



Advancing High Performance Health

AMGA Foundation

Adult Immunization (AI)  
Best Practices Learning  
Collaborative, Group 3:  
Case Study

---

*The Polyclinic*  
*Seattle, WA*



## Organizational Profile

Established in 1917 by a small group of independent physicians in downtown Seattle, The Polyclinic has grown into one of the leading multispecialty group practices in the Puget Sound region. The Polyclinic retains its physician-led organizational structure and is governed by a board of directors composed of physician leaders with input and counsel from senior administration.

The Polyclinic is comprised of more than 240 physicians and advanced practice clinicians in primary care—family medicine, internal medicine, and pediatrics—and dozens of specialties, including surgical sub-specialties. Providers are supported by approximately 1,100 staff members and provide care for more than 235,000 patients at thirteen outpatient locations.

## Executive Summary

The Polyclinic chose to participate in the AMGA Adult Immunization Best Practices Collaborative (AI Collaborative) for several reasons, including low performance on pneumonia vaccination rates, no clear workflow for patients to follow in order to receive the pneumonia vaccine, clinical criteria was found to be unavailable for utilization, and there was no clearly determined way to monitor performance.

In order to address these issues, The Polyclinic team actively worked to support provider and staff education by sharing AI Collaborative data with staff, providers, and the Quality Committee to monitor vaccine improvement rates and ensure the AI Collaborative remained a focus. This included the creation and distribution of kiosk posters and flyers for pneumonia vaccination in waiting and exam areas and working directly with high-risk specialties to ensure pneumonia vaccine was available. In particular, confusion across specialties regarding where patients should go for the pneumonia vaccines, as well as limited access to the vaccine itself, were key discoveries early in the study. This resulted in work to confirm that all high-risk specialties now carry the vaccine and are prepared to administer it to the appropriate patients, as well as the creation of standard processes using existing guidelines, which were shared throughout the clinic.

Information technology was utilized via our electronic health record (EHR) system, Epic, to identify patients determined to be high-risk between the ages of 19-64 in need of the pneumonia vaccine, those over age 65 in need of either pneumonia vaccine, and patients over six months of age in

## Acronym Legend

**AI Collaborative:** AMGA Adult Immunization Best Practices Collaborative

**CDC:** Centers for Disease Control and Prevention

**EHR:** Electronic Health Record

**HP2020:** Healthy People 2020

**QA:** Quality Assurance

**WAIS:** Washington State Immunization Information System

need of the yearly influenza vaccine. The Washington State Immunization Information System (WAIS), a bidirectional interface with our EHR, was used to reconcile patients vaccinated for pneumonia or influenza elsewhere.

The immunization team engaged the clinical support of the employee health department to ensure all Polyclinic employees received their flu vaccine in 2017 as well as to operate a fall flu and pneumonia immunization clinic for employees and patients at three of the system's largest locations in 2018. Employees are required to receive the influenza vaccination, which is provided free of charge at these flu clinics, and 97% were compliant by the end of the 2017-2018 flu season. As of January 2019, the employee flu vaccination rate was 93% for the current flu season. Efforts to continue to vaccinate The Polyclinic's staff are ongoing with the understanding that herd immunity will help protect both our staff and patients from influenza.

## Program Goals and Measures of Success

### **AI Collaborative Goals**

Collaborative goals were set for the Adult Immunization Collaborative (Groups 2 and 3 participants). The collaborative goals were set based on reviewing the Healthy People 2020 goals from the federal office of Disease Prevention and Health Promotion (HP2020),<sup>1</sup> baseline data for each group, and with input from the AI Collaborative advisors (see Appendix).

### **Polyclinic Goals**

**Address vaccination need through medical subspecialty clinics.** The AI Collaborative goal for Measure 1, pneumonia vaccination for patients over the age of 65, was 90%, and for Measure 2, pneumonia vaccination for high-risk

patients between 19–64 years, was 45%. Via the use of a secret shopper in December 2017, it was learned that there was no standard process for immunizing high-risk patients between 19–64 years of age. This spurred work early in 2018 to solicit physician champions in select high-risk specialties including rheumatology, endocrinology, nephrology, pulmonology, and gastroenterology, as well as work to confirm that the pneumonia vaccine was available in these same specialties. The primary physician champion worked directly with these specialties to develop vaccine workflows for diabetic and immunocompromised patients, which were shared with specialty departments involved in their care (see Appendix).

**Develop immunization measures in the Population Health application to streamline measuring, monitoring, and the reporting of vaccination rates in order to improve patient care.** The second challenge identified was that there was no visibility or knowledge of vaccination status for patients. To address this problem, the Epic team was engaged alongside clinicians to design workflows aimed at identifying patients in need of pneumonia vaccination. In addition to pneumonia vaccination, the teams were able to flag the need for other vaccinations as well. Epic now alerts providers via the Health Maintenance module when they are working with patients in need of vaccinations, including pneumonia and influenza. Patients who have created MyChart accounts via Epic also are able to view their vaccination records and see vaccinations they need to receive when they log in.

