| Title: Immunization Strategy in a Large Integrated Health System  
**Author(s):** Tracy Bieber, Sanford Health |

Sanford Health has created a formal Immunization Strategy Office as we strive to be a local and national leader in Immunization related efforts. The Enterprise Immunization Strategy Leader is accountable to enterprise-wide immunization standardization efforts across the Sanford Health footprint. The Healthy People 2020 goals are the foundation for our immunization strategy plan which is largely focused on creating a sturdy and well-constructed infrastructure and organizational philosophy on immunization practices.

The key initiative that Sanford is focusing on for 2017-2018 is creating a VAX Champ program that will train nurses in all Sanford clinics that administer vaccines. This program will develop a content expert within each clinic that will be an educational resource who will also help provide standardization across our enterprise.

Sanford’s strategic plan and immunization-focused resources are the foundation behind Sanford’s success in enhancing vaccination rates in our communities and becoming a national leader within the immunization realm.

| Title: PCV13 Immunization Project  
**Author(s):** JoAnn Douglas, Wake County Human Services |

A project to initiate Pneumococcal Conjugate (PCV13) immunization to patients receiving health services at the HIV clinic at the Wake County HD. Immunization with PCV13 had been deferred due to the high price of the vaccine. The project immunized medically eligible patients as: New patient (vaccine naïve), 12 months since last dose of PPSV23, CD4 count > 200.

Immunization initiated on April 1, 2016 to eligible patients 50 years and up, and to other medically eligible patients. Project utilized patient assistance program “Pfizer Rx Pathways” to replace doses to uninsured patients. PCV13 is not covered by ADAP patient assistance program. Electronic Medical Record and Immunization Registry technology were utilized during this project.

584 of 1,200 clinic patients received PCV13.

Data reflects doses provided between April 1, 2016 and February 1, 2017. 66 % of doses provided between April 1 and August 31, 2016.

PCV13 immunization continuing.
Title: Adult Vaccination: Analysis of Consumer Attitudes, Perceptions, Beliefs, and Barriers
Author(s): Aparna Ramakrishnan¹,², Judith Weiner¹,², Michelle Basket², Carla Black², Xin Yue², Anup Srivastav², Allison Fisher² ¹Northrup Gurnman ²CDC

Given the high burden of illness among adults, a number of vaccines are recommended throughout adulthood based on age, health conditions, and other risk factors. Unfortunately, adult vaccination rates remain low and are below Healthy People 2020 targets. Low adult vaccination rates are due to many practice and systems level challenges, as well as missed opportunities during healthcare visits and limited understanding of recommended vaccines among the general public. Addressing these challenges requires strategies across the social ecology, including increasing consumer demand and acceptance.

In order to understand how best to encourage vaccination among adults, CDC has included questions in Porter Novelli Fall Styles national consumer survey between 2012 and 2015 to assess factors related to vaccination behavior and decision-making, including awareness, beliefs, perceived norms, and barriers. This poster will present an analysis of this data including any changes over time, differences by demographic factors, and any nuances by vaccine.

Title: Rates of Commercial and Medicaid Health Plan Non-Payment of Adult Vaccine Dose Claims
Author(s): Robert Goodman¹, Carolyn Bridges², David Kim², Jamison Pike², Angela Rose³, Lisa Prosser³ ¹Blue Care Network ²CDC ³University of Michigan

Purpose: Providers report concerns regarding payment as a barrier to providing vaccines for adults. To address scope of non-payment, we examined rates of vaccine dose non-payment in two managed care populations.

Methods: We assessed administrative data from 2014-2015 from a large commercial and small Medicaid managed care plans, both part of a larger health insurance entity, for rates of vaccine non-payment, defined as a health plan allowed amount of $0, across patient-care settings and insurance types.

Results: Pharmacy submitted vaccine dose non-payment was rare (commercial 1.5%; Medicaid 0%). Among non-pharmacy claims, the physician office was the dominant setting (commercial 79%; Medicaid 69%) with non-payment in this venue more frequent for patients with Medicaid (10.8%) than commercial (2.5%).

Conclusions: Office and pharmacy adult immunization vaccine dose claims are mostly paid, with office-setting non-payment more frequent for Medicaid. While non-payment for a vaccine dose was uncommon, others aspects of vaccine encounter payments, such as vaccine administration, require further exploration.
5  Title: Attributes Important to Physicians in the Decision to Stock Adult Vaccines  
Author(s): Angela Rose¹, Nicole Elmblad¹, Carolyn Bridges², David Kim², Lisa Prosser¹,  
           David Hutton¹ ¹University of Michigan ²CDC  

Purpose: To identify attributes that are most important to physicians in deciding to stock adult vaccines and understand potential barriers to stocking vaccines.  

