

#StayWell2022



A Teen Vaccine

ACHIA
Alabama Child Health Improvement Alliance

QI Learning
Collaborative

#StayWell2022 Teen Vaccine QI Learning
Collaborative

Final Report

This report was prepared in collaboration with faculty and staff from the Applied Evaluation and Assessment Collaborative within the Department of Health Policy and Organization at the University of Alabama at Birmingham (UAB) School of Public Health. The following individuals represent ACHIA and AEAC staff who contributed to this report.

Cason Benton, MD, FAAP

Director, Alabama Child Health Improvement Alliance
Professor, University of Alabama at Birmingham

Rachel Latham, MEd

Project Manager, Alabama Child Health Improvement Alliance
Project Coordinator, Alabama Chapter of the American Academy of Pediatrics

Peyton McIlwain

Project Coordinator II
University of Alabama at Birmingham Academic General Pediatrics

LaCrecia Thomas, RN, MSN, CPNP – AC/PC

QI Coach
Children's of Alabama

Caitlin Purdy, RN-BSN

QI Coach
University of South Alabama

Matt Fifolt, PhD

Associate Professor
Assistant Director of the Applied Evaluation and Assessment Collaborative

Anne E. Brisendine, DrPH

Assistant Professor
Science Director of the Applied Evaluation and Assessment Collaborative

Elizabeth L. Blunck, MPH

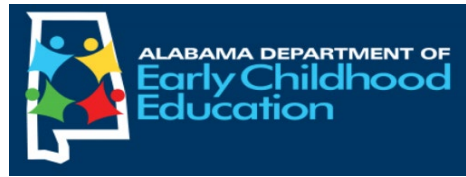
Senior Program Manager
Applied Evaluation and Assessment Collaborative

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Teen Vaccine Completion: Why It Matters and the Pediatrician’s Role

Alabama’s overall rates for all childhood vaccines decreased between 50.8% and 59.2% in 2020 as compared to the same period the year before. The Alabama Department of Public Health’s (ADPH) Immunization Patient Resources with Integrated Technology Registry (ImmPRINT), the statewide population-based information system for immunizations, indicates that for 11- to 13-year-olds, **only 17% of patients were up-to-date** on the vaccines for this age group: Tetanus-diphtheria-pertussis (Tdap), Human papilloma virus (HPV), and Meningococcal (MenACWY) (data as of July 13, 2021)¹. While the Healthy People 2020 goal was for 80% of adolescents to complete the HPV series, only 18% of Alabama’s males and females ages 9 – 12 in Alabama have met this goal as of that same date. HPV vaccinations lag far behind the completion rates for Tdap and MenACWY vaccines, at 60% and 51%, respectively. Persistently low vaccine coverage levels place Alabama adolescents at risk for preventable cancers and infectious diseases.

According to the Center for Disease Control and American Academy of Pediatrics, best practices to optimize vaccine uptake at the clinic level include:

- Maintaining immunization registries
- Standardizing standing orders and reminder/recall workflows
- Creating a culture supportive of vaccinations
- Expanding opportunities to vaccinate
- Understanding vaccine hesitancy and utilizing evidence-based communication.²

¹ *Immunization Patient Registry with Integrated Technology (ImmPRINT)* [Data set]. Alabama Department of Public Health. (Accessed July 13, 2021).

² “Office Strategies for Improving Vaccination Rates.” *Office Strategies for Improving Immunization Rates*, <https://www.aap.org/en/patient-care/immunizations/implementing-immunization-administration-in-your-practice/office-strategies-for-improving-immunization-rates/>.

#StayWell2022 Teen Vaccine Collaborative Design

Quality Improvement Training

Quality improvement (QI) training for practices begins with a virtual coaching visit. Practices prepare for the visit by developing aim statements and a process map informed by brief videos on the Model for Improvement and a PowerPoint presentation on process maps. During the coaching visit, aim statements are revised, the process map is reviewed for change ideas, the data collection plan is developed, and the plan for the first test of change is developed.

QI concepts are shared throughout the remainder of the collaborative with opportunities for transparency of practice level measures and peer-to-peer learning. The objective for this sharing is for practices to learn from their measures and adjust their testing accordingly. In addition, through the sharing of practice experiences, latest ideas for testing and improvement can be adapted in a variety of practice settings.

The #StayWell2022 Collaborative also allowed practices to adapt operational definitions for age-defined populations for measures. The coaching visit, practice specific email communications, and practice webinars provided opportunities for one-on-one advice and peer-to-peer learning to adapt operational definitions to reflect the actual focus of each practice's improvement.

Qualitative Methods

The Applied Evaluation and Assessment Collaborative (AEAC) conducted interviews and a post-assessment survey after the completion of the #StayWell2022 learning collaborative. Interview data were analyzed in NVivo 12 and survey data were collected and analyzed via Qualtrics.

Collaborative Content Experts

Tamera Coyne-Beasley, MD, MPH, FAAP, past president of the Society for Adolescent Health and Medicine and Division Director of UAB's Adolescent Medicine Department, kicked off the collaborative by orienting participating practices with the learning objectives of the collaborative, the importance of adolescent immunizations, and a brief introduction about QI. Participants completed the learning module "Disparities in Vaccine-Preventable Disease: The HPV example," in which she shared evidence and data from HPV-attributable cancers with the collaborative. Dr. Coyne-Beasley participated in the celebratory final live webinar.

David Kimberlin, MD, FAAP, a Sergio Stagno Endowed Chair in Pediatric Infectious Diseases at UAB, examined the various vaccine platforms that are authorized in development for COVID vaccines, as well as the present data on the efficacy of COVID vaccines on the pediatric population. Dr. Kimberlin also participated in the celebratory final live webinar.

Marietta Vazquez, MD, Professor of Pediatrics at Yale School of Medicine, presented a learning module on adolescent vaccinations in which participants explored the different recommendations for adolescent vaccines, ages in which children should receive vaccines, and at-risk pediatric populations.

Gregory Zimet, PhD, FSAHM, Professor of Pediatrics and Clinical Psychology at Indiana University, hosted a learning presentation on effective and efficient adolescent vaccine communication strategies for busy practitioners. Discussions focused on identifying elements of strong provider recommendations for adolescent vaccines, effective responses to parental questions, and identifying engaging techniques for vaccine hesitant parents.

Heather Taylor, MD, FAAP, Professor of Pediatrics and Director of Undergraduate Medical Education at the University of Alabama, served as the Physician Lead for the collaborative. Through this role, Dr. Taylor used her expertise in the design, curriculum, recruitment, and evaluation for the collaborative, and guided monthly webinars.

