AMGA

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AMGA Foundation

# Adult Immunization (AI) Best Practices Learning Collaborative, Group 2: Case Study

## *OU Physicians*

### *Oklahoma, OK*

## Organizational Profile

With over 1,000 physicians and advanced practice providers, OU Physicians is Oklahoma's largest physician group and encompasses almost every adult and child specialty. The practice is one of only a handful of academic practices accredited by the Accreditation Association for Ambulatory Health Care, Inc. (AAAHC). OU Physicians ranks in the top 2% in patient experience among a peer group of 105 academic medical systems throughout the nation. Previously known as the University Physicians Medical Group, the name was changed to OU Physicians in 2001 to better align with the University of Oklahoma, the OU Health Sciences Center, and the OU College of Medicine. The majority of OU Physicians clinics are located on the University of Oklahoma Health Sciences Center campus in Oklahoma City with a number of satellite facilities across Oklahoma.

OU Physicians is the academic faculty practice of the University of Oklahoma College of Medicine and employs 635 credentialed physicians and 376 advanced practice nurses or physician assistants. There are approximately 67 ambulatory clinics within the OU Physicians group that serve an estimated 660,000 patients annually, including pediatrics, oncology, and adult services. Of the services provided, 17% are delivered in a primary care setting.

## Executive Summary

Through involvement in the AMGA Adult Immunization (AI) Best Practices Learning Collaborative, OU Physicians addressed several gaps in adult vaccinations across the organization. In order to improve pneumococcal and influenza administration rates, interventions focused on staff education, patient education and outreach, electronic medical record (EMR) decision support, more robust clinical support, and monetary compensation for improved outcomes.

As a result, pneumococcal vaccination rates showed improvement in all measures. However, there was no evidence of sustained improvement of Measure 2A. OU Physicians exceeded the AI Collaborative goal for Measure 3 within the first quarter and continued to improve throughout the duration of the AI Collaborative.

OU Physicians learned many lessons through this project. First, though overall pneumococcal vaccination rates were improved, the organization's decision to limit EMR decision support to only specific care areas affected the overall ability to improve rates. Moving forward, the organization plans to expand decision support to all areas of care. Second, routine staff education and consistent monitoring of vaccine rates for the at-risk population will aid in sustained improved rates. Third, the strategy to promote pneumococcal vaccination during the flu season and annual Medicare Wellness visits was successful in improving rates for both high-risk and at-risk patients. Fourth, the organization did not address the use of claims data and interfaces with other vaccine providers through this collaborative. OU Physicians will need to create a plan to utilize these resources in the future.

### Acronym Legend

**AAAHC:** Accreditation Association for Ambulatory Health Care, Inc.

**ACIP:** Advisory Committee on Immunization Practices

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

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

**EMR:** Electronic medical record

**HP2020:** Healthy People 2020

**MIPS:** Merit-Based Incentive Payment System

**PCV:** Pneumococcal Conjugate Vaccine

**PPSV:** Pneumococcal Polysaccharide Vaccine

## Program Goals and Measures of Success

The AI Collaborative goals were set by AMGA Foundation based on reviewing the Healthy People 2020 goals from the federal office of Disease Prevention and Health Promotion (HP2020)[1], baseline data for each group, and with input from the Collaborative advisors (see Appendix).

OU Physicians had four main goals when beginning the AI Collaborative. The first goal of the organization was to meet the goal set by the AI Collaborative for Measure 1, which was a 90% pneumococcal vaccination rate for patients aged 65 and older. The second goal was to meet the AI Collaborative goal for Measure 2 of a 45% pneumococcal vaccination rate for patients aged 19-64 with high-risk conditions. The third goal was to create processes to collect data about at-risk patients aged 19-64 years and how to approach this population regarding vaccination. The fourth goal of the organization was to exceed the AI Collaborative goal for flu vaccination of 45% and attain the HP2020 goal of 70%.

## Data Documentation and Standardization

The standardization of all vaccine documentation at OU Physicians began with the use of one universal form in the EMR to record all vaccines administered by our staff as well as historical vaccine data. Oklahoma does not currently have an adult immunization registry; interface with the pediatric immunization registry is still in development. Therefore, staff must manually enter all vaccinations for OU Physician patients into the medical record. OU Physicians identified education, as well as tools and reports, as essential in assisting staff and providers to accomplish recording this data.