Methods: Three online focus groups were held. Participants were US physicians (3-5/group) in specialties that typically provide vaccinations and were recruited from the American Medical Association’s Masterfile. Thematic analysis was used to identify key themes.  

Results: Patient out-of-pocket costs and insurance related issues were the most important attributes in the decision to stock vaccines. Inventory costs and reimbursement were also important factors. Physicians with more privately insured and Medicare patients were more interested in reimbursement compared with physicians with a higher percentage of uninsured and Medicaid patients. Competition with pharmacies was not considered to be an important factor.  

Conclusions: Financial implications for their practice and costs for their patients were leading factors in physicians’ decision to stock adult vaccines.  

6  Title: Medicaid Coverage and Cost Sharing for Adult Vaccinations in Fee-for-Service Settings  
Author(s): Alexandra Bhiatti¹, Carolyn Bridges¹ ¹CDC  

Adults need immunizations to protect them from getting and spreading serious diseases. For America’s poorest citizens, Medicaid is the largest source of funding for medical and health-related services, including vaccinations. These individuals generally do not have access to, or cannot afford, employer-based or individual insurance in the private market. Federal Medicaid rules permit each state program to determine which adult vaccines, if any, will be covered, the cost-sharing policy for adult vaccination services, provider reimbursement policy, and the settings where vaccines may be administered. These policy decisions can impact both the personal health status of the enrollee and the public’s health. This poster presentation will describe the scope, methods, and early findings of a comprehensive policy assessment of the vaccination benefit design for adult enrollees in state Medicaid programs, highlighting trends across state Medicaid policies and share early findings on coverage for vaccination benefits and cost-sharing policies.
| 7 | Title: **Healthcare Personnel Vaccination in Michigan’s Long Term Care Facilities: A Statewide Survey of Policies and Practices**  
Author(s): Adam Hart¹, Cristi Bramer¹, Jackie Chandler¹, Courtnay Londo¹  
¹Michigan Dept of Health and Human Services – Division of Immunizations  

The Advisory Committee on Immunization Practices (ACIP) recommends that healthcare personnel (HCP) receive up to 6 vaccines to protect themselves and their patients. HCP in long term care (LTC) settings have the lowest reported influenza vaccination rates among all HCP, with 69.2% coverage in the 2015-2016 influenza season. We sent a web-based survey to 461 licensed LTC facilities in Michigan to assess HCP vaccination policies and practices. The 140 respondents (30.4%) reported minimal HCP vaccine requirements; 25% required annual influenza vaccine, 12.1% Hepatitis B, 12.1% Tdap, 9.7% MMR, 6.5% Varicella, and 1.6% Pneumococcal. Reported barriers to HCP vaccination included lack of knowledge of vaccination benefits and general misinformation. A majority of the facilities (100 of the 114 question respondents) reported staff training or educational programs existed on immunizations, however reported vaccination coverage was low. Many Michigan LTC facilities should consider updating their vaccination policies and assess their HCP vaccine education. |

| 8 | Title: **Bridging the Gap to Vaccinate All Adults**  
Author(s): Janice Houston¹, Karen Donoghue¹  
¹New Hampshire Immunization Program  

Here in New Hampshire we pride ourselves on our meaningful collaborations among many community resources to enhance adult vaccination. It was these relationships that brought the idea to bring private and public together, for the first time, to reach into communities with higher rates of poverty and need. Partnering with the New Hampshire Immunization Program, Walgreens Pharmacy and our Manchester Health Department successfully completed two school-based flu clinics, in two different neighborhoods in New Hampshire’s largest city. Each of these partners allowed us to reach all adults despite insurance status; Walgreen’s serving those with insurance and the Health Department utilizing 317 vaccines to vaccinate uninsured adults. This first venture was a success vaccinating a total of 23 people and dispersing over 600 adult related vaccine materials. Two more future clinics are set up for the end of March with expanded vaccine offerings of Influenza, both pneumococcal vaccines, and Zostervax. |
**Title:** Barriers to Tdap Vaccination During Pregnancy for Mothers of Pertussis Cases <4 Months of Age in California, 2016  
**Author(s):** Rebeca Montalegre Boyte\(^1\), Kathleen Winter\(^1\), Amber Christiansen\(^1\), Anya Gutman\(^1\), Sarah New\(^1\), Sarah Royce\(^1\)  
\(^1\)California Dept of Public Health

