



Advancing High Performance Health

AMGA Foundation

Adult Immunization
Best Practices
Learning Collaborative
Case Study

*Community
Physician Network*



Organizational Profile

Community Physician Network (CPN) is a multispecialty provider group serving approximately 350,000 patients across eight counties in central Indiana. Specialties include infectious disease, rheumatology, cardiology, oncology, orthopedics, pulmonology and endocrinology.

A large group of primary care providers initiated the group in 2000 under the name Community Physicians of Indiana, Inc. In January 2012, the name was changed to CPN when the cardiovascular practices and 18 other specialty groups joined the organization.

CPN is composed of approximately 80 primary care (PC) and 100 specialty care (SC) clinics which employ 610 provider full-time employees (FTEs), of which 441 FTEs are physicians and 169 FTEs are advanced practice providers (APPs). Within the provider demographics are 190 PC and 246 SC physicians. Patient coverage is primarily commercial, with approximately 40% Medicare and 15% Medicaid.

Executive Summary

As part of the Adult Immunization Best Practices Learning Collaborative (AI Collaborative), CPN initiated efforts to improve influenza and pneumococcal immunization rates by creating a strategic plan. With focused key initiatives and simple immunization rate goals, this plan drove the subsequent project action plans which defined: key stakeholders, responsible parties, timelines, and completion measures.

The first of CPN's initiatives was to educate all PC and select SC providers, as well as back-office clinical staff, on both reimbursement requirements and the new pneumonia recommendations from the Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP). Because the Centers for Medicare and Medicaid Services (CMS) adopted a 12-month interval between two pneumococcal vaccines, whereas the ACIP permitted a 6-month interval between injections, CPN incorporated the 12-month interval into training documents and algorithms.

With such a large and geographically diverse population to reach, there was a multi-pronged approach to staff education. The EZIZ.org pneumococcal algorithm was modified as

described above, distributed at all training sessions, and posted in all practices. Providers were trained by physician leadership via meetings and emails. Updated information was incorporated into new hire orientation.

The second initiative involved identifying those in the population of patients ≥ 65 years who were vaccine naïve and then creating Health Maintenance Alerts (HMAs) and Best Practice Advisories (BPAs) to alert staff to needed immunizations. These alerts were the single most influential factor in improving CPN's immunization rates. Rates improved from 54.9% at the pre-intervention period to 71.6% at end of intervention period, to show a 17% improvement. This well exceeded the 10% improvement goal.

CPN's third initiative was to gain consensus among providers on the definition of high-risk patients in the 19-64 years age group and then to create HMAs and BPAs to initiate either the pneumococcal conjugate vaccine (PCV13) or the pneumococcal polysaccharide vaccine (PPSV23) with these groups.

Program Goals and Measures of Success

Before establishing goals, baseline data for each group was reviewed by Optum Analytics and immunization rates were calculated. After reviewing national goals and available national data, and with input from the AI Collaborative advisors, goals were set for the Adult Immunization Collaborative (AI Collaborative).

The minimum goal was based on the CDC National Health Interview Survey (NHIS) estimates of national immunization rates for 2012-2014 time periods (the most recent available at the time). Pneumococcal immunization rates in the NHIS were 59.9% for adults aged ≥ 65 years. For adults aged 19-64 years who were determined to be at high risk for developing invasive pneumococcal disease, NHIS rates were 20.0%.¹ For influenza, NHIS immunization rates for adults aged ≥ 19 years were reported to be 43.2%.²

Healthy People 2020 goals from the federal Office of Disease Prevention and Health Promotion (HP2020) were selected as challenge goals or goals on the high end. HP2020 goals are: Age 65+ Pneumococcal 90%, High-Risk Pneumococcal 60%, and Influenza 70%.

The AI Collaborative “stretch” goal was established between each group’s baseline and HP2020. The stretch goal was set at 50% of the gap between baseline and HP2020. Where one stretch goal is reported for all groups, it is based on the median.

