaccination before age 11 years. J Pediatr. 2020;217:92-97. doi:10.1016/j.jpeds.2019.10.025
15. 15. Rodriguez SA, Mullen PD, Lopez DM, Savas LS, Fernández ME. Factors associated with adolescent HPV vaccination in the U.S.: A systematic review of reviews and multilevel framework to inform intervention development. Prev Med. 2020;131:105968. doi:10.1016/j.ypmed.2019.105968
16. 16. Nickel B, Dodd RH, Turner RM, et al. Factors associated with the human papillomavirus (HPV) vaccination across three countries following vaccination introduction. Prev Med Rep. 2017;8:169-176. Published 2017 Oct 10. doi:10.1016/j.pmedr.2017.10.005
17. 17. Kempe A, O'Leary ST, Markowitz LE, et al. HPV Vaccine Delivery Practices by Primary Care Physicians. Pediatrics. 2019;144(4):e20191475. doi:10.1542/peds.2019-1475

Mentimeter Poll

Resources & Wrap Up

Coming in July! The IIS Data Quality Resource Hub

- It's interactive!
- Cut thru all the noise and get the most relevant guidance
- Create a data quality improvement plan
- See a live demo during **TUG** on **7/22**
- Email jdial@immregistries.org

AIRA

IIS Data Analyst Forum (IDAF)

- Online forum
- Chat in real-time with others who work with immunization data
- Post burning questions
- Share your experiences
- Post anonymously, if desired
- Receive notifications of new activity

Join IDAF here!

See what the buzz is about!

Thank you for participating!

We value you!