



AMERICAN ACADEMY OF
FAMILY PHYSICIANS

STRONG MEDICINE FOR AMERICA

American Academy of Family Physicians Child and Adolescent Immunization Office Champions Project

Final Report

Revised September 3, 2014

This project was supported by an educational grant from Merck & Co., Inc.

Project Goal

Develop and implement an Immunization Office Champions program designed to increase child and adolescent immunization rates in 20 family physician practices.

Project Objectives

To educate physician champions, office champions, and staff in 20 family physician practices about effective strategies for increasing immunization rates. Key areas addressed in this project included the following:

- Improving strong recommendations for child and adolescent immunizations
- Reducing missed opportunities to immunize
- Increasing parental awareness and acceptance of vaccines, including addressing myths and misconceptions
- Implementing evidence-based practices to improve vaccine coverage, such as the use of standing orders; changes in practice flow and procedures; and the use of immunization information systems (IIS) and reminder/recall systems

Overview of the Project

Developing vaccines and providing immunizations are two of the greatest public health achievements of all time. Child and adolescent immunization data indicate that coverage levels have increased, but there is wide variation at the state and local levels. Family physicians have reported numerous barriers to providing all necessary immunizations to these populations. This project piloted a model program designed to help family physicians improve immunization rates for these populations, with the goal of expanding such efforts based on what was learned from this project.

Project Methodology

The Office Champions Project model is a multi-faceted performance improvement approach that aims to educate family physicians and their practice staff about effective strategies for increasing child and adolescent immunization rates. The project utilized a comprehensive educational approach consisting of three elements:

- **Practice Assessment and Implementation of Intervention(s):** Each practice will assess their baseline immunization rates for children and adolescents and select one or more of the interventions recommended by the Community Preventive Services Task Force to address immunization shortfalls. The practice will implement identified interventions for improvement, then reassess and reflect on what was learned. The American Academy of Family Physicians' (AAFP's) Childhood Immunizations METRIC module and Adolescent Immunizations METRIC module were used to facilitate performance improvement.
- **Practice Manual:** An evidence-based practice manual was developed for each practice to help guide the performance improvement activities. The manual could be customized by each practice and included patient resources, templates, and guidance on increasing child and adolescent immunizations. Information in the manual was continually updated based on new guidance and data.

- **Ongoing Support for the Champions:** Ongoing project support was provided by AAFP staff, advisors, and immunization content experts. This included a facilitated learning community with a dedicated webpage and listserv, teleconference training, webinars, and focused discussions with immunization content experts from the AAFP and the Centers for Disease Control and Prevention (CDC). The following served as important resources for the project champions:
 - AAFP's immunization webpage: www.aafp.org/office-champions-immunizations
 - AAFP's patient education website: familydoctor.org
 - CDC's immunization website:
 - www.cdc.gov/vaccines/?s_cid=cdc_homepage_topmenu_002
 - www.cdc.gov/vaccines/imz-managers/laws/state-reqs.html
 - www.cdc.gov/vaccines/imz-managers/lists-codes.html
 - www.cdc.gov/vaccines/schedules/hcp/imz/child-adolescent.html
 - www.cdc.gov/vaccines/hcp/patient-ed/conversations/index.html

Practice Recruitment

Practice recruitment efforts began in February 2013 with a call for applications for the project. Seventeen states with the lowest completion rate of the three-dose human papillomavirus (HPV) vaccine were targeted in the recruitment efforts, but other states were selected as well. The project announcement was distributed to the following:

- AAFP members and chapters through AAFP communication channels
- Association of Family Medicine Residency Directors (AFMRD) listserv members
- AAFP Vaccine Science Fellows
- Social media outlets, including Twitter and Facebook

To be considered for the Office Champions Project, practices agreed to the following:

- Physician champion would complete the AAFP's Childhood Immunizations METRIC and Adolescent Immunizations METRIC performance improvement modules.
- Office champion would complete the office champions training program, including a Collaborative Institutional Training Initiative (CITI) course on Human Research Subjects; attend teleconferences; and review a practice manual.
- Physician champion or office champion would present an overview of the Office Champions Project to the practice's physicians and staff at a staff meeting in June or July 2013.
- Physician champion and office champion would identify and implement system changes to better integrate child and adolescent immunization activities into the practice's daily office routines and to create a culture that encourages immunizations.
- Office champion would be allocated adequate time, resources, and support to fulfill the responsibilities of the champion role.
- Practice would participate in all phases of program evaluation, including chart reviews and surveys.