The CPN goal was to increase rates for pneumonia vaccines (PV) by 10% in both the ≥65 years population and high-risk adult population. CPN exceeded that goal with an immunization rate increase from 54.9% to 71.6% in the ≥65 years population. Immunization rates were improved from 17.7% to 26.2% in the high-risk population; however, this 8.5% improvement in the high-risk immunization rate did not attain the goal of 10% (Figure 1).

Data Documentation and Standardization

At the initiation of the Collaborative, Optum One analyzed the potential areas of immunization documentation sources for the groups in this Collaborative and determined that immunizations were captured in:

- Rx Tables
- Rx Patient Reports
- Immunization Tables
- Health Maintenance Tables
- CPT/G codes
- ICD-9 codes

Significant variation in documentation patterns can be seen across groups, resulting from variations in EMR provider and configuration, immunization documentation protocols, and adherence to documentation protocols. For the groups in the Collaborative, pneumococcal and influenza vaccinations were most commonly documented in Immunization Tables, Health Maintenance Tables, and CPT/G codes. The least commonly used sources for documentation among the groups were Rx Tables and Rx Patient Reports.

For the AI Collaborative groups that demonstrated documentation between multiple sources, the Optum team provided this data so that groups could determine a standardized documentation best practice internally.

Population Identification

Approximately 120 sites were providing adult immunizations to:

- 190,400 eligible for the flu vaccine
- 42,188 of the ≥65 years group in need of PV
- 61,109 targeted as high risk in need of PV

Some individual practices also conducted flu clinics and alerted patients regarding available flu vaccines (FV) through letters and via the patient portal.

CPN’s influenza immunization rate was also bolstered, in part, because of the requirement that all CPN employees be immunized.

Endocrinologists began vaccinating with PV during the course of the AI Collaborative study. This shift in CPN’s immunization process was important since many of CPN’s diabetic patients view their endocrinologist as their primary care provider (PCP).

Pulmonology and rheumatology specialties were also providing influenza and pneumococcal immunizations. As the effort to improve accessibility for patients continues, there are additional opportunities to engage other specialists in immunization efforts. Cardiologists and oncologists will be future targets.

Intervention

State registry requirements dictate that Indiana pharmacies enter vaccination records into the Children and Hoosier Immunization Registry Program (CHIRP). This resource facilitated more efficient and accurate review of vaccination histories. During the course of the AI Collaborative study, automated flow of data was established both from CPN immunization histories in Epic to CHIRP, and from CHIRP to Epic.

While challenges remain in correcting some duplicate CHIRP records and ensuring staff are properly reconciling record comparisons, these improvements were extremely beneficial to CPN’s process.

The practice of utilizing HMA and BPA alerts for FV and PV was the most impactful intervention instituted to improve

rates. This automation of patient identification and facilitation of immunization decisions not only reduced errors in immunization decisions, but reduced the time formerly needed to assess histories and review vaccination algorithms.

Later in the AI Collaborative study, CPN began utilizing pharmacists and nurses to conduct annual wellness visits (AWV) and incorporating subsequent immunizations into these touch points. This initiative increased both patient satisfaction and immunization rates. To improve AWV compliance, CPN patient care coordinators, who are medical assistants, analyzed data from Epic to initiate outreach calls and in turn drive AWV compliance.

Outcomes and Results

CPN was most successful in improving rates with the ≥ 65 years vaccine-naïve population. These particular HMAs and BPAs were the easiest to implement. Utilizing ACIP guidelines to treat those with questionable vaccine histories as naïve also made this goal easier to communicate and act upon. AWVs for this population also served as a driver to bring patients in for immunization opportunities.