Infants have the highest risk of complications and death due to pertussis. To protect them, Tdap is recommended between 27-36 weeks gestation. To identify barriers, local jurisdictions interviewed mothers of pertussis cases < 4 months of age at the time of disease onset in January 2016–February 2017. Prenatal care providers of case-mothers were also interviewed to assess Tdap immunization practices. Of the 99 cases, 55 (56%) mothers and providers were interviewed. Twenty-one (38%) mothers received Tdap; Medi-Cal recipients were less likely to get immunized than privately-insured mothers (26% vs. 62%, respectively). Mothers whose providers stocked Tdap were more likely to be vaccinated than mothers whose providers did not (p<.0001). Reimbursement issues and cost were primary reasons for not stocking. Only 2/13 mothers referred offsite received Tdap. In conclusion, providers not stocking Tdap are not making strong referrals; opportunities to support providers in stocking onsite and making strong referrals are needed.

**Title:** Using the 4 Pillars Practice Transformation Program to Improve Adult Vaccination in a Variety of Settings  
**Author(s):** Mary Patricia Nowalk\(^1\), Richard K. Zimmerman\(^1\), Chyongchiou J. Lin\(^1\), Jonathan M. Raviotta\(^1\), Krissy K. Moehling\(^1\), Sean G. Saul\(^1\), Samantha E. Ford\(^1\), Michael Susic\(^1\)  
\(^1\)University of Pittsburgh, PittVax

The 4 Pillars™ Practice Transformation Program is an online, cost-effective, evidence-based, step-by-step guide to improving primary care adult vaccination. The 4 Pillars™ Program is founded on four key domains: convenient immunization services; communication about the importance and availability of immunization services; enhanced office systems to facilitate immunization; motivation through an office immunization champion. The 4 Pillars™ website includes background on the importance of protecting patients against vaccine-preventable diseases, barriers to increasing vaccination and strategies to eliminate those barriers, and a learning management system that guides participants through the implementation of the program within their offices. Features include learning tools in various formats, customizable intervention strategies and charts for users to track their progress.

The 4 Pillars™ Program has been used successfully by over 100 practices in randomized controlled cluster trials, an American Board of Family Medicine Performance in Practice Module and a 2-year intervention in an integrated delivery network.
<table>
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<tr>
<th>Title: Increasing Practice Information Resources</th>
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<tr>
<td>Author(s): Pamela Carter-Smith, <em>American Academy of Family Physicians</em></td>
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AAFP has implemented the Adult Immunization Office Champions Project, which consist of improving adult immunization rates. One focus of the project is to assess and improve awareness of the uptake of adult vaccines.

As part of the project the AAFP implemented a “Practice Information Survey,” to assess how information is being communicated within the practice and to patients. Baseline results were measured in May 2016 and re-measurement occurred in February 2017 after implementation of interventions.

The data shows the comparison between the baseline and re-measurement results on the following questions: How often family physician gives a strong recommendation, resources given to patients, immunization status reviewed prior to patient’s visit (provider reminders), and reminders to patients to get vaccines (patient reminders). Data availability will be April 2017.

The Office Champions Quality Improvement model a resource developed includes information to address how practices can improve awareness and uptake of adult vaccines.

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<tr>
<th>Title: Immunization Champions, Advocates, and Mentor Program (ICAMP) – Lessons Learned</th>
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<td>Author(s): Karen Tracy, <em>The Gerontological Society of America</em></td>
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The Immunization Champions, Advocates and Mentors Program (ICAMP), developed and implemented by The Gerontological Society of America (GSA), in partnership with the American Pharmacists Association, trains adult immunization providers of many disciplines how to champion rate improvements in their clinical settings. ICAMP seeks to address the disparity between current adult vaccination rates in the US and the Healthy People 2020 goals using NVAC standards, proven tools, and mentoring. Those who wish to improve adult immunization rates have many resources available, as well as evidence based interventions. ICAMP participants who are most successful at championing change are able to 1) identify the specific issues facing their system, 2) address foundational needs such as IT support, and 3) convene interdisciplinary groups to help with various aspects of an improvement plan. Choosing to focus on one vaccine or one small change at a time increases the likelihood of success, as well.
13  Title: **The Quest to Bridge the Know–Do Gap in Adult Immunization through the Implementation of a Statewide Intervention in Community Health Centers**

Author(s): Gabriela Pasat\(^1\), Connie Bohling\(^1\), Anya Gutman\(^1\), Nisha Gandhi\(^1\), Claudia Aguiluz\(^1\), Sarah Royce\(^1\), \(^1\)California Dept of Public Health