**Expand upon the seasonal flu clinic to include pneumonia vaccinations.** Finally, besides addressing the need for vaccination in specialty clinics, the team wanted to leverage their existing resources through the influenza vaccination clinic open from October through December each year. Clinicians were engaged to develop clinical pathways and decision algorithms to assist flu clinic staff in assessing the need for pneumonia vaccination based on age groups and comorbidities. The Polyclinic’s seasonal flu clinic expanded to include both pneumonia vaccines for high-risk patients between 19–64 years as well as those over 65 for the 2018–19 season. The flu clinic is the primary location for employee flu vaccinations and the employee health team worked in conjunction with practice managers to ensure employees received their vaccination. This included offering single day walk-in clinics at multiple satellite locations for employees to receive their flu vaccinations. The AI Collaborative goal for Measure 3, flu vaccination for all patients and employees, was 45%.

## Data Documentation and Standardization

The data analytics team used the AI Collaborative measure specifications to develop and test data extraction queries. Immunization data is stored in multiple locations in the EHR and data warehouse (e.g., claims, data from external sources, locally documented immunizations). The quality assurance (QA) process confirmed that the measure calculation included all available data.

## Population Identification

The Polyclinic’s target population included all patients over the age of 18 who see any Polyclinic provider in clinics, especially those with chronic conditions.

The Polyclinic serves more than 235,000 patients in and around the Seattle area. Thirteen clinics are all located in the urban core of Seattle and tend to draw patients largely from within the Seattle city limits. The Polyclinic’s patient population is broad and diverse, though they tend to serve a high proportion of commercially insured patients and patients with higher than average household incomes. Roughly half of their patients visit The Polyclinic for primary care and half for specialty care. Approximately 10% of their patients are age 65 or older.

Patients were identified as needing the pneumonia vaccine using the Health Maintenance alert in Epic. This alert flags patients who are over the age of 65 or who are between the ages of 19–64 with a high-risk condition for pneumonia and all patients over six months of age for influenza vaccination. Patients that use the MyChart interactive portal in Epic to coordinate with their care team are also able to see what vaccinations they are due for each time they log in.

## Intervention

The Polyclinic team focused on three primary areas of improvement: patient, provider, and staff education; information technology; and clinical support. The broad goals of each of these were to share data with staff and providers to monitor vaccine improvement rates, use the population registry to identify patients in need of either the flu or pneumonia vaccine, and to provide vaccine information and opportunities for employees to receive the flu vaccine.

### **Patient, Provider, and Staff Education**

The internal marketing team developed pneumonia-focused signage and distributable flyers using the Centers for Disease Control and Prevention (CDC)-approved pneumonia risk factors poster as a guide. These were placed in waiting areas and exam rooms throughout the clinics but more strategically focused in areas where high-risk patients were commonly seen—rheumatology, infectious disease, pulmonary medicine, nephrology, endocrinology—as well as family medicine and internal medicine (see Appendix). Coordination was sought with central supply and individual departments to ensure pneumonia vaccine readily available. The immunization team also worked directly with high-risk specialties to collect data on vaccination rates for their patient population and develop and share protocols for vaccination (see Appendix).

### **Information Technology**

It was confirmed that Epic alerts providers when patients are in need of any vaccine, including pneumonia or influenza. Additionally, the immunization team worked to understand how the WAIS operated as well as challenges staff and providers faced when reconciling vaccines via that system in Epic.

### **Clinical Support**

The team collaborated with the employee health department to understand the protocols and process for employee flu vaccinations each year. The flu vaccination is required each year for all employees as a condition of employment and requires ongoing communication with employees, managers, and supervisors to ensure compliance.

## **Outcomes and Results**

Results from the AI Collaborative indicate that while The Polyclinic did experience some success in improving vaccination rates for the three measures, there are still opportunities for additional improvement (see Appendix for Outcomes). Data were gathered for the following date ranges:

1. Baseline: July 1, 2016–June 30, 2017
2. Q1: July 1–September 30, 2017
3. Q2: October 1–December 31, 2017
4. Q3: January 1–March 31, 2018
5. Q4: April 1–June 30, 2018
6. Q5: July 1–September 30, 2018

Rates of pneumonia immunization among the patient population over age 65 saw steady increases from 70% to 79% over the course of the AI Collaborative.

The rate of pneumonia immunization among patients age 19-64 with a high-risk condition improved from 24% to 32% during the AI Collaborative. At the time of this report, data were not available on pneumonia vaccination rates for individual high-risk specialties and the patients they served. Additional data were pulled after the collaborative on patients in this age group with a high-risk condition. These patients must have seen a specialist in endocrinology, infectious disease, nephrology, pulmonary medicine, or rheumatology in an office visit within 12 months of receiving any pneumonia vaccine. They may or may not have had a PCP with The Polyclinic. Results show an increase from a 35.3% vaccination rate during the baseline period to a 46.1% rate during the follow-up period of July 2017-June 2018. These results suggest that when specialty physicians engage in conversations about pneumonia vaccines with their patients vaccination rates improve.

Influenza immunization rates showed more variation, with the baseline population reflecting a 29% immunization rate, jumping to a high of 43% for quarter two reporting, and then falling again to 7% for the final reporting period. These variations are largely due to the fact that patients need to be revaccinated for the flu yearly. The higher percentages reflect reporting periods later in the flu season, which means a greater number of patients were compliant with this measure. The lower percentages reflect reporting periods at the beginning of the standard flu season and so naturally included fewer patients in compliance with this vaccination.