CPN's physician leadership discussed in detail the definition of "high-risk" 19-64 age group. Most debate occurred around stage of renal disease and whether to include stages III, IV, and V in the definition of high risk or just stages IV and V. Ultimately, the decision was to include only stages IV and V Renal Disease as CKD (Chronic Kidney Disease) for purposes of a BPA firing in the EHR; however, CPN's nephrologists are in the practice of recommending a pneumonia vaccine for all renal patients. There was some concern surrounding the implementation of ICD-10 and whether this would include a larger number of patients due to increasing numbers of codes. The other diagnoses that were initially included in the high-risk category for purposes of the BPA firing were asplenia, CSF leaks, and cochlear implants. This did not preclude the physician from giving the vaccine to patients per ACIP recommendations, but only affected the firing of the BPA. After ICD-10 implementation, CPN's Optum One partners provided a list of ICD-10 codes that were considered high risk to facilitate future BPA build.

Endocrinologists also had lengthy deliberations regarding the U.S. Preventive Services Task Force's (USPSTF's) mediocre ratings for advocating PV for diabetic patients.

In addition, patients in the ≥ 65 age group are in some cases receiving most of their care from a specialist versus a PCP, particularly in cardiology, oncology, and endocrinology specialties. Because not all CPN specialists were vaccinating, this presented another barrier to facilitating immunizations in this age group. Some specialists preferred to refer patients back to their PCP or pharmacist for immunization needs. Because local pharmacies do not have integrated EHR to facilitate efficient patient hand-off, further barriers were encountered in capturing patients who have been vaccinated.

CPN's goal was to increase FV rates from 32.5% to 36%. While rates improved to goal, early press reports regarding the suspected ineffectiveness of the FV had a large impact on patient motivation to vaccinate. Delays in internal EHR build for 2015-specific vaccine postponed the initial ability to vaccinate for the one-month period from September to October. In addition, challenges still exist in capturing vaccines administered in community campaigns. Physician leadership has approved self-reporting flu vaccine as the only CPN quality metric that can be captured without documentation.

The interventions with the greatest impact on improving immunization rates were the HMA, BPA, and staff familiarity with the FV protocol. CPN requires FV education annually for clinical staff.

Lessons Learned and Ongoing Activities

With the unknown impact of the transition to ICD-10, the consensus on high-risk diagnoses to include in the BPA delayed implementation of an electronic alert for all high-risk patients indicated for PV vaccine.

Plans to utilize providers' dashboard results and create a culture of healthy competition are still objectives for CPN. Continued education is occurring for CPN providers and clinical support staff around the value of utilizing the EHR to its full capacity, including observing HMAs and BPAs and utilizing registries to identify gaps in care. As is the case in most large,

complex healthcare organizations that are experiencing growth, competing priorities require leadership to prioritize messaging communications to providers.

The process of selecting sources for data was challenging. CPN utilizes multiple systems, including Epic and Optum, to identify patient populations and quality metrics. With a mixture of employed and non-employed providers, as well as multiple entry points into the CPN care system, capturing correct attribution was a complex endeavor.

In 2017, PV rates for the ≥ 65 years population will be an incentivized quality measure for providers.

To sustain and maintain continuous improvement, CPN is adding BPA/HMA for subsequent PPSV23 vaccinations in high-risk populations. CPN will be implementing more robust analysis of gaps in care and patient outreach. Patient Care Redesign efforts are underway which include interventions such as Pre-visit Planning and Team-based Chronic Care Management which will identify vaccine naïve and overdue patients.

Because CPN is consistently building its culture of quality focus with its providers, this will impact accountability for immunization status. Several shared risk third party payer contracts have been entered into and others are being considered, which will require a more focused effort on preventive measures including immunization compliance.