#StayWell 2022 Participants

Practices commit to the collaborative voluntarily. Each practice has a minimum of three core team members: a lead physician, clinical staff, and administrative staff such as the practice manager. The prime motivation to participate in a collaborative is to improve the proportion of adolescent vaccination. Additionally, ACHIA collaborative participation aligns with other practice and provider requirements such as:

- Continuing Medical Education and Continuing Education Units for providers and nurses, which is required for State Licenses.
- Maintenance of Certification Part 4 for the American Board of Pediatrics, which is required for the American Board of Pediatrics good standing.
- Supporting Patient Centered Medical Home (re)certification.

Participating Practices

- Adolescent Health Center (COA)
- Charles Henderson Child Health Center
- Columbus Children’s Clinic
- Dothan Pediatric Subspecialty Clinic
- Mayfair Medical Group
- Partners in Pediatrics
- Pediatrics Adolescent Medicine, Inc.
- Pell City Pediatrics
- Sylacauga Pediatrics
- UAB Huntsville Pediatrics
- UAB Primary Care Clinic
- University Medical Center Pediatric Clinic
- Vestavia Pediatrics
- Western Health Center

Goals, Aims, Key Drivers and Measures

Global Aim: The global aim for #StayWell2022 is to ensure teens are fully vaccinated by age 13.

Over the 9 months, participants will increase knowledge of best practices for improving teen vaccination rates by reviewing online educational modules and engaging with faculty experts via monthly webinars. Practices will conduct assessments of current practices through surveys and will implement change ideas by applying QI tools such as Plan-Do-Study-Act cycles under the guidance of the ACHIA QI coach.

Specific Aims: By the end of the collaborative period, practices will:

- increase HPV vaccine completion for 9- to 12-year olds by 5% over practice baseline.
- increase Tdap and MenACWY vaccine completion for 11- to 12- year-olds by 5% over practice baseline.

Key Drivers:

- The practice has reliable methods to collect and analyze population data for teen vaccines.
- The practice maximizes opportunities for vaccine completion.
- The practice uses evidence-based strategies to communicate the importance of vaccine completion.

#StayWell2022 Teen Vaccine Completion Results

Practice Demographics

The #StayWell 2022 Teen Vaccine learning collaborative had a total of 14 sites (19 total practices) involved in improving vaccination rates of adolescents in Alabama.

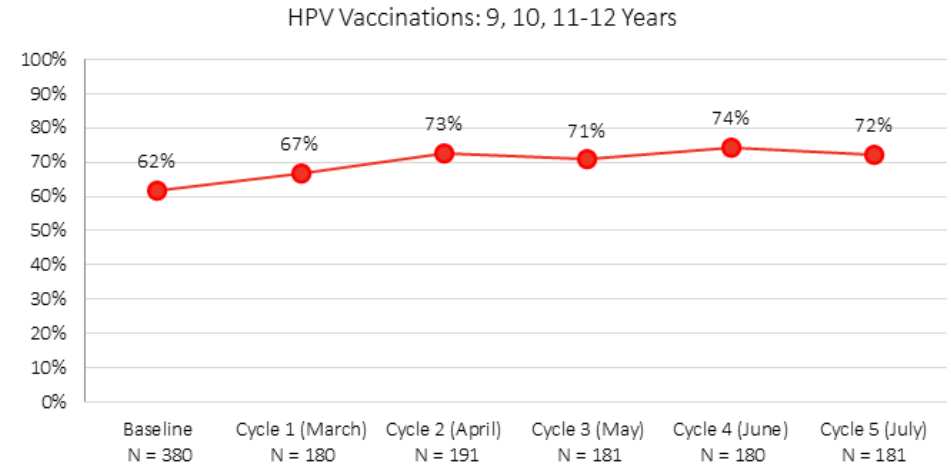
- 9 (47.4%) practices were independently owned, 3 (15.8%) were affiliated with a university or medical school, 3 (15.8%) were affiliated with a hospital, and 4 (21.1%) identified as “other.” These respondents provided descriptors such as “health department,” “rural health center,” and “hospital and university affiliated.” No practices identified as Federally Qualified Health Centers.
- 11 (61.1%) practices had over half of their patients insured through Medicaid
- 3 (16.7%) practices had over half of their patients insured through Blue Cross Blue Shield

Practice Sites		14
Primary Office Setting	Small (1-3 physicians)	8
	Medium (4-6 physicians)	3
	Large (more than 7 physicians)	7
Primary Office Location	Rural	7
	Urban	6
	Suburban	5
Practice Panel	9- to 12-year-olds	64,734 (9.87% 9- to 12-year-olds in Alabama)

Data Highlights

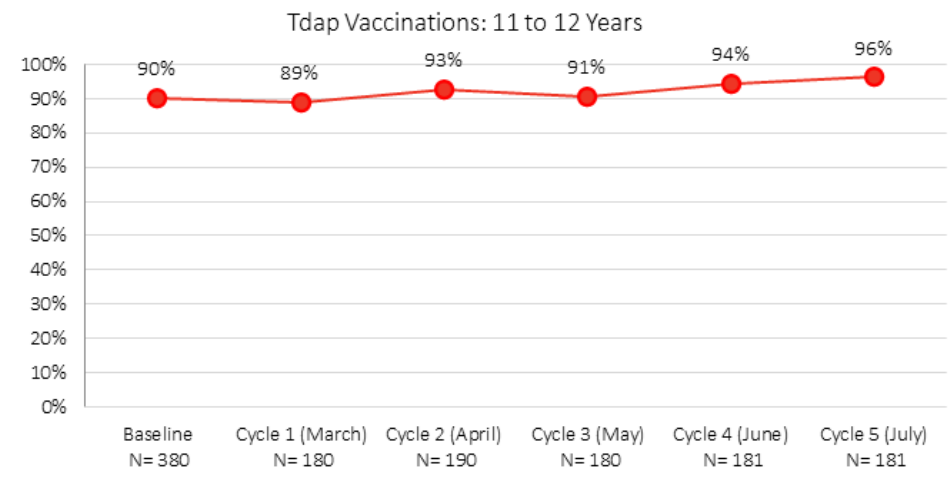
Measure 1: HPV Vaccination

- **Goal:** 5% above practice baseline
- **Patient Population:** All patients eligible for dose 1 or 2
- **Results:** The percentage of 9 – 12-year-olds completing HPV vaccinations exceeded the improvement goal of 5% over the course of the collaborative.