## **Lessons Learned and Ongoing Activities**

Insight gained through participation in the AI Collaborative included the importance of clear and dedicated leadership applied consistently in encouraging vaccinations throughout the organization as well as regular communication with all involved practices to encourage vaccinations. The need for a more robust plan for data collection and review on the part of the internal Polyclinic team became apparent as the AI Collaborative progressed. The Polyclinic was able to provide pneumonia vaccination in specialty clinics, but perhaps not to the extent originally intended. In working with the specialty teams, it was learned that having engaged and vested champions as well as a sequence of meetings and

brainstorming sessions would have perhaps resulted in better outcomes.

The collaboration with the Epic team to flag patients resulted in a significant improvement in the ability to provide appropriate vaccinations. This involved the use of the Health Maintenance module as well as the bidirectional state immunization database (WAIS). Challenges were found with the reconciliation of vaccines using the WAIS database due to the time needed, as well as a lack of clear understanding of who clinically should be reconciling these and when, both of which continue to be explored.

The flu clinic was indeed a great success. The clinical pathways and decision algorithms allowed the staff to appropriately offer the pneumonia vaccine to patients and staff.

Unique challenges were faced by The Polyclinic team due to the unanticipated changes to team membership throughout

the AI Collaborative timeframe. The physician champion was unable to participate fully after the third quarter reporting period and multiple other team members changed through the timeline, resulting in a less cohesive project than had originally been anticipated.

Next steps include additional analysis of data at a department level, follow-up on outreach methods, and the inclusion of immunization rates in regular quality reporting.

---

## References

1. Office of Disease Prevention and Health Promotion (ODPHP). Healthy People 2020. [healthypeople.gov](https://www.healthypeople.gov).

## Collaborative Goals

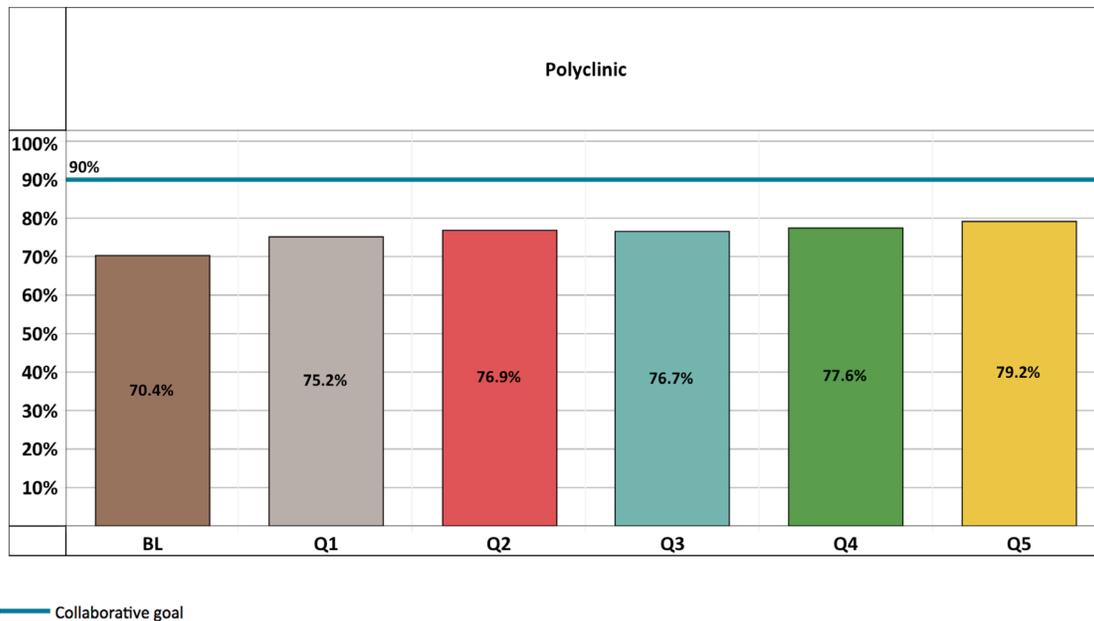
Measure	Healthy People 2020	Collaborative Goal
Measure 1 (65+) Any	90%	90%
Measure 1 (65+) Both PPSV and PCV*	90%	60%
Measure 2 (High-Risk)	60%	45%
Optional Measure 2a (At-Risk)**		
Measure 3 (Flu)	70%/90%***	45%

\* Increasing “Both” is a good goal for Groups which are already doing well on “Any”