"This project opened up my eyes and forced our practice to look and see how we were doing on immunizing patients. The numbers were surprising."

-2013-14 Office Champions Project participant

Along with recruiting practices through emails and social media, project staff exhibited at the AAFP's Annual Leadership Forum (ALF) and National Conference of Special Constituencies (NCSC) to attract additional applicants.

In all recruitment materials, practices were made aware that—in addition to receiving the training, the METRIC modules, and evidence-based immunization materials—upon completion of the project requirements, the practice would receive \$3,000 to help defray administrative costs, along with recognition on AAFP.org and in materials distributed at AAFP conferences.

In addition, practices that completed the project would receive recognition items that included the following:

- A certificate for their office champion and the practice indicating that they were recognized by the AAFP for excellence in child and adolescent immunizations
- A press release to send to their local newspaper
- An article for their patient newsletter
- Tips on publicizing their project completion and champion status
- Tips for holding a recognition ceremony for staff

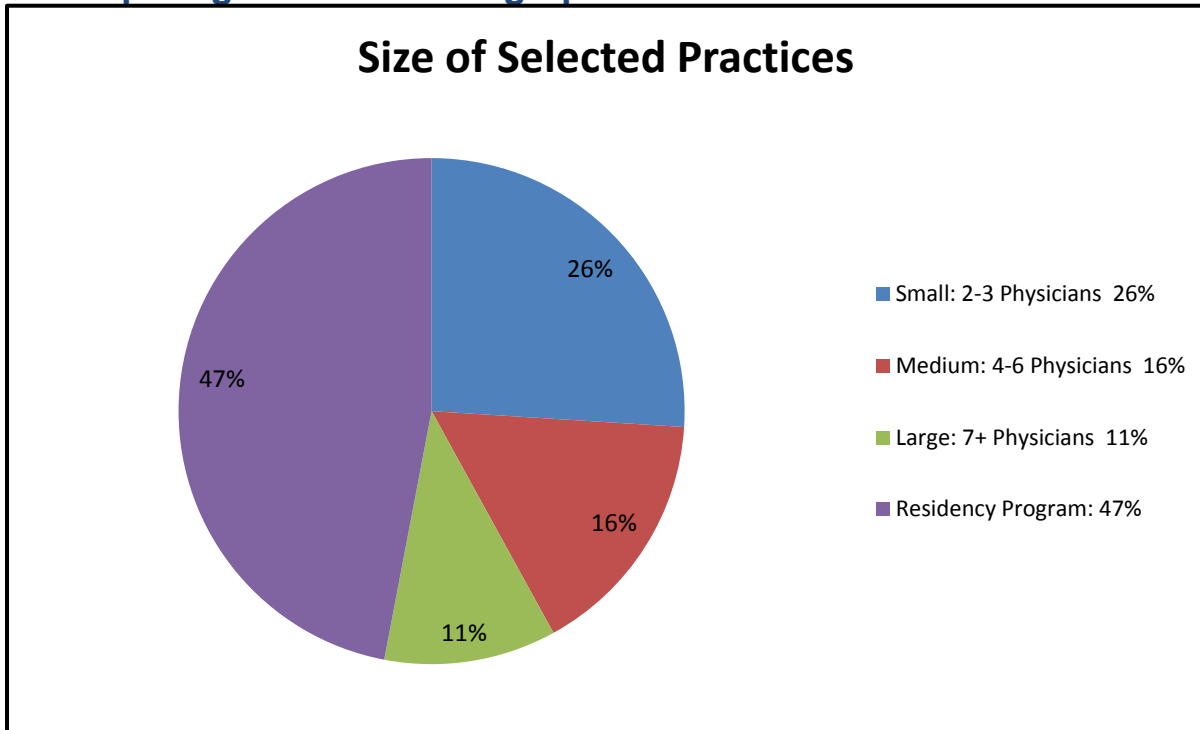
Thirty-eight applications were received during the recruitment phase. Twenty practices were selected to ensure a wide geographic representation that included a range of practice types and sizes and a variety of practice settings. The 20 selected practices were located in 14 different states. All 14 states had low coverage of three or more doses of the HPV vaccine, and 13 of the 14 states were below the national coverage rate of 35%. The selected practices were announced in April 2013, project training took place in May 2013, physicians began the METRIC modules in June 2013, and project implementation began in July 2013 and concluded on December 13, 2013. (Note: Nineteen practices completed the project. All information in this report is based on those 19 practices, with the exception of Stage C [post-project] results, which are based on 18 practices.)