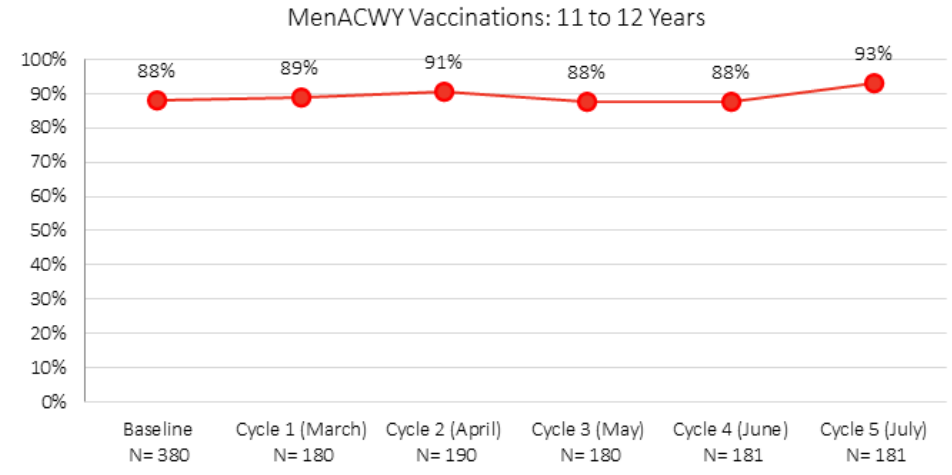
Measure 2: Tdap Vaccination

- **Goal:** 5% above practice baseline
- **Patient Population:** All 11 - 12-year-olds seen for any visit during the measurement period
- **Results:** The percentage of 11 – 12-year-olds completing Tdap vaccinations exceeded the improvement goal of 5% over the course of the collaborative.



Measure 3: MenACWY Dose 1 Vaccination

- **Goal:** 5% above baseline
- **Patient Population:** All 11 - 12-year-olds seen for any visit during the measurement period
- **Results:** The percentage of 11 – 12-year-olds completing MenACWY vaccinations met the improvement goal of 5% over the course of the collaborative.



Qualitative Results

Practice Self-Assessment for #StayWell 2022 Teen Vaccine learning collaborative:

This section includes self-reported experiences and insights from practices that participated in the #StayWell Teen Vaccine learning collaborative. The AEAC collected and analyzed survey data using Qualtrics.

Continuing Tests of Change

Participants reported their intentions to continue to implement many of the change ideas tested throughout the course of the collaborative. Many indicated they will continue to review their ImmPRINT data, both to ensure accurate data and identify patients due for vaccination. Several practices intend to use all opportunities to vaccinate patients (e.g., sick visits). Practices will continue efforts to provide vaccination education to parents or caregivers through verbal and written communication and social media. Some practices will offer HPV vaccinations to 9- and 10-year-old patients. Several practices are implementing changes to their workflows, such as reviewing the schedule a day ahead of time to identify patients due for vaccination. A couple practices will continue to employ the “announcement” and “strong recommendation” strategies taught during the collaborative. A couple respondents will work on increasing COVID vaccine education and accessibility in their practices.

Manage Population

For which of the following statements did your practice conduct a test of change? Check all that apply.

	% (n)
Our practice has an immunization champion.	66.7% (8)
Our champion reviews and shares immunization data/quality metrics with the practice.	66.7% (8)
Our office has an agreed upon vaccination schedule	100.0% (12)
Our office uses one or more data system (state registry, payor reports, and/or EHR reports) to identify vaccine gaps for adolescent patients.	91.7% (11)
Our office applies a standardized MOGE (moved or gone) cleanup for our data.	66.7% (8)
Our practice reviews immunization data in the context of race/ethnicity.	8.3% (1)

For each of the statements you selected, please rate the level of improvement your practice experienced based on your participation in this learning collaborative.

	No improvement % (n)	Somewhat improved % (n)	Significantly improved % (n)	Total*
Our practice has an immunization champion.	14.3% (1)	14.3% (1)	71.4% (5)	7
Our champion reviews and shares immunization data/quality metrics with the practice.	12.5% (1)	37.5% (3)	50.0% (4)	8
Our office has an agreed upon vaccination schedule	16.7% (2)	16.7% (2)	66.7% (8)	12
Our office uses one or more data system (state registry, payor reports, and/or EHR reports) to identify vaccine gaps for adolescent patients.	9.1% (1)	18.2% (2)	72.7% (8)	11
Our office applies a standardized MOGE (moved or gone) cleanup for our data.	25.0% (2)	37.5% (3)	37.5% (3)	8
Our practice reviews immunization data in the context of race/ethnicity.	0.0% (0)	0.0% (0)	100.0% (1)	1

**Note: The total number provided for each statement is the number of respondents who indicated in the previous question that they conducted a test of change regarding that specific statement.*

Workflow

For which of the following statements did your practice conduct a test of change? Check all that apply.

	% (n)
Our practice has Standing Orders for Tdap, HPV and MenACWY.	38.5% (5)
Our practice routinely administers Tdap, HPV, and MenACWY at visits other than well visits	84.6% (11)
Our practice routinely administers HPV at 9- and/or 10-year-old visits.	53.9% (7)
Our practice offers flexible appointment times for adolescent vaccinations (such as after school, weekends, same day).	38.5% (5)
Our practice uses an office reminder/recall system for scheduling vaccines.	69.2% (9)
Our doctors all provide a strong provider recommendation for Tdap, HPV, and MenACWY.	84.6% (11)

For each of the statements you selected, please rate the level of improvement your practice experienced based on your participation in this learning collaborative.

	No improvement % (n)	Somewhat improved % (n)	Significantly improved % (n)	Total*
Our practice has Standing Orders for Tdap, HPV and MenACWY.	0.0% (0)	0.0% (0)	100.0% (5)	5
Our practice routinely administers Tdap, HPV, and MenACWY at visits other than well visits	0.0% (0)	36.4% (4)	63.6% (7)	11
Our practice routinely administers HPV at 9- and/or 10-year-old visits.	14.3% (1)	28.6% (2)	57.1% (4)	7
Our practice offers flexible appointment times for adolescent vaccinations (such as after school, weekends, same day).	0.0% (0)	20.0% (1)	80.0% (4)	5
Our practice uses an office reminder/recall system for scheduling vaccines.	11.1% (1)	44.4% (4)	44.4% (4)	9
Our doctors all provide a strong provider recommendation for Tdap, HPV, and MenACWY.	0.0% (0)	27.3% (3)	72.7% (8)	11

**Note: The total number provided for each statement is the number of respondents who indicated in the previous question that they conducted a test of change regarding that specific statement.*

Communication

For which of the following statements did your practice conduct a test of change? Check all that apply.

	% (n)
Our practice projects our support for teen vaccines through social media, our website and office signage.	70.0% (7)
Our practice routinely educates existing and new staff members on the practice commitment to teen vaccines.	100.0% (10)
Our practice partners with parents as advisors in our quality improvement effort.	20.0% (2)
Our practice partners with teens as advisors in our quality improvement effort.	10.0% (1)

For each of the statements you selected, please rate the level of improvement your practice experienced based on your participation in this learning collaborative.