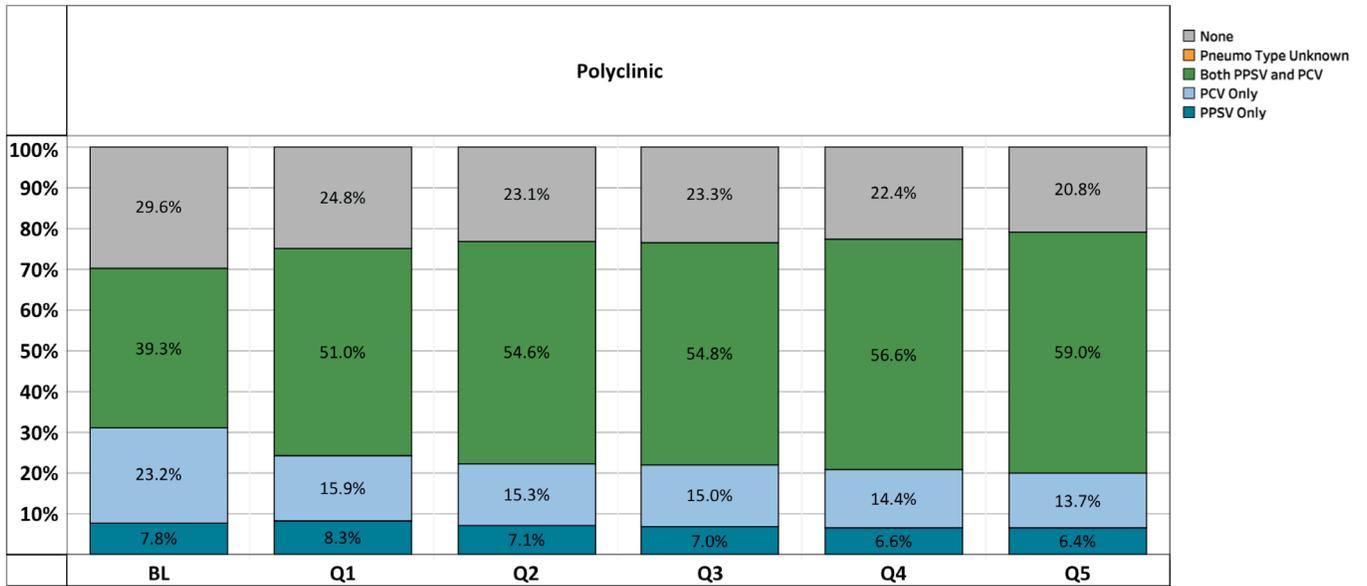
\*\* According to CDC guidelines, it is not currently recommended that the at-risk population receive PCV. Therefore, “PPSV” or “Unknown pneumococcal vaccination” are numerator options for Measure 2a.

\*\*\* 70% for all patients, 90% for Medicare patients

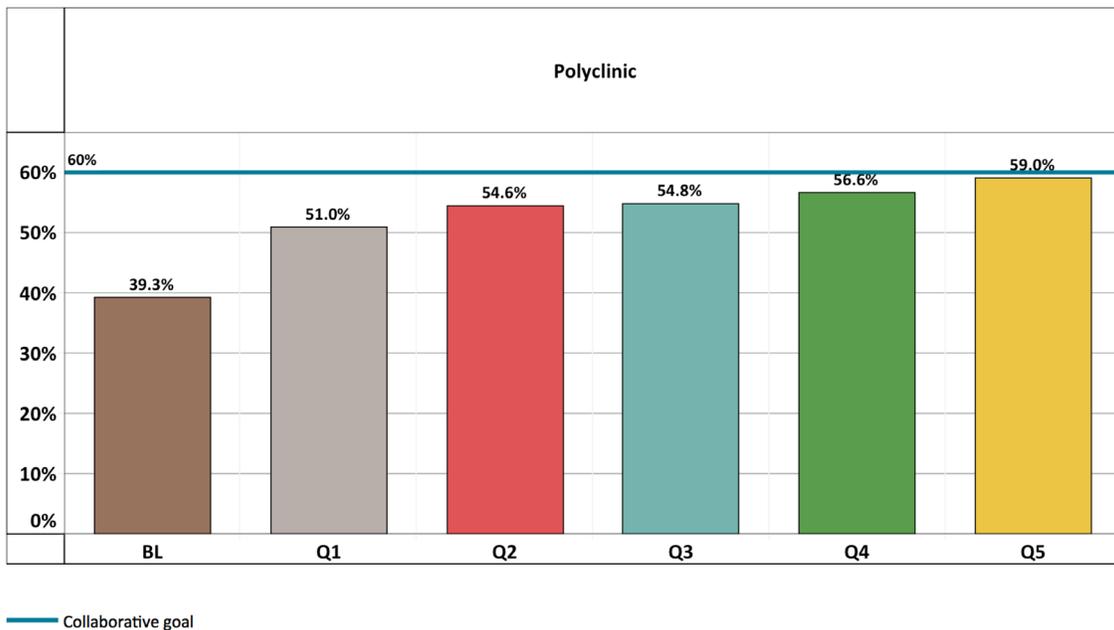
### Measure 1 – Pneumococcal (Any) Immunization for Adults Ages ≥ 65