Acronym Legend

ACIP: Advisory Committee on Immunization Practices

APP: Advanced Practice Provider

AWV: Annual Wellness Visit

BPA: Best Practice Advisory

CDC: Centers for Disease Control and Prevention

CHIRP: Children and Hoosier Immunization Registry Program

CMS: Centers for Medicare & Medicaid Services

CPN: Community Physician Network

FTE: Full-Time Employees

FV: Flu Vaccine

GFR: Glomerular Filtration Rate

HMA: Health Maintenance Alert

HP2020: Healthy People 2020

NCQA: National Committee for Quality Assurance

NHIS: National Health Interview Survey

PCV13: Pneumococcal Conjugate Vaccine

PV: Pneumococcal Vaccine

PPSV23: Pneumococcal Polysaccharide Vaccine

References

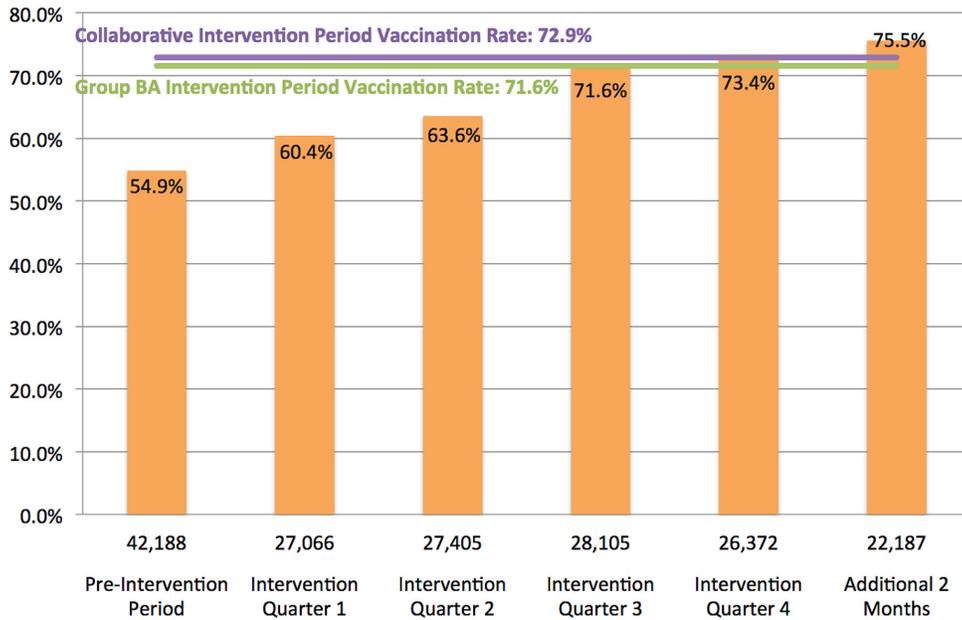
1. Williams WW, Lu, PJ, O'Halloran, A, Bridges, CB, Pilishvili, T, Hales, CM, & Markowitz, LE. (2014) Centers for Disease Control and Prevention (CDC). MMWR MorbMortal Wkly Rep. 2014;63(5):95-102 <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6305a4.htm>.
2. Williams, WW, Lu, PJ, O'Halloran, A, Kim, DK, Grohskopf, LA, Pilishvili, T, Skoff, TH, Nelson, NP, Harpaz, R, Markowitz, LE, Rodriguez-Lainz, A, & Bridges, CB. (2016) Surveillance of Vaccination Coverage Among Adult Populations — United States, 2014; Surveillance Summaries / February 5, 2016 / 65(1):1–36 <http://www.cdc.gov/mmwr/volumes/65/ss/ss6501a1.htm>.

Intervention Period Definitions

- Pre-Intervention: 03/01/2013 - 02/28/2015
- Quarter 1: 03/01/2015 - 05/31/2015
- Quarter 2: 06/01/2015 - 08/31/2015
- Quarter 3: 09/01/2015 - 11/30/2015
- Quarter 4: 12/01/2015 - 02/28/2016
- Additional 2 Months: 03/01/2016 - 04/30/2016
- Intervention Period: 03/01/2015 - 04/30/2016