	No improvement % (n)	Somewhat improved % (n)	Significantly improved % (n)	Total*
Our practice projects our support for teen vaccines through social media, our website and office signage.	0.0% (0)	57.1% (4)	42.9% (3)	7
Our practice routinely educates existing and new staff members on the practice commitment to teen vaccines.	0.0% (0)	30.0% (3)	70.0% (7)	10
Our practice partners with parents as advisors in our quality improvement effort.	0.0% (0)	0.0% (0)	100.0% (2)	2
Our practice partners with teens as advisors in our quality improvement effort.	0.0% (0)	0.0% (0)	100.0% (1)	1

**Note: The total number provided for each statement is the number of respondents who indicated in the previous question that they conducted a test of change regarding that specific statement.*

Quality Improvement Support

QI Coaching Visit: Please rate the value of the virtual coaching visit.

- Almost all practices (n=13; 92.9%) reported virtual coaching as being “somewhat helpful” to “very helpful.”
- One practice (7.1%) reported virtual coaching as being “not helpful.”

	% (n)
Not helpful	7.1% (1)
Somewhat helpful	21.4% (3)
Helpful	42.9% (6)
Very helpful	28.6% (4)
Total	100.0% (14)

A sample of comments are provided below.

- “I think I always at first am thinking too broadly and QI coach helps me think in terms of measurable/achievable outcomes.”
- “We have participated in several prior ACHIA projects, but we appreciated the ability to ask questions about process and data collection.”

QI Coaching on Webinars: Please rate your level of agreement with the following statement: The QI coach communicated content effectively during monthly webinars, emails, and one-on-one calls.

- Almost all practices (13; 93.3%) “agreed” or “strongly agreed” that QI coaches communicated content effectively.
- One practice (6.7%) “strongly disagreed” with the statement.

	% (n)
Strongly disagree	6.7% (1)
Disagree	0.0% (0)
Neither agree nor disagree	0.0% (0)
Agree	40.0% (6)
Strongly agree	53.3% (8)
Total	100.0% (15)

QI Tools: Please rate your level of agreement with the following statements.

- The responses for all statements were overwhelmingly positive.
- There were no responses of “disagree” or “strongly disagree.”

	Strongly disagree % (n)	Disagree % (n)	Neither agree nor disagree % (n)	Agree % (n)	Strongly agree % (n)	Total
Process mapping informed our change ideas.	0.0% (0)	0.0% (0)	6.7% (1)	60.0% (9)	33.3% (5)	15
The review of data informed adaptations to our tests of change.	0.0% (0)	0.0% (0)	13.3% (2)	53.3% (8)	33.3% (5)	15
Our practice team meetings effectively communicated the project to our team and other providers in the practice.	0.0% (0)	0.0% (0)	6.7% (1)	53.3% (8)	40.0% (6)	15

Collaborative Format

Please rate your level of agreement with the following statements.

- The responses for all statements were overwhelmingly positive.
- The statement “The online modules were useful to learn about teen vaccines,” was the only statement that elicited a response of “disagree.”

	Strongly disagree % (n)	Disagree % (n)	Neither agree nor disagree % (n)	Agree % (n)	Strongly agree % (n)	Total
We are satisfied with our experience in this learning collaborative.	0.0% (0)	0.0% (0)	0.00%	35.7% (5)	64.3% (9)	14
The online modules were useful to learn about teen vaccines.	0.0% (0)	6.7% (1)	0.0% (0)	33.3% (5)	60.0% (9)	15
The email communication was at the appropriate level to keep the practice on track with the QI project.	0.0% (0)	0.0% (0)	0.0% (0)	40.0% (6)	60.0% (9)	15
The monthly webinar calls were an effective format to learn from other practices and from the content experts.	0.0% (0)	0.0% (0)	0.0% (0)	33.3% (5)	66.7% (10)	15
The ACHIA website (www.achia.org) was useful for obtaining project resources.	0.0% (0)	0.0% (0)	6.7% (1)	40.0% (6)	53.3% (8)	15
The Quality Improvement Data Aggregator (QIDA) was easy to navigate and an effective way to track our practices' improvement.	0.0% (0)	0.0% (0)	6.7% (1)	53.3% (8)	40.0% (6)	15
The practice surveys provided sufficient opportunity to reflect on our efforts.	0.0% (0)	0.0% (0)	20.0% (3)	40.0% (6)	40.0% (6)	15

Having Maintenance of Certification Part 2 available was highly valued by our practice.	0.0% (0)	0.0% (0)	0.0% (0)	40.0% (6)	60.0% (9)	15
Having Maintenance of Certification Part 4 available was highly valued by our practice.	0.0% (0)	0.0% (0)	0.0% (0)	6.7% (1)	93.3% (14)	15
Being able to use this collaborative for PCMH status (initial or renewal) was highly valued by our practice.	0.0% (0)	0.0% (0)	13.3% (2)	13.3% (2)	73.3% (11)	15

Most beneficial aspect of the learning collaborative

Participating practices considered several aspects of the learning collaborative as beneficial. Peer learning and networking were described by several participants as positive experiences facilitated by the collaborative. Participants enjoyed hearing about how other practices implemented change ideas and used this information to make decisions for their own practices. Participating in the collaborative also provided an opportunity for team building within participating practices. Team members were united around a desire to improve vaccination rates among their patient populations. Collaborative activities encouraged participants to identify barriers to improvement within their practices. Participants appreciated opportunities to receive CME and MOC credits and PCMH certification. Overall, participants expressed that participating in the collaborative facilitated improvement of vaccination rates by providing content and QI expertise.

A sample of participant comments are included below.

- “I think the most beneficial aspect of this collaborative was to learn what deficiencies we had in our vaccination rates and how to improve those, especially with our 9- and 10-year-old patients and HPV. I found that one of the barriers that I did not realize existed was how the nurses perceived the HPV vaccine and about giving it early until education was done on this importance and early AB response if given earlier, etc. I think training the nurses to use the sandwich technique or announcement approach on younger kids did improve our early HPV rates.”
- “We all really enjoyed the lectures and CME offered through the project and even those of us who are more experienced practitioners learned some new tricks about vaccine recommendations. The information on the Team Space page was also very helpful.”

Least beneficial aspect of the learning collaborative

Most comments in response to this question were unique and are captured in the sample of comments below. Two participants reported that the surveys were not beneficial. Two others shared that the data were incomplete and not useful.

A sample of comments are included below.

- “I don't think the QIDA data captured the whole picture (we figured this out and began running our own internal data).”
- “I think one thing that could be improved is once the provider has watched the videos necessary for content of the project on the ACHIA website, that some notification should be sent to us that it was completed. I watched several more than once because I could not recall if I had already watched it until I got more into the video and realized I had already seen it. The online forms to sign after a video was completed could be improved. But thanks so much. These videos were helpful.”