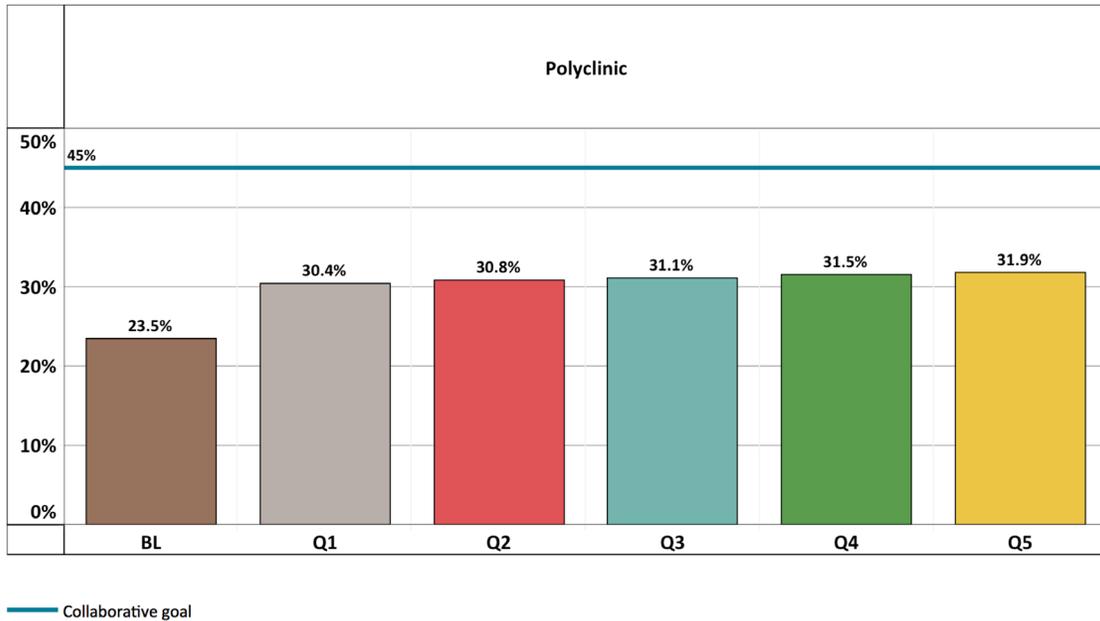
## Measure 1 – Pneumococcal (Any) Immunization for Adults Ages ≥ 65



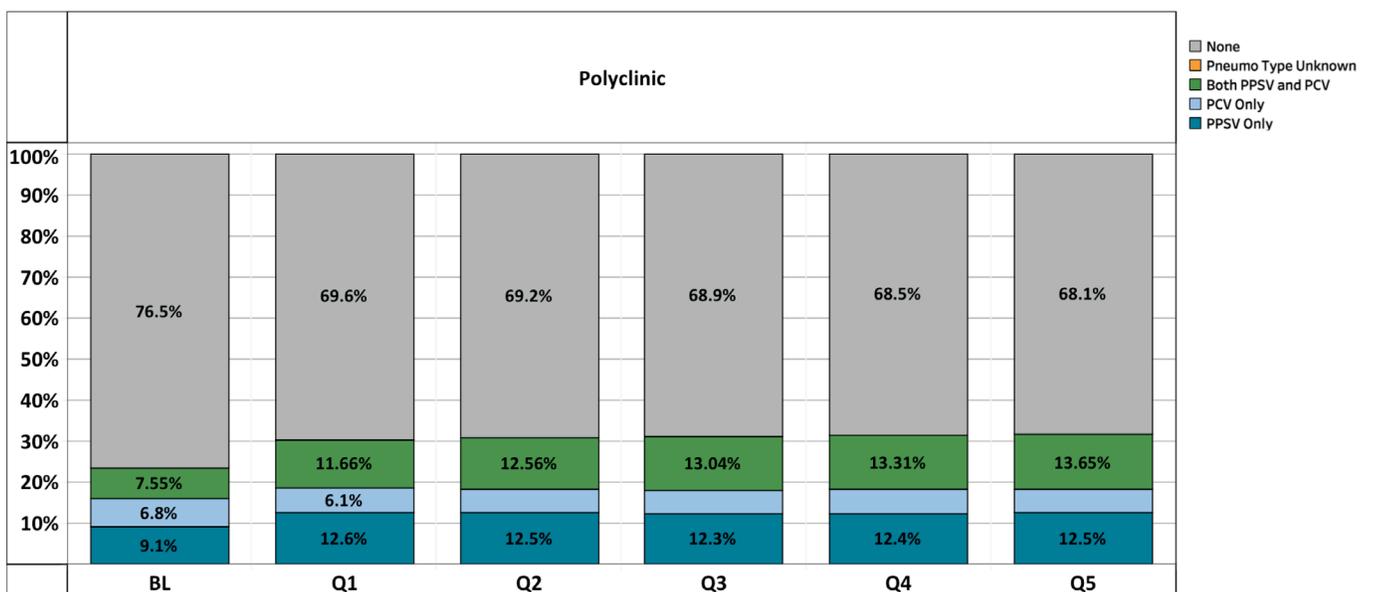
## Measure 1 – Both PPSV and PCV Immunization for Adults Ages ≥ 65



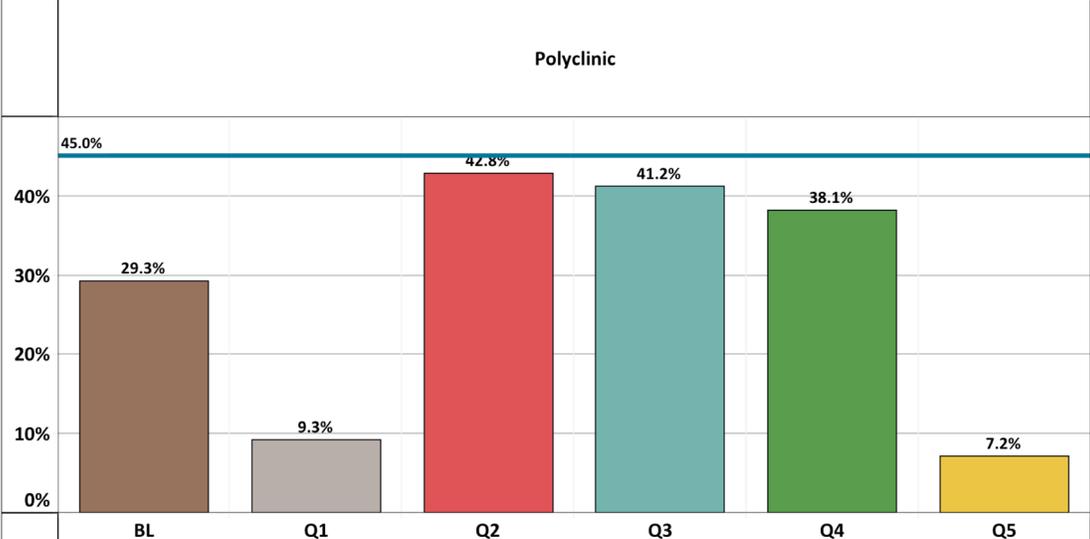
## Measure 2 – Pneumococcal (Any) Immunization for Adults Ages 19–64 with High-Risk Conditions