The California Department of Public Health (CDPH) implemented interventions that engage community health centers (CHC) to increase adult vaccination coverage and decrease racial/ethnic disparities for routinely recommended adult vaccines. The Vaccines for Adults (VFA) program provides 317-funded vaccines and technical assistance to implement the standards for adult immunization practice to the 460 clinics enrolled. The collaboration with a regional consortium provides focused insight into the mechanisms underlying adult immunization practices in the CHC setting. Process evaluation activities include: administering a survey to consortium clinics (n=10); conducting key informant interviews with VFA sites (n=17); gathering of qualitative data from quarterly progress reports; and analyzing ordering and administration data for VFA sites. The findings are used to: assess the effectiveness of the intervention in meeting its objectives of delivering vaccines to vulnerable populations and creating the infrastructure to enhance adult immunization practices; identify barriers and facilitators of implementation; and improve program quality.

14  Title: **Hepatitis B Vaccination Program Implementation in Settings in Which a High Proportion of Adults Have Hepatitis B-Related Risk Factors – United States 2012–2015**

Author(s): Tureka Watson\(^1\), Carolyn B. Bridges\(^2\), Noele P. Nelson\(^2\), Erin Kennedy\(^2\), Donna M. Feaster\(^3\), Philip E. Reichert\(^4\), Thaddeus Pham\(^5\), Inas Mahdi\(^6\), Boatemaa Nitiri-Reid JD, MPH\(^7\), Edward Wake\(^8\), Judith Leahy\(^9\)

\(^1\)IHRC, Inc. \(^2\)CDC \(^3\)Chicago Dept of Public Health \(^4\)Florida Dept of Health \(^5\)Hawaii State Dept of Health \(^6\)Louisiana Immunization Program \(^7\)Maryland Dept of Health and Mental Hygiene \(^8\)New York City Dept of Health and Mental Hygiene \(^9\)Oregon Health Authority

**Background:** The Advisory Committee on Immunization Practices (ACIP) recommends that adults with HepB-related risk factors (e.g., injection drug use) and adults seen in settings where a high proportion of persons served are at risk for HepB be vaccinated.

**Objectives:** To improve HepB vaccination of high risk adults, CDC funded fourteen local and state health departments (“awardees”: AL, Chicago, FL, KY, LA, MD, MI, NV, NYC, OR, San Antonio, TN, VA, WV) to implement hepatitis B vaccination programs.

**Methods:** Awardees provided CDC with standardized reports regarding vaccination activities, high risk settings partnered with, doses administered, 3-dose-series completion, and program challenges and successes.

**Results:** From September 2012 through September 2015, 161,171 HepB vaccine doses were distributed and 139,110 doses (86.3%) were administered at 418 settings, including correctional facilities. Challenges included incorporating vaccination services and tracking vaccine doses administered in settings without dedicated vaccination staff.

**Conclusions:** Approaches are needed to improve routine incorporation of HepB vaccination services for high risk adults.
Title: What Are the Barriers Preventing Nurses from Promoting Universal Vaccinations to All Adults?

Author(s): Chad Rittle\textsuperscript{1}, Ruth Francis\textsuperscript{2}
\textsuperscript{1}Chatham University \textsuperscript{2}American Nurses Association

Nurse immunization champions are defined as a person or program that improves immunization rates in community clinics and private practices. ANA wants to ensure that nurse champions have the tools necessary to be successful in their immunization practice.

A brief survey was developed and delivered to 6000+ nurses.

The goal is to assess the needs of nurses in these settings and develop programs to aid them in implementing CDC standards leading to full immunization of adults.

The objectives of the survey are to determine: the demographics and practice settings of nurses surveyed; the needs of nurse champions; the barriers preventing them from becoming successful; and resources needed to promote and educate adults about vaccines.

Results are pending and will be presented at the Summit.

Title: Barriers and Motivators for Adult Vaccination in New York City

Author(s): Lindsay Steele\textsuperscript{1}, Edward Wake\textsuperscript{1}, Vivian Huang\textsuperscript{1}, Anita Geevarughese\textsuperscript{1}, Jane R Zucker\textsuperscript{1} \textsuperscript{1}New York City Dept of Health and Mental Hygiene

Objective: To examine knowledge, attitudes and behaviors of New York City (NYC) adults and providers around adult immunization.