The office champions performed a variety of roles in their practices, including program director, clinic administrator/manager, nursing supervisor, registered nurse, licensed practical nurse, medical assistant, pharmacist, physician, and director of quality improvement. The office champion worked closely with the physician champion and practice staff in facilitating the overall project goals and served as the focal point for educating other staff on issues related to immunizations. This function was particularly important in sharing key information to dispel misconceptions about vaccines, specifically the HPV vaccine.

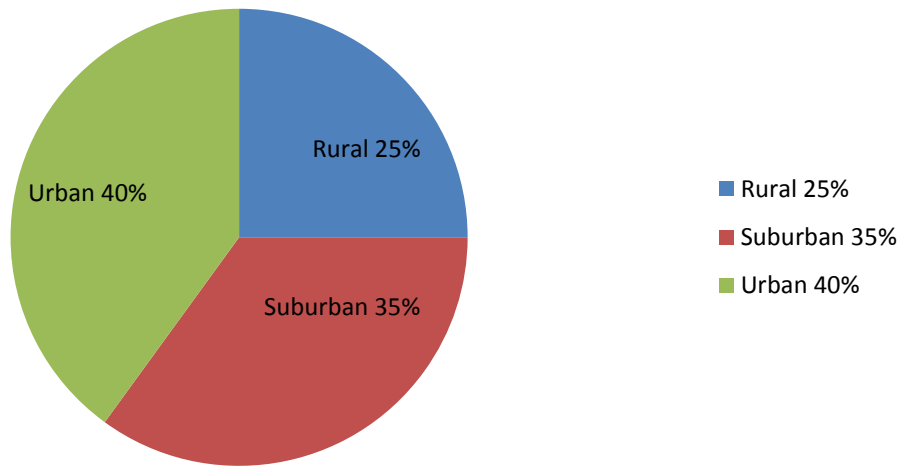


The Office Champions Project kickoff was held in May 2013 with a teleconference/webinar training session with all 20 practices participating. A project kit was mailed to each practice; it included the practice manual, immunization resources, immunization stickers, tent cards for practice exam rooms and waiting areas, and a letter recognizing the practice's involvement in this performance improvement activity. A focused training session on the use of the Childhood Immunizations METRIC and Adolescent Immunizations METRIC modules was conducted by AAFP staff.

Participating Practice Demographics



Setting of Selected Practices



Project Timeline

2013

February/March: Recruitment of practices

April: ALF/NCSC: Recruitment and exhibit
Applications due; practices selected and announced
Online learning community established

May: Materials mailed to the selected practices
Training teleconferences held
Physician champions complete pre-project survey

June/July: Physician champions begin METRIC modules
Complete pre-project chart review and submit implementation plans
1:1 phone calls with office champions
Staff meeting with practice team
First payment to practices for completing training requirements

August: Begin implementation
Quarterly teleconference held

September: Ongoing technical assistance
AAFP Assembly: Office Champions Project presentation by
Chris Lupold, MD, FAAFP