## Measure 2 – Pneumococcal (Any) Immunization for Adults Ages 19–64 with High-Risk Conditions



**Measure 3 – Influenza Immunization, Age ≥ 18**



— Collaborative goal

# Appendix

## Outcomes

	Baseline	Baseline Group 3 Weighted Average	PV/IV Qtr1	PV/IV Qtr2	PV/IV Qtr3	PV/IV Qtr4	PV/IV Qtr5	Goal
<b>Measure 1:</b> Pneumococcal immunization for adults age 65 years and older	70%	77%	75%	77%	77%	78%	79%	90%
<b>Measure 2:</b> Pneumococcal immunization for adults age 19–64, who also have a high-risk condition	24%	30%	30%	31%	31%	32%	32%	45%
<b>Measure 3:</b> Evaluates influenza immunization for adults age 18 and older each flu season.	29%	41%	9%	43%	41%	38%	7%	45%

---

# ARE YOU AT RISK FOR PNEUMONIA?

---

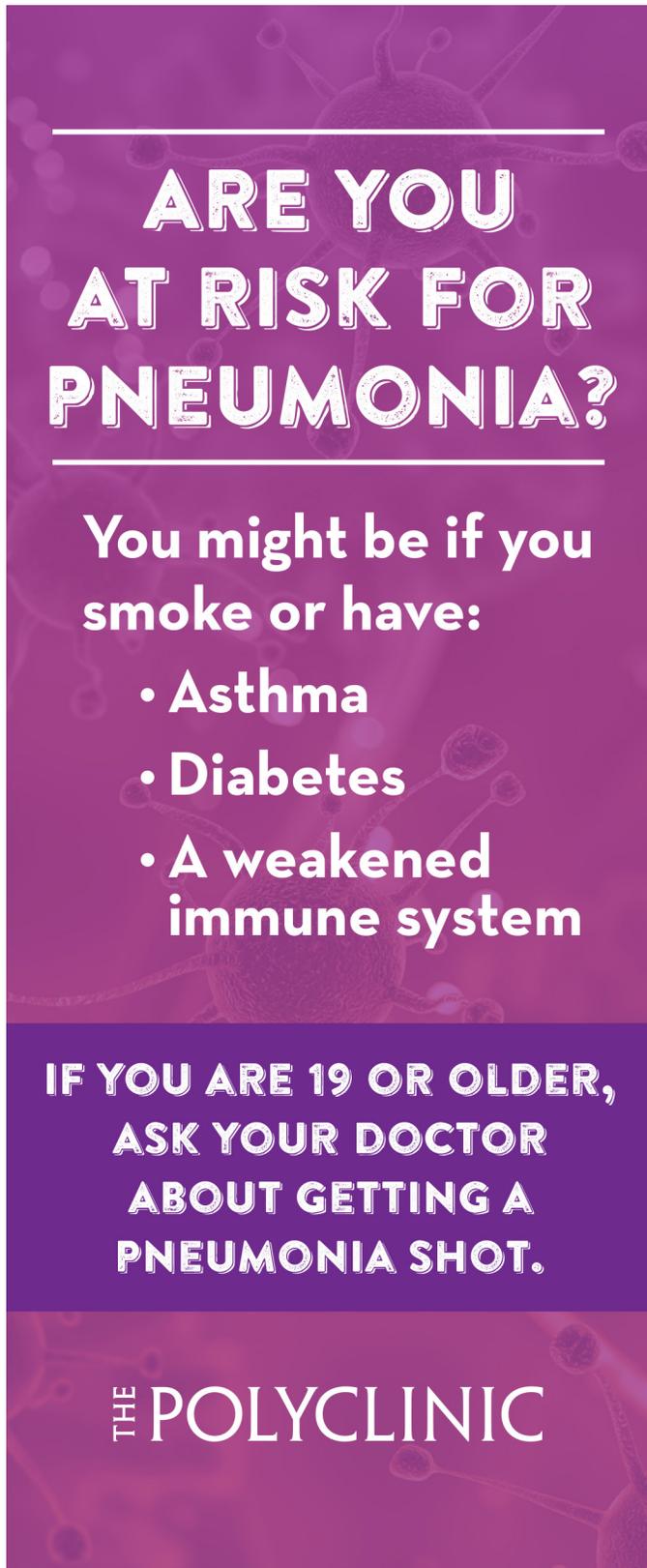
You might be if you  
smoke or have:

- Asthma
- Diabetes
- A weakened  
immune system

**IF YOU ARE 19 OR OLDER, ASK YOUR DOCTOR  
ABOUT GETTING A PNEUMONIA SHOT.**

THE POLYCLINIC

Flyer Insert

A vertical flyer insert with a purple background and a faint illustration of a virus particle. The text is white and arranged in several sections.