Methodology: The NYC Health Department conducted 11 focus groups among adult patients (n=4) and providers (n=7) in February 2016. Patient groups included a general population group and three groups stratified by race/ethnicity. Provider groups were stratified by primary care physicians (n=3), mid-level providers (n=3) and specialty physicians (n=1).

Results: Vaccines were important to patients and providers, but not a top concern. Both groups believed that preventive health is important and immunizations are a critical component. Patients were unaware of or misinformed on recommended immunizations, and expect a vaccination discussion with their providers. Time and cost are significant barriers for providers.

Conclusions: Patient materials with information on recommended vaccines can both educate patients and facilitate discussion with providers. Providers should adopt best practices to effectively recommend, administer and bill for needed vaccines.
Title: Delay in the Integration of CDC’s ACIP Recommendations for Pneumococcal Vaccination in Adults 65+ into Clinical Practice Guidelines

Author(s): Maria J. Tort¹, Scott Vuocolo¹, Erica Chilson¹, Faith Walters¹, Vincenza T Snow¹

¹Pfizer, Inc.

Background: The Centers for Disease Control and Prevention’s (CDC) Advisory Committee on Immunization Practices (ACIP) makes recommendations on pneumococcal vaccination in the adult population. Many medical societies update their pneumococcal vaccination guidelines based on a review of these recommendations. We gathered information on the adult vaccination policies of US medical societies and compared them to current ACIP recommendations.

Methods: Pneumococcal vaccines guidelines of 38 non-governmental recommending bodies were compared to current ACIP pneumococcal vaccination recommendations. A literature review was performed to supplement the information on the medical societies.

Results: A large proportion (>70%) of selected medical societies had not updated their guidelines to reflect current ACIP pneumococcal recommendations for 65+ at the time of this review, even after nearly 3 years since ACIP made the recommendation.

Conclusion: There is a significant delay in the review and incorporation of the CDC-ACIP pneumococcal vaccine recommendations into clinical guidelines of US medical societies.

Title: Initiative to Increase Pneumococcal Vaccination Rates in Rural Georgia FQHC Clinics

Author(s): James Hotz¹, Frances Ferguson¹, Spencer Griggs¹

¹Albany Area Primary Health Care

A group of FQHC clinics in rural Southwest Georgia increased pneumococcal vaccine coverage among patients 65 years and older through a quality improvement pilot using several interventions: population management tool providing monthly feedback; educational seminar for providers and staff; educational materials for patients; standing orders protocol; and physician-led education for vaccine-hesitant patients. Two physician champions, trained by the American College of Physicians, served as project leaders in four clinics; six other participating clinics did not have a champion but were encouraged to use the same interventions.