October: Ongoing technical assistance
Site visits

	1:1 phone calls with office champions and physician champions
November:	Ongoing technical assistance Society of Teachers of Family Medicine (STFM) Conference on Practice Improvement: Presented poster on Stage A data and disseminated materials Quarterly teleconference held
December:	Implementation complete Complete post-implementation chart review
2014	
January/February:	Physician champions complete post-project survey Second payment to practices
March:	1:1 phone calls with physician champions
April/May:	Third payment to practices for completing all requirements Recognition items and final report sent to all practices
June/July:	Final data analysis for completion of report Dissemination of project results via AAFP communication channels



Project Materials

In May 2013, each practice was sent a package of project materials that comprised the following:

- *AAFP Child and Adolescent Immunization Office Champions Project Practice Manual*
- Patient education information
- Immunization posters
- AAFP Immunization Office Champions Project tent cards, lanyards, tumblers, and memo cubes
- "Up to Date? Vaccinate!" pens and pencils
- AAFP/CDC/American Academy of Pediatrics (AAP) Provider Resources for Vaccine Conversations with Parents toolkit
- Laminated 2013 recommended childhood, adolescent, and catch-up immunization schedules
- Immunization stickers
- "Up to Date? Vaccinate!" lapel pins



Dana Granberg, MD, FAAFP, Physician Champion
Barry Pointe Family Care, Kansas City, MO

Physician Champions and Office Champions Training

Physician champions and office champions were required to review the *AAFP Child and Adolescent Immunization Office Champions Project Practice Manual*. Physician champions were required to complete the AAFP's Childhood Immunizations METRIC and Adolescent Immunizations METRIC modules; review and report data from 25 child patient charts and 25 adolescent patient charts; submit their practice's implementation plan; and have a meeting in June 2013 with their clinic staff. Practices were also required to participate in three teleconferences. During the first teleconference, AAFP staff provided an overview of the project and the METRIC modules, including specifics on how to implement the project and details on expectations and deadlines. The second teleconference was a general immunization update presented by advisory member Thomas F. Koinis, MD, FAAFP. The third teleconference was a presentation on HPV and the HPV vaccine by Jill B. Roark, MPH, a health communication specialist with the National Center for Immunization and Respiratory Diseases (NCIRD)/CDC, entitled "You are the Key to HPV Cancer Prevention." All teleconferences ended with a question-and-answer session.

"This project made our residents more aware of vaccines and got them looking [at] and thinking about immunizations when interacting with patients."

-2013-14 Office Champions Project participant

Pre-Project Chart Review and Implementation

The pre-project chart review was due at the end of June 2013. Physician champions completed the pre-project chart review during Stage A of the AAFP's Childhood Immunizations METRIC and Adolescent Immunizations METRIC modules. The practices reviewed 25 child patient

charts and 25 adolescent patient charts that met the inclusion criteria for the project. For each patient chart, the physician champion looked at whether the child/adolescent had received all immunizations for which he or she was eligible. Chart review data were entered into the METRIC modules, which calculated immunization rates and comparison benchmarks with peer groups and national data.

The METRIC modules compared the family medicine project teams' percentages against their national peers. The pre-project chart review data revealed the following (averages of all 19 project teams):

Childhood Immunizations (Stage A – Pre-Intervention)

	<u>Project Teams</u>	<u>Peers</u>
DTap	88%	89%
IPV	96%	95%
MMR	93%	96%
Hib	96%	95%
HepB	94%	94%
Varicella	88%	94%
PCV	85%	86%
HepA	59%	63%
Rotavirus	70%	68%
Influenza	50%	48%

Adolescent Immunizations (Stage A – Pre-Intervention)

	<u>Project Teams</u>	<u>Peers</u>
MCV	59%	65%
Tdap	81%	86%
HPV Females ≥1 dose	51%	50%
HPV Females 3 doses	20%	26%
HPV Males ≥1 dose	23%	23%

HPV Males 3 doses	6%	8%
Influenza	30%	39%

“The systems changes we made were not difficult, and this project helped us communicate as a group more effectively about vaccines.”

-2013-14 Office Champions Project participant

Selected practices were asked to submit their implementation plans by July 1, 2013. The METRIC modules provided opportunities for the physician champion and office champion to learn about potential system changes and performance improvement strategies. The practice manual provided additional strategies and concepts for improvement. Each practice developed an implementation plan to address specific areas for improving immunization rates. The pre-intervention practice immunization data were used to inform the overall improvement process for implementing intervention strategies.