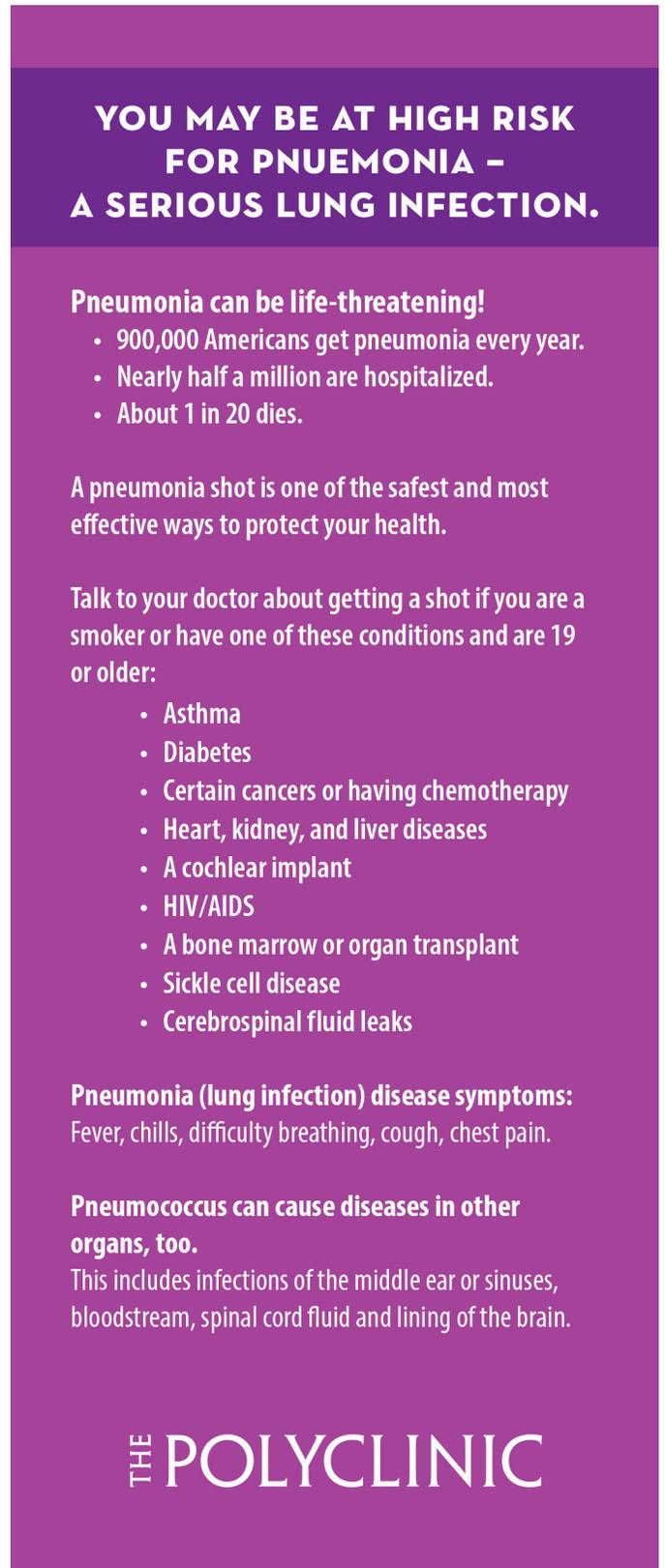
**ARE YOU  
AT RISK FOR  
PNEUMONIA?**

**You might be if you  
smoke or have:**

- Asthma
- Diabetes
- A weakened  
immune system

**IF YOU ARE 19 OR OLDER,  
ASK YOUR DOCTOR  
ABOUT GETTING A  
PNEUMONIA SHOT.**

**THE POLYCLINIC**

A vertical flyer insert with a purple background and a faint illustration of a virus particle. The text is white and arranged in several sections.

**YOU MAY BE AT HIGH RISK  
FOR PNEUMONIA –  
A SERIOUS LUNG INFECTION.**

**Pneumonia can be life-threatening!**

- 900,000 Americans get pneumonia every year.
- Nearly half a million are hospitalized.
- About 1 in 20 dies.

A pneumonia shot is one of the safest and most effective ways to protect your health.

Talk to your doctor about getting a shot if you are a smoker or have one of these conditions and are 19 or older:

- Asthma
- Diabetes
- Certain cancers or having chemotherapy
- Heart, kidney, and liver diseases
- A cochlear implant
- HIV/AIDS
- A bone marrow or organ transplant
- Sickle cell disease
- Cerebrospinal fluid leaks