Results: Pneumococcal vaccination rates rose from 19.9% to 60.1% (n=4,082 patients) in 10 months. The top three performing physicians were from the champions’ clinics and had increases of +90%, +69%, and +62.2%. The bottom three physicians were from non-champion clinics. There was a trend toward increased rates in non-champion clinics during the later months, possibly because of the monthly reports, which allowed peer-to-peer comparisons.
| 19 | Title: **NV'r Miss a Shot: Boosting Nevada’s Adult Immunization Rates**  
Author(s): Heidi Parker, *Immunize Nevada*  
Nevada’s adult immunization rates continue to be well-under the national average. However, over the last decade our childhood rates have increased by 20%. We attribute this success to strong coalition partners working together towards a common goal. By utilizing our coalition partnership model and concurrent grants to the Nevada State Immunization Program from the CDC and to Nevada’s QIN-QIO (HealthInsight) from CMS; Nevada is committed to achieving similar increases in adult immunization rates. While both grants are still in process, this poster will highlight data collected to-date, a multi-year comparison of pharmacy-based immunizations, and collaborating partner activities such as pharmacy student IIS training, large health system community-based projects, FluFit with Nevada Cancer Coalition, and expanded 317 vaccine access at our FQHCs. This collaborative effort is helping create an immunization neighborhood, delivering the right vaccines to the right people, all across Nevada. |
| --- | --- |
| 20 | Title: **Systematic Review of Cost-Effectiveness Analyses on US Adult Vaccines**  
Author(s): Andrew J. Leidner¹², Heekyoung Chun¹², Mike Underwood², Carolyn Bridges²  
¹Berry Technology Solutions  
²CDC  
The adult vaccine schedule provides recommendations about the use of vaccines to reduce the burden of vaccine-preventable diseases among individuals 19 years and older in the US. A recent study by CDC concluded that coverage for all adult vaccines remains low. The cost-effectiveness research literature on adult vaccines has not been synthesized in recent years, which may contribute to low awareness of adult vaccine value and to under-utilization. This study conducted a systematic review of the research literature since 1980 using four electronic databases (PubMed, EconLit, Embase, and Cochrane Library). We identified 1,688 records from the systematic search. After removing duplicates and off-topic studies, we identified 224 papers for full-text review with 62, 16, 13, 48, 31, 43, and 11 studies related to influenza, Tdap, zoster, pneumococcal, hepatitis B, human papillomavirus, and multiple vaccine-preventable diseases, respectively. Preliminary results suggest cost-effectiveness studies consistently found positive economic value associated with adult vaccinations. |
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<tr>
<th>Title: Patterns of Pneumococcal Vaccination in Incident Diabetics</th>
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<td><strong>Purpose:</strong> Pneumococcal polysaccharide (PPSV23) vaccination is recommended for adult diabetics. We examined rates of vaccination in this population.</td>
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<td><strong>Methods:</strong> A cohort of approximately 1.5 million adults was followed from 2005 to 2014 to examine the rates of diabetes and PPSV23 vaccination using the Truven Health Analytics MarketScan database. Diabetics were identified using ICD9 codes specifying diabetes and confirmed with ≥1 diagnosis ≥ thirty days apart for outpatients (single diagnosis for inpatients).</td>
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<td><strong>Results:</strong> Rates of vaccination among diabetics were low, but increased over time. In 2005, 2.9% of those newly-identified as diabetic had a claim PPSV23 vaccination as compared to 0.4% in the non-diabetic population. In 2014, 6.0% of those with incident diabetes had a pneumococcal vaccination claim as compared to 0.8% of non-diabetics and 3.5% of prevalent diabetics.</td>
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<td><strong>Conclusions:</strong> Low rates of pneumococcal vaccination in adults with incident diabetes represent an opportunity to increase vaccination rates in this at-risk population.</td>
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<th>Title: Results from a California Community Pharmacists' Survey</th>
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<td><strong>Purpose:</strong> The California Department of Public Health Immunization Branch partnered with the California Immunization Coalition and a pharmacist consultant to administer an electronic survey to 105 pharmacists in June 2016 to determine pharmacists’ successes and barriers in implementing the adult immunization standards; access and use of a California registry; and future directions for public health and pharmacist collaboration. Roughly half (46% [n=48]) reported no increase in the number of non-influenza vaccines administered during influenza season. Only 19% (n=20) reported using a registry, and another 23% (n=24) were unsure. However, 87% (n=90) indicated an interest in learning more about the registry, primarily on how to look up immunization histories (92% [n=83]) and submit data electronically (80% [n=72]). The data suggests that influenza vaccination is not fully utilized as an opportunity to assess and administer other needed vaccines and that opportunities exist to support pharmacists in utilizing the registry and increasing proactive vaccination.</td>
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Title: IIS Functions: Using the Michigan Care Improvement Registry (MCIR) to Drive Outreach and Education
Author(s): Jacklyn Chandler\(^1\), Courtnay Londo\(^1\), Adam Hart\(^1\), Cristi Bramer\(^1\)
\(^1\)Michigan Dept of Health and Human Services, Division of Immunization

Since 2006, The Michigan Care Improvement Registry (MCIR) has been a lifespan registry. While Michigan healthcare providers are not mandated to report adult vaccinations, the Michigan Department of Health and Human Services (MDHHS) monitors ever-increasing use of the registry. As of February 2017, over 7 million adults have a MCIR record and 58.5 million individual vaccines have been recorded in MCIR for adults. With more providers playing a role in adult vaccinations and reporting data, Michigan has the capacity to develop targeted educational interventions. For example, the Michigan Vaccination Snapshot for Urgent Care was distributed to explain the increasing and critical opportunity urgent care settings have in immunizing patients: recognizing the 59 percent increase in the number of urgent care facilities that report vaccines to MCIR in the past 5 years. Additional examples of data driven interventions include: continuing education modules, newsletter articles, press releases, white papers, and report cards.