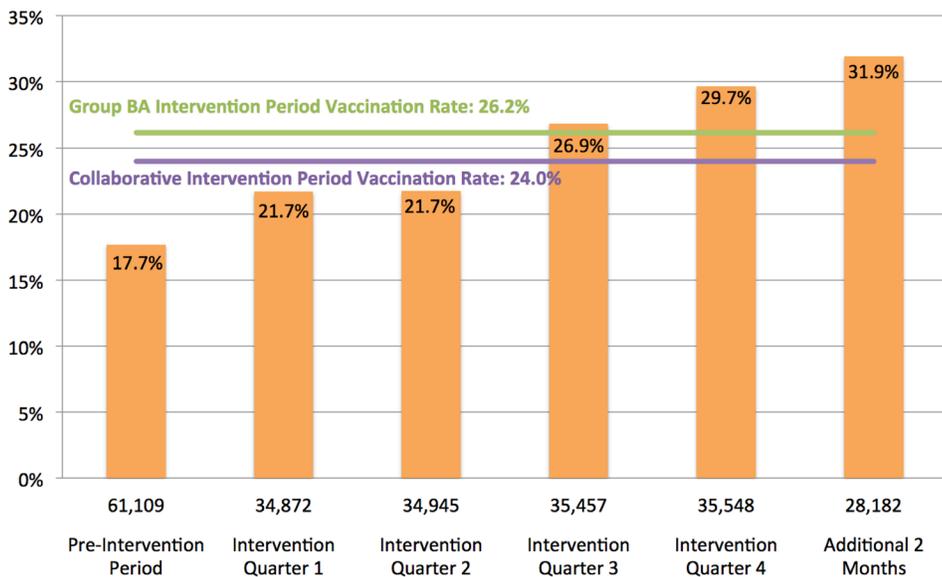
Figure 1: CPN AI Collaborative Results: Pneumococcal Vaccines

**Group BA: Pneumococcal Vaccine Rates
(Any PV, Age 65+) Multiple Periods**



Net Change in % Patient Vaccination Rate (Pre-Intervention to Intervention): 17%

**Group BA: Pneumococcal Vaccine Rates
(Any PV, Age 19-64, High Risk) Multiple Periods**



Net Change in % Patient Vaccination Rate (Pre-Intervention to Intervention): 8.5%