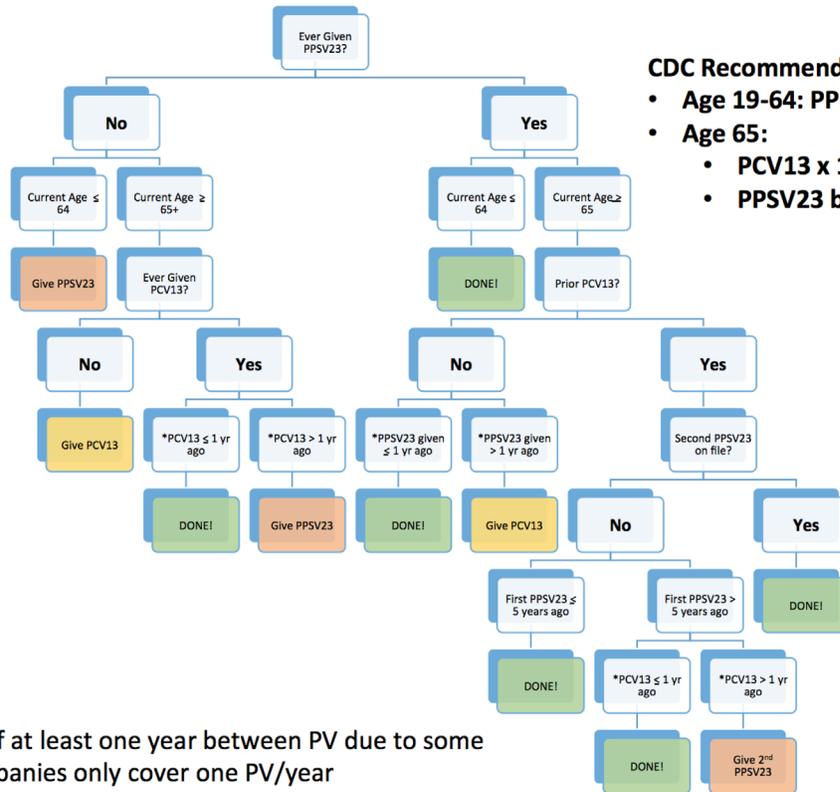
**Pneumonia (lung infection) disease symptoms:**  
Fever, chills, difficulty breathing, cough, chest pain.

**Pneumococcus can cause diseases in other  
organs, too.**  
This includes infections of the middle ear or sinuses, bloodstream, spinal cord fluid and lining of the brain.

**THE POLYCLINIC**

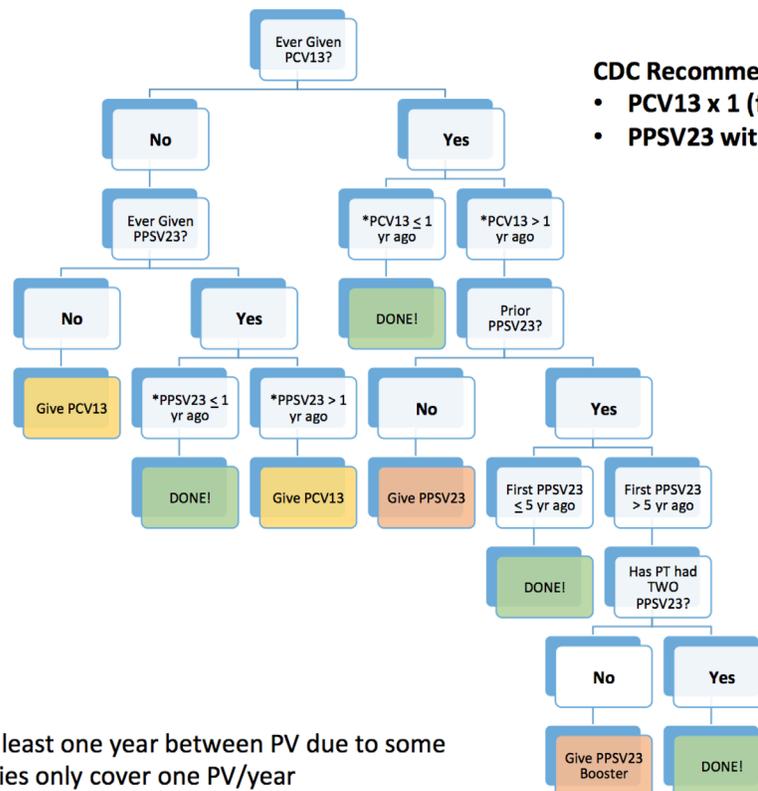
## Pneumococcal Vaccination Flow Charts

### PNEUMOCOCCAL VACCINATIONS FOR PATIENTS WITH DIABETES MELLITUS



\*designation of at least one year between PV due to some insurance companies only cover one PV/year

### PNEUMOCOCCAL VACCINATIONS FOR IMMUNOSUPPRESSED PATIENTS



\*designation of at least one year between PV due to some insurance companies only cover one PV/year

## Project Team

**Mary Anderson, M.D.**

Clinical Integration and Quality Officer

**Jennifer Gorman, M.D.**

Medical Director Sub Specialty

**Angie Beck, CPHQ**

Director, Quality Metrics and Improvement

**Rodica Pop, Ph.D., R.N.**

Director Quality, Patient Safety, Risk  
Management

**Ben Landsman, M.H.A., M.P.A.**

Data Manager, Quality

**Clyde Baxter**

Senior Systems Analyst, Information  
Technology

**Emily Hemming, M.H.S.**

Quality Improvement Specialist



### AMGA Foundation

One Prince Street  
Alexandria, VA 22314-3318

[amga.org/foundation](http://amga.org/foundation)



AMGA's Distinguished Data and  
Analytics Collaborator



This project was sponsored by Pfizer Inc.  
Pfizer was not involved in the development  
of content for this publication.