Common themes and strategies of the implementation plans included the following:

- Recordkeeping and immunization information
- Recommendations and reinforcement (strong physician recommendations)
- Reminder and recall (patients and providers)
- Reduction of missed opportunities and reduction of barriers to implementation

Practices implemented their system changes between July 1, 2013, and December 1, 2013.



Office Champions Project staff
Barry Pointe Family Care, Kansas City, MO

Post-Project Chart Review and Program Evaluation

Nineteen of 20 practices completed the project and received their administrative payments. Qualitative and quantitative data were collected to evaluate the materials, the Office Champions Project model, and the level of success for system changes implemented within the practices.

Post-Project Chart Review

During Stage C of the METRIC modules, after implementation concluded, practices were asked to review data from another 25 child patient charts and 25 adolescent patient charts. The Physician champions were asked to follow the same process and answer the same questions as in the pre-project chart review and to enter their answers into the METRIC modules. This reassessment was completed successfully by the practices, and it identified opportunities for performance sustainment.

*"Because of this project...bringing awareness of vaccines to our practice, our residents are consistently [immunizing] adolescents at every opportunity."
-2013-14 Office Champions Project participant*

Post-Project Chart Review Results

The METRIC post-project chart reviews revealed the following results (average of 18 project teams). Percent changes from baseline are noted in red.

Childhood Immunizations (Stage C – Post-Intervention)

	<u>Project Teams</u>	<u>Peers Comparison</u>
DTap	87% -1.14%	89% no change

IPV	90%	-6.25%	95%	-1.05%
MMR	94%	1.08%	96%	no change
Hib	92%	-4.17%	95%	no change
HepB	92%	-2.13%	95%	1.06%
Varicella	90%	2.27%	95%	1.06%
PCV	85%	no change	87%	1.16%
HepA	63%	6.78%	67%	6.35%
Rotavirus	71%	1.43%	77%	13.24%
Influenza	51%	2.00%	53%	10.42%

Adolescent Immunizations (Stage C – Post-Intervention)

	<u>Project Teams</u>		<u>Peers Comparison</u>	
MCV	73%	23.73%	77%	18.46%
Tdap	91%	12.35%	91%	5.81%
HPV Females ≥1 dose	64%	25.49%	60%	20.00%
HPV Females 3 doses	23%	15.00%	28%	7.69%
HPV Males ≥1 dose	46%	100.00%	40%	73.91%
HPV Males 3 doses	11%	83.33%	13%	62.50%
Influenza	38%	26.67%	52%	33.33%

DARTNet Institute Control Group

For analysis purposes to determine performance improvement outcomes, immunization data were obtained from primary care practices in the DARTNet Institute. The DARTNet Institute (www.dartnet.info/default.htm) is a rapidly growing collaboration of practice-based research networks that are building a national collection of data from electronic health records (EHRs), claims, and patient-reported outcomes. The networks blend quality improvement, effectiveness, and translational research with a data-driven learning system. The DARTNet Institute has the ability to query clinical data across the boundaries of practices and organizations in order to examine clinical care of very large, geographically diverse populations.

The DARTNet Institute’s control data for the project came from a group of randomly selected practices who were not involved in the AAFP’s Office Champions Project. Immunization data from these practices were obtained for the pre- and post-chart review time periods in order to provide a basis of comparison for the practices in the AAFP’s Office Champions Project. It should be noted that the control practices are part of health systems that have EHRs and immunization registries. The physicians and practice teams receive decision support reports that include patient-specific clinical data from their systems. The control group data from DARTNet revealed some improvements in immunization rates during the project time period.