Overall Impact: IHI QI Scale

Please use the Institute for Healthcare Improvement scale to rate the #StayWell effort of your practice to improve teen vaccination rates.

- 10 of 15 participating practices (66.7%) made “significant progress and real improvement” or “outstanding and sustained results.”
- Five practices (33.3%) made “modest improvements.”
- No practices rated themselves as “non-starter, no real activity” or “some activity, but no real change in practice or outcome.”

Balancing Measure

In the core team's opinion, how was your practice's participation in the collaborative affected aspects of clinical or operational work at your practice?

- All respondents (100%) expressed that participating in the collaborative had a favorable impact on their practice’s clinical or operational work.

Application of learning to other areas of your practice

Practices reported several translations of collaborative learning to other areas of their practices. Collaborative participants practiced using data for decision-making and to evaluate changes, a useful skill outside of the context of the collaborative. Several survey respondents noticed that the team assembled to participate in the collaborative were united in their mission to improve vaccination rates,

motivated, and more cohesive because of their participation. This feeling extended beyond the collaborative.

Many of the tools taught over the course of the collaborative, such as creating standing orders, can be applied to vaccines other than HPV, Tdap, and MenACWY. Tools for communicating with parents or caregivers about vaccines were also taught during the collaborative. These tools can be used to generally improve communication between health care providers and patients and/or their caregivers.

A sample of comments are included below.

- “It was a great way to help with motivating the team. It helped us all to get to know one another. It helped me to learn how to motivate my team members. It helped me learn how to address other areas we need to work on improving.”
- “We are using what we learned to pre-schedule other vaccines (2nd flu shot, vaccine appointments for patients who are behind schedule). We think about QI in more realistic terms (importance of small tests of change...then reflection before going forward with subsequent tests of change).”
- “We have learned to use the data to help us to determine progress and to evaluate the efficacy of project changes.”

#StayWell 2022 Key Informant Interview Summary

Six individuals were identified as key informants by ACHIA staff. In September and October 2022, an AEAC staff member coordinated Zoom interviews with key informants. The AEAC staff member conducted the interviews, which lasted between 10 and 15 minutes. The interviewer recorded the conversations and analyzed notes for common themes using NVivo 12.

Strengths

Key informants shared positive feedback about their experiences participating in the learning collaborative. Participants found webinars to be well-organized covering relevant and interesting topics. Participants appreciated the variety of expert voices included in the webinars, including presentations from a cancer survivor, both Alabama-based physicians, and others from outside of the state. Collaborative content about HPV vaccine messaging was highlighted as being especially helpful as practices worked to improve their HPV vaccination rates.

During webinars, small group discussions were often engaging and an opportunity for peer-to-peer learning and networking. Participants found it helpful to speak with other practices to hear about their tests of change, what worked well, and what did not. Mentimeter polls contributed to participant engagement.

Quality improvement sessions during webinars and practice level quality improvement coaching were invaluable resources to practices. Expectations for participating in the collaborative were clearly communicated to practices. Knowing the dates of webinars and due dates made it easy for practices to plan despite having busy schedules.

Challenges

The data collected each month over the course of the collaborative were not as descriptive as some practices anticipated. The measures did not capture missed opportunities for vaccines and time between doses. Some participants voiced concerns that the sample size was too small and the number of data points over time were too few. They shared that they felt the data were likely skewed and not representative of their practice. Participants acknowledged that there were limitations to data collection, such as the time frame of the short collaborative.

One practice reported that the instructions for data collection were unclear, particularly regarding the number of charts needed for abstraction, and they completed more work than was necessary as a result. A final data-related concern was that ImmPRINT data are often incomplete or incorrect. This participant was interested in comparing ImmPRINT data with collaborative level data.

When the collaborative began, the state was facing a surge in COVID cases. This stressed healthcare providers across the state. It was difficult to focus on the collaborative amid the surge. Providing space for providers to discuss how they were coping with this was beneficial to providers.

Peer-to-Peer Learning

As described above, participants appreciated the opportunity to engage with other practice and learn about their quality improvement efforts. These conversations often provided participants with additional information that helped them make decisions about tests of change to implement in their own practice. An example provided by one participant was that hearing about standing orders, providing vaccines at all opportunities, and using the announcement technique encouraged them to test these ideas in their practice. On occasion, peer-to-peer discussions required facilitation by ACHIA staff to encourage conversation.

Suggestions for Future Collaboratives

One participant suggested including more expert presentations, especially from outside the context of Alabama. Doing so provides new ideas that otherwise might not be shared if only Alabama-based experts are included in collaboratives.

The following topics of interest were shared by participants:

- COVID vaccination
- Coping with personnel shortages
- Establishing obesity clinics
- Oral health
- Screening for parenting skills and potential abuse

Lessons Learned Highlights

- Peer-to-peer discussions of what worked well in other practices was a collaborative strength.
- Offering vaccines at younger ages and at all visits (not just well visits) lead to the greatest vaccination increases.
- Implementing nurse pre-clinic chart review, huddles, and standing orders increased vaccinations.
- Utilizing evidence-based vaccine communication techniques improved vaccination completion.
- Vaccine registry management is time-intensive which can limit its utility.
- QI collaboration participation supports practice team building.

Conclusion

Practices participating in a 9-month QI collaborative met or exceeded the 5% goal to increase Tdap, MCV(ACWY), and HPV vaccinations in early teens. Even though practices had highly reliable baseline Tdap and MCV(ACWY) vaccination rates, their interventions led to even higher rates of completion. HPV vaccinations had the largest gains due to creating new opportunities for vaccination such as initiating vaccination at 9 years and vaccinating at all visits.

Appendices

Appendix 1: About ACHIA

Appendix 2: Collaborative Format

Appendix 3: Healthy Beginnings 360

Appendix 4: Key Driver Diagram

Appendix 5: Healthy Beginnings Timeline

Appendix 1: About ACHIA

A member of the National Improvement Partnership Network (NIPN) since 2013, the Alabama Child Health Improvement Alliance (ACHIA) is a statewide collaboration of public and private partners that uses measurement-based efforts and a system approach to improve the quality of children's healthcare. Our partners include the Alabama Chapter American Academy of Pediatrics, Children's of Alabama, the University of Alabama at Birmingham Department of Pediatrics, the University of South Alabama Department of Pediatrics, the Alabama Medicaid Agency, the Alabama Department of Public Health – Title V, ALL Kids, Blue Cross and Blue Shield of Alabama, Jefferson County Department of Health, Family Voices, The Children's Rehabilitation Services, and others. ACHIA's administrative home is in the University of Alabama at Birmingham Department of Pediatrics, a state agency, with staffing comprised of a Director and administrative/support staffing. An ACHIA cornerstone is establishing learning collaboratives for practices and health systems to improve care on the front-line, using meaningful data to gauge these efforts, and identifying policy-level implications and improvements. A key component of our staffing structure and work is the use of practice-/system-level facilitators to guide improvement efforts at the ground-level and ensure that evidence-based strategies are implemented and sustained.