Title: Innovative Method for Assessing Vaccination Coverage Among Pregnant Women in Minnesota
Author(s): Anna Fedorowicz\(^1\), Miriam Muscoplat\(^1\), Alexandra Barber\(^1\)
\(^1\)Minnesota Dept of Health

Pertussis and influenza can result in severe disease in infants and can be dangerous for pregnant women. Pregnant women should receive influenza and tetanus, diphtheria, acellular pertussis (Tdap) vaccines to protect themselves and their infants. State-level maternal vaccination data are not available, so the Minnesota Department of Health (MDH) used a new approach to assess influenza and Tdap vaccination coverage among pregnant women in Minnesota. Birth certificate data containing maternal demographic characteristics, prenatal care data, and delivery payment methods were matched with vaccination data from the state’s immunization information system. Vaccination among women with live births March 2013 through 2014 was 58.2% for Tdap and 45.9% for influenza. Coverage varied across demographic groups, including race, maternal birth country, maternal education, insurance coverage, and adequacy of prenatal care. Coverage differences highlight potential health disparities that warrant further study. The results also assist MDH in more effectively targeting future public health interventions.
Title: **Improving Immunization Rates through Bidirectional Electronic Documentation Exchange**

Author(s): Ben Pierson\(^1\), Ned A. Mossman\(^1\), Kathleen McNamara\(^2\)

\(^1\)Oregon Community Health Information Network, Inc.
\(^2\)National Association of Community Health Centers

Most Immunization Information Systems (IIS) are capable of receiving information directly from immunization providers, but the ability to transmit data from IIS to other information systems is less widely available. Such a bi-directional connection between IIS and the EHR would help primary care providers consolidate records, improve efficiency, and ensure timely immunizations. OCHIN is a large-scale Community Health Centers (CHC) network, with member organizations providing care to largely underserved patient populations nationwide. Bidirectional IIS particularly benefits CHC patient populations that are less likely to have continuity in provider/care, more likely to have language and health literacy barriers, and more likely to suffer poor health overall. We worked with CHCs in Washington and Georgia to implement bi-directional connectivity between OCHIN’s network-wide EHR and IIS systems in both states. In addition, we designed new workflows and developed automatic EHR chart reconciliation functionality to eliminate ambiguity and help reduce errors.

Title: **Reinvigorating Influenza Prevention in US Adults Age 65 Years and Older**

Author(s): William Schaffner\(^1\), Marla Dalton\(^1\)

\(^1\)National Foundation for Infectious Diseases

Two factors are primarily responsible for the elevated risk of influenza-related complications and deaths in adults age 65 years and older: an increased likelihood of chronic conditions and immunosenescence, a gradual age-related decline in the immune system. Immunosenescence is also a factor in reduced vaccine efficacy in older adults. This paradox—those who most need vaccine-related immunity are least likely to achieve it—has led to the development of vaccines specifically designed to improve immune responses in adults 65+.

Influenza vaccine coverage rates in the US had been stagnant in the 65+ population for several years until they decreased by about 3 percent during the 2015-2016 influenza season. In July 2016, the National Foundation for Infectious Diseases (NFID) convened experts to examine ways to reinvigorate influenza immunization efforts in the 65+ population. NFID developed an outcomes report and related resources to support optimal influenza prevention strategies among older adults.
27  Title: **Cost-Effectiveness of Influenza Vaccination Compared to Other Adult Health Interventions**  
Author(s): Nazila Dabestani¹, Eric Seiber², Gavin Hougham¹, Joy Schwerzmann¹  
¹Batelle  ²Batelle/Ohio State University  

The Centers for Disease Control (CDC) recommends that all people over 6 months of age receive an influenza (flu) vaccine yearly. Yet, incomplete vaccination coverage and other evidence suggests that some providers are not aware of its cost-effectiveness profile. Funded by CDC’s Immunization Services Division, this structured literature review aims to determine the cost-effectiveness of flu vaccination relative to other preventive health interventions in adults. Results from high quality CEA studies demonstrate that flu vaccination ranges from $6,000 to $90,301 per QALY (Quality-Adjusted Life Year) saved among adults – and is oftentimes cost saving. Breast cancer screening ranges $7,227 to $107,677 per QALY saved; rudimentary colorectal cancer screening $4,361 to $9,180 per QALY saved; and type 2 diabetes $13,376 to $116,908 per QALY saved. The cost-effectiveness of flu vaccination in adults as a preventive health intervention suggests reassessment of clinical and policy focus in terms of time and resources.