Figure 2: CPN AI Collaborative Results: Influenza Vaccines

**Group BA: Influenza Vaccine Rates
Multiple Periods**

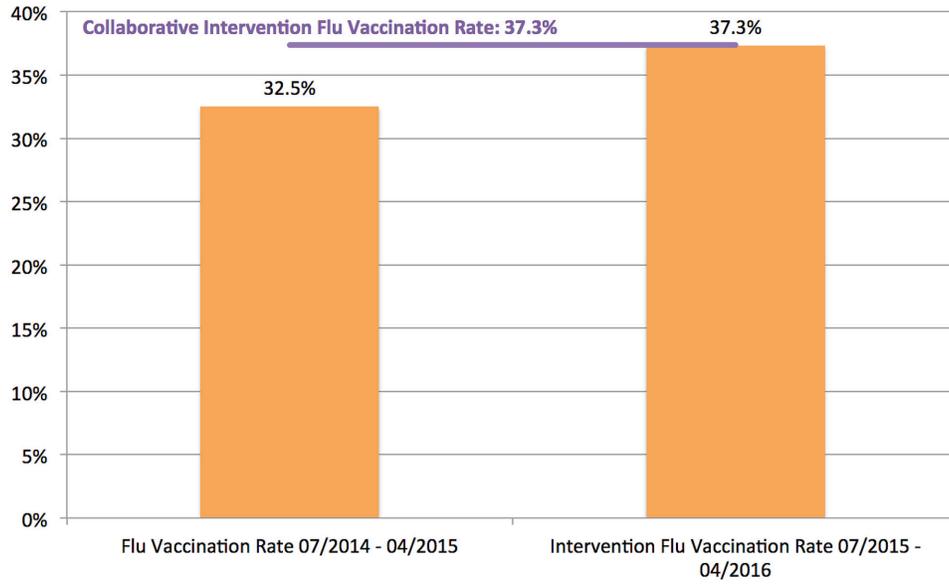
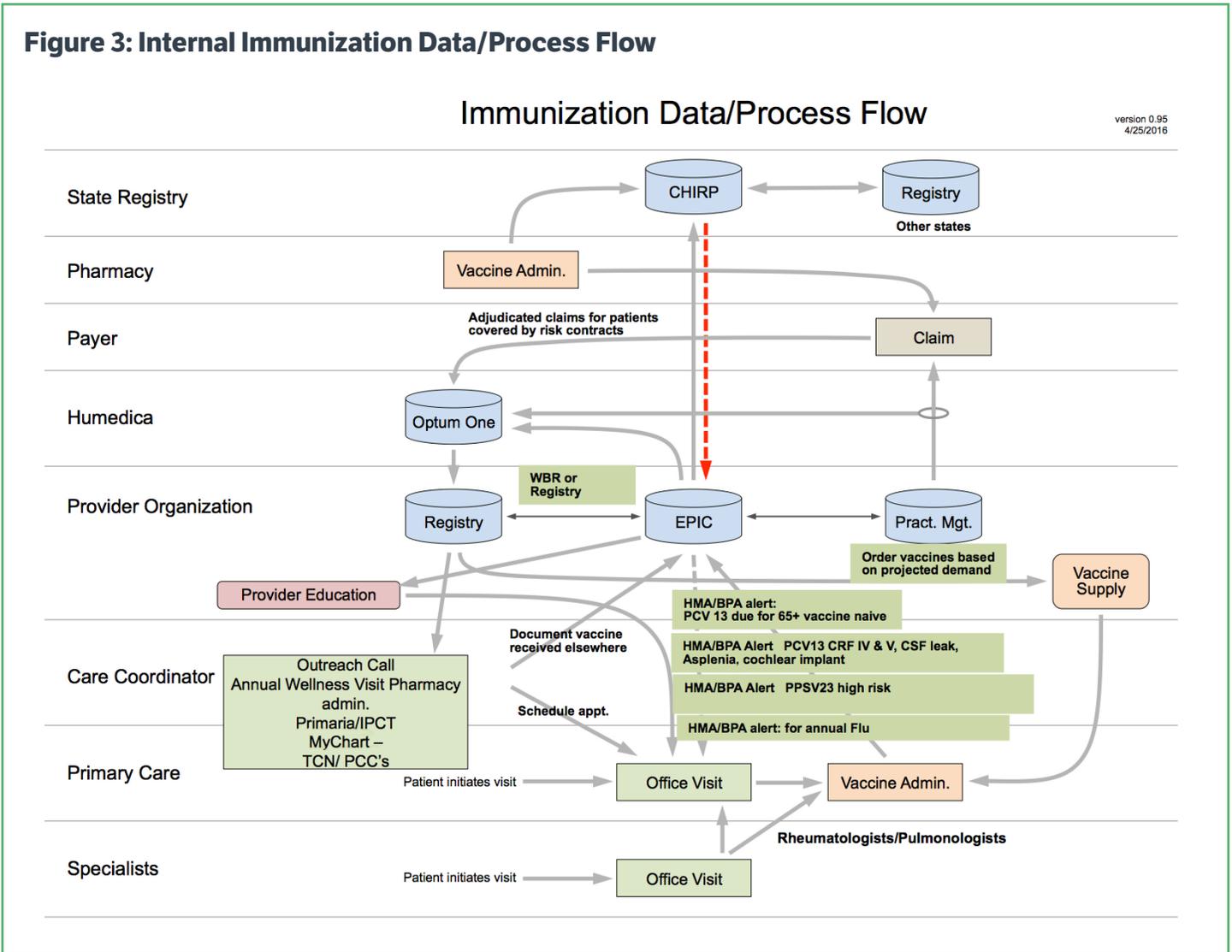


Figure 3: Internal Immunization Data/Process Flow



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