Vision, Mission, and Values

- **Vision:** Alabama's children achieve optimal health.
- **Mission:** To improve health outcomes by fostering a culture of quality improvement through partnerships with practitioners, payers, families, and organizations that deliver care to Alabama children.
- **Values Guiding ACHIA Work:** We will
 - be committed to conducting high value, high quality project work.
 - be measurement driven.
 - focus our work on improving the use of interventions with a solid evidence base of effectiveness in practice-based settings.
 - select projects that address priority health/healthcare issues for Alabama children.
 - conduct our work in a multi-disciplinary fashion as improving pediatric care requires the involvement of many different sectors and systems.
 - operate in a spirit of collaboration not competition. We will not address a pediatric health or healthcare priority that is already being comprehensively addressed by another organization unless there is a mutually identified role the ACHIA can play to support that organization's efforts.
 - adhere to principles of health data confidentiality.
 - share knowledge and information learned through our quality improvement work with Alabama public agencies interested in child health and National Improvement Network Partnership stakeholders in the interest of child betterment.

Appendix 2: Collaborative Format

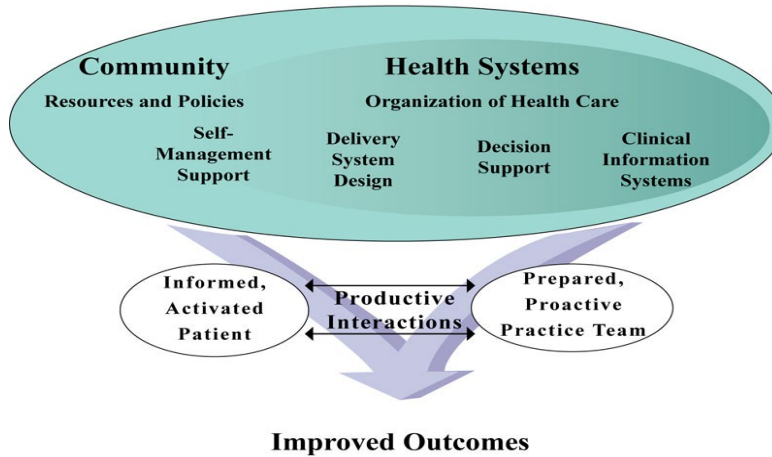
ACHIA Collaboratives use three tightly linked and extraordinarily successful frameworks: the IHI Breakthrough Series Collaborative Learning Model, the Chronic Care Model, and the Model for Improvement.

1. **The IHI Breakthrough Series Collaborative Learning Model³** –The collaborative learning model is based on the Institute for Healthcare Improvement’s (IHI) Breakthrough Series. The model is designed to create a learning laboratory for practices to test and implement changes using the methods and approaches outlined in this section. In the #StayWell2022 Teen Vaccine learning collaborative, practice QI Core Team members voluntarily participate in monthly webinars over a 9-month period. Practice QI Core Teams identify approaches, tools, and resources to implement small *tests of change* with guidance from improvement faculty. Beyond guidance from experts, we have found that many practices learn the most from one another. Hearing what a similar practice has tested and learning what works (and what does not work), are repeatedly reported to be the most valuable part of the collaborative. During “*action periods*,” the time in between practice calls and webinars, the learning collaborative participants analyze their progress by reviewing their data with input from improvement faculty. Monthly practice calls/webinars develop strategies to overcome barriers to making change based on what your practice and other practices are facing as they develop and implement tests of change. Because the learning collaborative is dynamic, topics and assignments currently listed on the syllabus may be revised to meet participant’s needs.
2. **The Chronic Care Model⁴** – The Chronic Care Model, developed by Ed Wagner of the MacColl Center for Healthcare Innovation, identifies the essential elements of a health care system that encourages high quality child health care. These elements are outlined in the visual below: the community, the health system, self-management support, delivery system design, decision support and clinical information systems Many of the chronic care components are similar to those required to be a patient centered medical home. The practice *key driver diagram* is based on Wagner’s Chronic Care Model.

³ *The Breakthrough Series: IHI’s Collaborative Model for Achieving Breakthrough Improvement*. IHI Innovation Series white paper. Boston: Institute for Healthcare Improvement; 2003.

⁴ Wagner EH. Chronic disease management: what will it take to improve care for chronic illness? *Eff Clin Pract.* 1998;1:2-4.

The Chronic Care Model

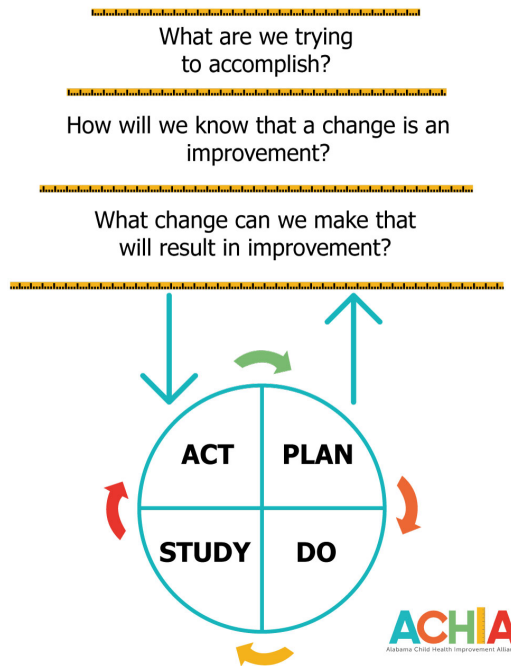


Developed by The MacColl Institute
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3. **The Model for Improvement (MFI)⁵** – Building multiple, planned *tests of change* with Plan-Do-Study- Act cycles allow learning to be captured in small increments. This approach reduces the risk of lengthy planning periods and lost time and effort. The MFI is based on the three questions stated below. The circle describes the iterative cycles that the *Practice QI Core Team* go through to identify whether a test they tried is worth acting on a larger scale.

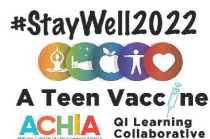
The MFI is at the core of a practice’s work, so it is described below.

MODEL FOR IMPROVEMENT



⁵ Langley GL, Moen R, Nolan KM, Nolan TW, Norman CL, Provost LP. *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance* (2nd edition). San Francisco: Jossey-Bass Publishers; 2009.