28  Title: **Keep Flu Out of School! Strengthening and Enhancing Disease Prevention Through Collaboration**  
Author(s): Susan Hoffman¹, Margaret Cellucci¹, Jon Lemich¹, Serese Marotta², Joanna Colbourne³, Brooke Carlson⁴  
¹National Association of School Nurses  ²Families Fighting Flu  ³National Foundation for Infectious Diseases  ⁴North Sky Health Consulting LLC  

Keep Flu out of School is a school-based, parent/guardian-driven program to raise awareness about influenza and the benefits of annual vaccination. This program is led by the National Association of School Nurses in collaboration with Families Fighting Flu and the National Foundation for Infectious Diseases-Childhood Influenza Immunization Coalition; and funded by the Centers for Disease Control and Prevention. The goal is for school nurses to provide accurate information using communication channels, educational activities, and print and electronic materials to increase knowledge among students in grades K-5, their teachers, and their parents/guardians. The school nurse gathers annual teacher and parent/guardian feedback to evaluate programmatic components and change in knowledge. Communication channels, including social media and the program website ([www.preventchildhoodinfluenza.org.keep-flu-out-of-school](http://www.preventchildhoodinfluenza.org.keep-flu-out-of-school)), provide timely, up-to-date information. This presentation will enable the learner to identify school nursing practices that promote and strengthen influenza prevention efforts ultimately protecting the student, student’s family, school, and broader community.
| Title: Using IIS Provider Level Data to Guide VFC Flu Prebooking  
Author(s): Jalyn Ingalls¹, Adam Hart¹  
¹Michigan Dept of Health and Human Services |

Michigan is currently ranked 42nd in the nation for influenza vaccination coverage among people aged 6 months and older. Though there have been concerted efforts to improve flu vaccination coverage rates, Michigan Care Improvement Registry (MCIR) data from the 2015-2016 flu season showed that flu vaccination coverage for children decreased in every age group from the previous season. In response to this trend, Michigan created a tool for local health departments to use to share data with Vaccines for Children (VFC) providers that showed possible gaps in the number of flu vaccines ordered for their VFC population and a target number of flu vaccine doses they would need to prebook to vaccinate 70% of their VFC population. Following the dissemination of the prebooking tool, there was a statistically significant increase in the number of flu vaccines prebooked for the 2017-2018 flu season compared to the 2016-2017 flu season.

| Title: Three-Year Trends in Healthcare Personnel Influenza Vaccination Following National Reporting Requirements  
Author(s): Megan C. Lindley¹, Elizabeth Kalayil¹, Yi Mu¹, Jonathan Edwards¹, Ray Strikas¹, Dan Pollock¹, Amy Webb¹  
¹CDC |

**Background:** Measurement and feedback on vaccination rates is one strategy recommended to increase vaccination coverage. We examined whether vaccination coverage changed following national implementation of hospital-based healthcare personnel (HCP) influenza vaccination reporting.

**Methods:** Acute care hospitals reported facility-level vaccination data for employees, licensed independent practitioners (LIPs), and adult students/trainees and volunteers (STVs) to the National Healthcare Safety Network, a secure, Internet-based surveillance system managed by CDC. Data from the 2013-14, 2014-15, and 2015-16 influenza seasons were analyzed to assess vaccination coverage trends.

**Results:** Over 4,000 hospitals reported data on 8 million HCP annually. Between 2013-14 and 2015-16, the average annual increase in influenza vaccination coverage overall was 2.0 percentage points (pp) with increases observed in each HCP group (employees: 1.6 pp annually, LIPs: 2.8 pp annually, STVs: 2.5 pp annually).

**Conclusions:** Tracking HCP influenza vaccination in hospitals nationally is feasible and might help increase vaccination coverage in this population.
Title: **Wisconsin Adult AFIX QI Program: Decreasing Barriers and Improving Coverage Rates**

Author(s): Taylor Larson¹, Kailynn Mitchell¹, Stephanie Schauer¹, Stephanie Borchardt¹

¹Wisconsin Immunization Program

**Background:** The Wisconsin Immunization Program implemented the CDC’s Assessment, Feedback, Incentives, and eXchange (AFIX) quality improvement model to improve adult vaccination rates in clinics across Wisconsin.

**Setting:** Clinics administering adult vaccinations are eligible to participate. Over 800 clinics were contacted and 100 clinics elected participation.

**Project Description:** The AFIX model involves consultations with clinic staff and providers. Clinic-specific coverage rates are evaluated for: Tdap (19-100 years), Flu (19-100 years), HPV (19-26 years), Zoster (60-100 years) and PPSV23/PCV13 (67-100 years). Immunization practice standards are reviewed and two to three QI strategies are selected. Follow up is conducted at three and six months.

**Findings:** 87 clinic visits are completed. Common barriers to adult vaccination include: absence of reminder and recall, reimbursement issues, failure to schedule subsequent dose appointments. Among clinics that have reached three month follow-up, Flu rates improved an average of 7%, HPV initiation 5.3% and Pneumococcal initiation improved 3.5%. Results will be continuously updated as clinic visits and follow-ups complete.