DARTNet Control Group - Childhood Immunizations

	<u>Pre-</u>	<u>Post-</u>	<u>% Increase over Baseline</u>
DTaP	97.0%	97.0%	
IPV	96.0%	97.0%	1.0%
MMR	90.0%	95.1%	5.6%
Hib	97.0%	97.0%	
HepB	96.0%	97.3%	1.3%
Varicella	88.8%	94.2%	6.1%
PCV	96.5%	97.9%	1.4%
HepA	89.0%	92.0%	3.3%
Rotavirus	31.5%	44.6%	41.6%
Influenza	49.8%	20.2%	

DARTNet Control Group - Adolescent Immunizations

	<u>Pre-</u>	<u>Post-</u>	<u>% Increase over Baseline</u>
MCV	79.4%	74.5%	
Tdap	84.2%	87.0%	3.3%
HPV Females ≥1 dose	46.4%	49.4%	6.5%
HPV Females 3 doses	18.8%	25.3%	34.6%
HPV Males ≥1 dose	30.6%	39.0%	27.5%

HPV Males			
3 doses	7.6%	17.2%	126.3%
Influenza	30.2%	21.5%	

Online Pre- and Post-Project Survey

In May 2013 and January 2014, physician champions were asked to complete an online practice survey to evaluate the overall effectiveness and sustainability of the Office Champions Project. The answers were compared and reviewed for statistically significant changes using a paired samples t-test ($P < .05$). The following results were statistically significant:

Do you currently use (which allow non-physician clinical personnel to administer immunizations to patients without direct physician involvement at the time of the visit) in your office for children and adolescents?

<i>Standing Orders</i>	Pre-Project Survey:	Post-Project Survey:
Yes	50%	79%
No	45%	21%
Don't Know	5%	0%

In all exam rooms, do you post the current U.S. recommended immunization schedules?

	Pre-Project Survey:	Post-Project Survey:
Yes	0%	37%
No	100%	63%
Don't Know	0%	0%

Are your nursing and office staff trained to know how to determine valid and invalid contraindications to vaccinations, such as minimum intervals permissible between vaccinations?

	Pre-Project Survey:	Post-Project Survey:
Yes	60%	95%
No	30%	0%
Don't Know	10%	5%

Do you have a reminder and recall system in your practice to contact all patients who are due for vaccinations?

	Pre-Project Survey:	Post-Project Survey:
Yes	5%	41%
No	90%	59%

Don't Know	5%	0%
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How comfortable do office staff feel discussing vaccine safety concerns with patients/parents?

Pre-Project Survey:

"Very Comfortable"	15%
"Comfortable"	35%
"Not very comfortable"	45%
"Not at all comfortable"	5%

Post-Project Survey:

"Very Comfortable"	21%
"Comfortable"	63%
"Not very comfortable"	16%
"Not at all comfortable"	0%

1:1 Physician Champion Phone Survey

During March 2014, physician champions were interviewed by phone about the usefulness of the training items and project materials in helping their practices identify and make system changes, as well as about other specific interventions of the project. They also were asked for comments and feedback about the project.

Physician champions responded that the project materials were useful in helping to identify and make system changes in their practices. The following materials were identified as the most useful:

- *AAFP Child and Adolescent Immunization Office Champions Project Practice Manual*
Laminated 2013 recommended childhood, adolescent, and catch-up immunization schedules
- AAFP/CDC/AAP Provider Resources for Vaccine Conversations with Parents toolkit

*"As a physician, I am now changing how I talk about the HPV vaccine. I now tell patients it is a 'cancer-preventing immunization,' and this has been very effective."
-2013-14 Office Champions Project participant*

Barriers practices encountered in implementing changes in practice included the following:

- Competing demands
- Lack of time (i.e., too busy)
- Technology challenges
- Lack of staff buy-in

Practices also experienced interruptions due to the temporary shutdown of the U.S. government in October 2013.