Appendix 3: #Staywell 2022 Teen Vaccine 360



Alabama's low completion rate for recommended vaccines by 13 years of age increases the risk of cancers and serious infections such as tetanus, whooping cough and meningitis. Interventions proven to increase vaccine completion include utilizing evidence- based communication, standardizing office workflows and protocols, and utilizing immunization registries integrated with reminder/recall processes.

December 2021 – August 2022

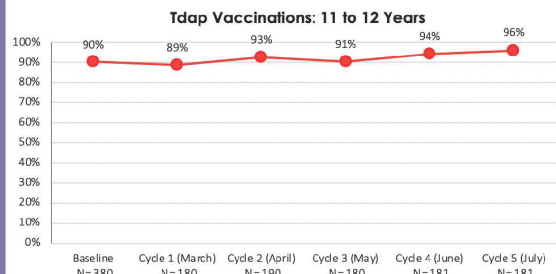
Project Goals

By the end of the nine-month collaborative period, practices will learn and practice effective communication strategies, test workflow improvements, and enhance reminder/recall processes.

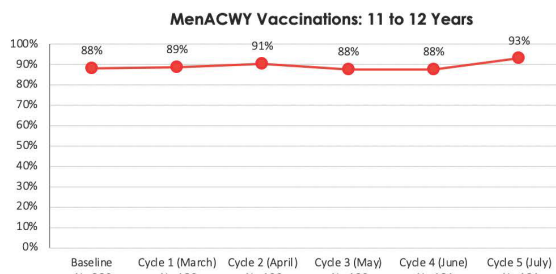
Project Aims

Increase HPV Vaccination completion in 9 – 12-year-olds by 5% over the practice baseline rate.

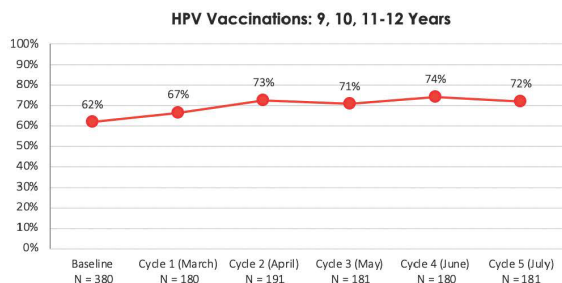
Increase Tdap and MenACWY completion in 11 – 12-year-olds by 5% over practice baseline rate.



The percentage of 11 – 12 year olds completing Tdap vaccinations exceeded the improvement goal of five percent over the course of the collaborative.



The percentage of 11 – 12 year olds completing MenACWY vaccinations met the improvement goal of five percent over the course of the collaborative.



The percentage of 9 – 12 year olds completing HPV vaccinations exceeded the improvement goal of five percent over the course of the collaborative.

Participating Practices

- COA Adolescent Health Center, Charles Henderson Child Health Center, Columbus Children's Clinic, Dothan Pediatric Healthcare Network, Mayfair Medical Group, Partners in Pediatrics, Pediatric Adolescent Medicine, Inc., Pell City Pediatrics, Sylacauga Pediatrics, UAB Huntsville Pediatrics, UAB Primary Care Clinic, University Medical Center Pediatric Clinic, Vestavia Pediatrics, Western Health Center

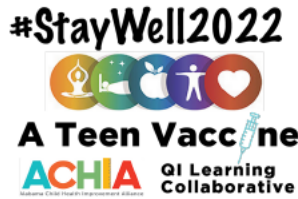
Lessons Learned

- Peer-to-peer discussions of what worked well in other practices was a collaborative strength.
- Offering vaccines at younger ages and at all visits (not just well visits) lead to the greatest vaccination increases.
- Implementing nurse pre-clinic chart review, huddles, and standing orders increased vaccinations.
- Utilizing evidence-based vaccine communication techniques improved vaccine completion.
- Vaccine registry management is time-intensive which can limit its utility.
- QI collaboration participation supports practice team building.

Participants	Project Partners	Project Support
<p>14 practices from across Alabama enrolled with 125 total staff</p> <ul style="list-style-type: none"> 65 physicians 4 CRNP 16 nursing/clinical 25 administrative/ support 	<ul style="list-style-type: none"> Alabama Chapter-American Academy of Pediatrics Leadership Education in Adolescent Health (LEAH) - UAB SOM 	<ul style="list-style-type: none"> Children's of Alabama University of Alabama at Birmingham, Department of Pediatrics University of South Alabama Alabama Medicaid Agency ALL Kids Blue Cross Blue Shield Alabama Department of Public Health American Academy of Pediatrics
<p>Practice</p> <ul style="list-style-type: none"> 234,136.00 patient visits 0 – 18 years in 2020 59% of patients covered by Medicaid[B1] 10% of Alabama's 9-12 year olds cared for by participating practices 		

Content Experts – Tamera Coyle-Beasley, MD, MPH: Professor of Pediatrics, Division Director, UAB Adolescent Medicine; David Kimberlin, MD: Professor of Pediatrics, UAB Pediatric Infectious Diseases; Marietta Vazquez, MD: Professor of Pediatrics, Yale University School of Medicine; Gregory Zimet, PhD, HSPP: Professor of Pediatrics and Clinical Psychology, Indiana University; Heather Taylor, MD, FAAP, Professor of Pediatrics and Director of Undergraduate Medical Education at the University of Alabama

Appendix 4 - Key Driver Diagram



Specific Aims

By August 2022 we will

- increase HPV vaccine completion for 9- to 12-year-olds by five percent over practice baseline.
- Increase Tdap and MenACWY vaccine completion for 11- to 12-year-olds by five percent over practice baseline

Global Aim

The global aim for #StayWell2022 is to ensure teens are fully vaccinated by age 13.

Key Driver Diagram

KD1: The practice has reliable methods to collect and analyze population data for the teen vaccines

KD2: The practice maximizes opportunities for vaccine completion

KD3: The practice uses evidence-based strategies to communicate the importance of vaccine completion

Change Concepts + Interventions

- Identify a practice physician and staff champion to track and act upon population data
- Maintain system(s) to track teen vaccines
- Utilize State Immunization Registry
- Standardize immunization data

- **Reduce Missed Opportunities**
 - Practice has standardized vaccine schedule
 - Vaccinate for HPV at ages 9 and 10
 - Vaccinate at all visits – acute, chronic and well
 - Vaccinate siblings at visits
 - Use standing orders and protocols
 - Huddle daily to communicate vaccine opportunities
 - Utilize provider prompts- EHR pop-ups, manual alerts
 - Provide routine feedback on provider vaccine completion
 - Defer vaccines only for true contraindications and precautions
 - Know vaccine ingredients to avoid unnecessary deferrals for allergy concerns
- **Reminder/Recall**
 - Test to identify best reminder/recall method(s): advance scheduling, text, social media, website, email, phone call, portal
- **Create Additional Vaccination Opportunities**
 - Offer family friendly office hours
 - Incentivize vaccinations (raffles, gift cards)
 - Work with schools

- Strong provider recommendation
- Apply evidence-based messaging for vaccine hesitancy (shared decision making)
- Create a vaccine supportive culture
- Public facing display of practice support for vaccines
- Educate staff on vaccine importance to practice
- Create youth and family advisories to inform practice workflows
- Project an adolescent-friendly office

Key Driver 1 *Manage Population* – the practice has reliable methods to collect and analyze population data for the teen vaccines

Change Concept	Interventions
Physician and staff champion	<ul style="list-style-type: none">• Identify a practice physician and staff champion to track and act upon population data
Maintain system(s) to track teen vaccines	<ul style="list-style-type: none">• Evidence for using Immunization Information Systems (IIS)
Utilize state immunization registry	<ul style="list-style-type: none">• ImmPRINT Manual
Immunization registry tips	<ul style="list-style-type: none">• Standardize immunization Data Entry to minimize duplication and accurately reflect race and ethnicity• Standardize MOGE (moved or gone elsewhere) registry maintenance• Standardize frequency to run data reports to assess vaccine completion and identify outreach opportunities• Reconcile data from available registries (ImmPRINT, Payer (AMA and BCBS), practice EHR• Include registry tasks in job descriptions• A VFC Providers Guide to Success

Key Driver 2 *Effective Workflow for Immunization Completion -- the practice maximizes opportunities for vaccine completion*

Change Concepts	Interventions
Reduce missed opportunities	
Practice has a standardized vaccine schedule	<ul style="list-style-type: none"> Practice has a standardized vaccine schedule updated annually to reflect ACIP schedule
Vaccinate for HPV at 9 and 10	<ul style="list-style-type: none"> Why AAP recommends initiating HPV vaccination as early as age 9
Vaccinate all visits – acute, chronic and well...	<ul style="list-style-type: none"> Giving vaccines with mild illness CDC Protocol example
Vaccinate siblings at visits	<ul style="list-style-type: none"> Have protocol to register siblings at patient check in
Use standing orders and protocols	<ul style="list-style-type: none"> 10 steps to implement standing orders in your practice Using standing orders for administering vaccines HPV standing order MenACWY standing order Td/Tdap standing order COVID-19 standing order Medical management of vaccine reactions QI example standing order focus QI example standing order PDSA Cycle 1 QI example standing order PDSA Cycle 2
Huddle daily to communicate vaccine opportunities	<ul style="list-style-type: none"> AAP Team Huddle
Utilize provider prompts -- EHR pop-ups, manual alerts	<ul style="list-style-type: none"> Vaccination programs provider reminders
Provide routine feedback on provider vaccine completion	<ul style="list-style-type: none"> Run EHR reports or a chart audit based on completion by provider compared to practice
Defer vaccines only for true contraindications and precautions	<ul style="list-style-type: none"> CDC contraindications and precautions IAC checklist for contraindications
Know vaccine ingredients to avoid unnecessary deferrals for allergy concerns	<ul style="list-style-type: none"> Vaccine excipient table CDC Pinkbook

Key Driver 2 *Effective Workflow for Immunization Completion -- the practice maximizes opportunities for vaccine completion*

Change Concepts

Interventions

Reminder/Recall

Test to identify best reminder/recall method(s):
advance scheduling, text,
social media, website,
email, phone call, portal

- Schedule next visit when immunization due before leaving office
- [Reminder systems and strategies for increasing childhood vaccination rates: AAP Reminder Recall Systems](#)

Create additional vaccination opportunities

Offer family-friendly office hours

- Offer vaccines weekends, evening, same day shot only appointments

Incentivize vaccinations
(raffles, gift cards)

- [Family incentive rewards](#)

Work with schools

- Encourage schools to message families that sports physicals do not replace well visits
- Develop a relationship with school nurses

Key Driver 3 *Effective Two-Way Communication to Support Vaccine Completion* -- The practice uses evidence-based strategies to communicate the importance of vaccine completion

Change Concept	Tools and Resources
<p>Strong provider recommendation</p> <p>Apply evidence-based messaging for vaccine hesitancy (shared decision making)</p>	<ul style="list-style-type: none"> • Unity Provider Pocket Guide • Unity's 3Cs Initiative using vignettes demonstrating addressing hesitancy with MI techniques • Communication skills for COVID vaccine • Immunization Action Coalition Talking About Vaccines • NIH-Effective Messaging in vaccine promotion <ul style="list-style-type: none"> • Does correcting myths about flu vaccines work • Failure of three pro-vaccination strategies • Vaccine Messaging Guide Yale/UNICEF • Equity and Hesitancy
<p>Create a vaccine-supportive culture</p> <p>Public facing display of practice support for vaccines</p> <p>Educate staff on vaccine importance to practice</p>	<ul style="list-style-type: none"> • Inform families of #StayWell2022 QI project and progress • Parent/Teen Resources in multiple languages <ul style="list-style-type: none"> • Unity • Vaccine Information You Need (Immunization Action Coalition) • CHOP Parents PACK • CDC PreTeen and Teen Vaccine Resources • Families Fighting Flu • Campaign Toolkits for social media, websites, bulletin boards <ul style="list-style-type: none"> • CDC Lets Play Catch-up • AAP Immunization Campaign Toolkit • HHS Catch Up campaign social media • AAP #CallYourPediatrician Campaign toolkit • Celebrate National Immunization Awareness Month (NIAM) August each year CDC • Stock Photos <ul style="list-style-type: none"> • CDC Public Health Image Library • Open Stock teen photos <ul style="list-style-type: none"> • Strengthening Vaccine Confidence (webinar for office) • Role of nurses in HPV Vaccinations • 10 Ways to Create a Culture of Immunization in Pediatric Practice • COVID-19 Vaccination Communication Toolkit to promote confidence among healthcare providers
<p>Create youth and family advisories to inform practice workflows</p> <p>Project an adolescent friendly office</p> <p>Establish a family advisory</p> <p>Establish a teen advisory</p>	<ul style="list-style-type: none"> • Invite youth to complete a clinical environment assessment tool for your office <ul style="list-style-type: none"> • NICHQ Family Engagement Guide • AAP Family Engagement Guide for the Patient-Centered Medical Home • Enhancing Family engagement through QI <ul style="list-style-type: none"> • Creating and sustaining a youth advisory council • Establishing a youth advisory council

Appendix 5 - #StayWell2022 Teen Vaccine Timeline