Additional barriers included the following:

- Inadequate length of implementation period
- Information technology (IT) issues
- Need to change the practice mindset of not giving immunizations to ill children
- Lack of 25 qualifying charts for the post-project chart review in some practices
- Tdap shortage in the summer of 2013
- Hib vaccine shortage in 2013

- Influenza vaccine stock problems for both private pay and Vaccines for Children (VFC) program

Constructive comments received included the following:

- Allow a longer implementation plan (i.e., a minimum of one year) and include additional practices
- Allow all physicians in the practice to complete the METRIC immunization modules, which may allow for improved buy-in from all physicians
- Implement a project targeting only residencies; train them on immunizations and provide them with specific strategies
- Apply the Office Champions Project model to other areas and work on them simultaneously (e.g., adult immunizations, diabetes, hypertension, breastfeeding, childhood obesity)

Practice Recognition

Recognition items, as described in the application, were mailed to all participating practices. A list of the selected practices and results will be distributed at the 2014 AAFP Assembly. Practices have been encouraged to disseminate their project results in local news venues and patient newsletters. Specific press releases and sample news articles have been provided to the practices to help with dissemination efforts.

“The best thing about this project is it forces you to take action.”
-2013-14 Office Champions Project participant

Dissemination Activities

Project results will be disseminated to AAFP members to facilitate adoption of key immunization strategies for increasing child and adolescent immunization rates. The AAFP will take advantage of appropriate venues for reporting lessons learned to key audiences.

Preliminary project results were presented at the STFM Conference on Practice Improvement in November 2013. A roundtable panel discussion—during which the project results were disseminated and key improvement strategies were shared—also was held at this conference. The final project results will be presented in a lecture format at the 2014 Conference on Practice Improvement, scheduled for December 4-7, 2014. In addition, the strategies and lessons learned from this project will be included in a presentation at the 2014 National Immunization Conference, scheduled for September 29-30, 2014.

The final project results will be disseminated via AAFP communication channels, such as the electronic news publication (*AAFP News*), the chapter executive listserv and newsletter, and the AAFP’s social media channels.

Summary and Key Findings

The post-project chart review data for child immunizations revealed fairly flat results. There were slight increases and decreases in rates, and three measured immunization rates showed no change. This was not a surprise because the practices’ pre-project chart review numbers were overall quite high. However, there was a 6.78% increase in HepA, and there were slight increases in Varicella (2.27%), Rotavirus (1.43%) and MMR (1.08%). It appears there were already processes in place for assessing and administering child immunizations in the practices involved in the project.

The post-project chart review data for adolescent immunizations revealed an increase over baseline in each immunization measured. These changes over baseline ranged from 12.35% (Tdap) to 100% (HPV Males ≥ 1 dose). The data suggest—as noted by the increases in immunization rates compared to the baseline—that the Office Champions Project performance improvement model and implementation of strategies to create system changes played a key role in affecting changes in the practices' immunization rates for their patients.

In addition to the individual practices conducting a quality improvement project utilizing the AAFP's METRIC modules, qualitative survey data indicate that the physicians and practice staff were significantly more comfortable discussing vaccine concerns with patients and understanding the contraindications for specific vaccine administrations. Parental and patient vaccine hesitancy continues to be a factor in the acceptance of vaccines, and family physicians play an important role in discussing the benefits and risks of immunizations. The physician's strong recommendation for immunizations to parents/patients was a primary focus in learning community interactions among the project champions and the advisory group of family physician experts. The AAFP/CDC/AAP Provider Resources for Vaccine Conversations with Parents toolkit provided excellent resources for understanding concepts related to communicating the benefits and risks of immunizations. Using standing orders and reminder/recall systems, and posting the recommended immunization schedules in patient exam rooms were also important interventions that were implemented and helped to achieve successful outcomes.

Data from this project indicate that the following tools were considered most helpful:

- *AAFP Child and Adolescent Immunization Office Champions Project Practice Manual*
- Laminated 2013 recommended childhood, adolescent, and catch-up immunization schedules
- AAFP/CDC/AAP Provider Resources for Vaccine Conversations with Parents toolkit

"This project was excellent, and I have really enjoyed the process. I feel our patients will benefit greatly."

-2013-14 Office Champions Project participant

Next Steps

The final project report and materials will be posted on AAFP.org for dissemination to family medicine practices nationwide. Future efforts will seek to obtain funding for using the Office Champions Project model to increase immunizations and other clinical preventive services across a patient's lifespan. This model of performance improvement has been shown to be effective and will also be utilized for other population health activities.

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