OU Physicians created monthly reports to monitor progress and provide transparency among clinics and providers. The use of transparent reporting fosters a sense of self-awareness and competition among providers. Specifically, the use of bubble graphs provides a visual representation of a provider's impact on the organization's rates. Provider practices who use these tools and focus on individual and group rates showed an improvement in vaccine rates.

## Population Identification

There are 13 clinics that administer adult immunizations, three of which administer only the influenza vaccine. Two freestanding influenza clinics are offered in the main towers on the OU Physicians campus during the flu season. The Oncology Center's 10 clinics administer all vaccinations through their infusion center. Clinics range in size from one to 80 providers.

Every ambulatory clinic that serves adult patients within OU Physicians is prompted by decision support within the EMR to screen the influenza vaccination status of patients aged 6 months and older. The EMR team also created decision support for all patients over 65 who did not have documentation of a previous pneumococcal vaccine in their medical record. The team also built prompts into EMR encounters for each risk group based upon age range or risk factors. OU Physicians chose to address the AI Collaborative goals by dividing focus for both the at-risk and high-risk patients based on primary location of care. Patients aged 19-64 who have a diagnosis of diabetes or who smoke are addressed in all primary care clinics as well as the Endocrinology Clinic. The Oncology Center and the Infectious Disease Clinic addressed all patients aged 19-64 with a high-risk health condition and/or both moderate and high-risk conditions.

## Intervention

The OU Physicians team first created a needs assessment in order to identify gaps in the vaccination practice. Based on the results, the team determined to focus on education for both staff and patients, improved data collection with alerts and decision support in the EMR, support for clinical staff, and use of compensation for staff.

The complexity of the pneumococcal vaccination recommendations created challenges among staff to promote and complete pneumococcal vaccinations in the adult population.[2] In order to help educate staff, a vaccine coordinator quarterly meeting was implemented. Vaccine coordinators are tasked with the responsibility to disseminate information to the frontline staff in their clinic. Through this meeting, coordinators are able to network with each other to identify peer and physician champions on campus to act as resources, as well as to share external and online resources. Required attendees include the primary coordinator, one back-up coordinator, and the clinic manager of each clinic administering vaccines. Each meeting included presentations by pharmaceutical representatives, physician champions, and/or research experts in the area of vaccinations or disease processes relevant to the quarterly topic. OU Physicians' clinical educators provided further staff education by developing an online training course. As a result, the Training and Development Department provides ongoing required education to all newly employed clinical staff. The Quality Department featured articles on both pneumococcal and influenza vaccinations in the campus monthly newsletter which is distributed to staff as well as providers.

Patient education included outreach using the OU Physicians' Patient Portal to notify patients at the beginning of the flu season if they were due for an influenza vaccine. Promotional advertisements during the flu season were displayed on television screens in patient waiting areas throughout campus. In order to promote pneumococcal vaccination for all patients over the age of 19, the organization created a form (see Appendix) for use at check-in. This form included a strong vaccine message encouraging patients to receive the pneumococcal vaccine, as well as a list of risk factors to aid staff in administering the correct vaccine. To those patients who opted to receive a pneumococcal vaccine outside of OU Physicians, blank vaccine records were distributed.

Decision support was built into the EMR to prompt staff and providers to administer pneumococcal vaccinations to

appropriate patients at the appropriate interval. Dashboards and chart prep files were also provided to clinics on a daily basis to assist in identifying vaccine-naïve patients and in administering vaccines. Monthly vaccination files were sent from our partnering hospital, which were then manually entered into the patient record. OU Physicians plans for future interfaces with our partnering hospital, as well as the state vaccination registry when made available.

Support for clinical staff was provided in many ways. First, OU Physicians created and distributed resources, which included a pneumococcal algorithm (see Appendix), job aide for EMR documentation, and decision support wheel created by Pfizer. Second, prior to the flu season, OU Physicians creates a bulk order for influenza vaccines. This allows streamlining of inventory within clinics and the ability to pre-populate required detailed documentation about vaccines such as brands, manufacturer, dose, NDC numbers, etc., in order to provide efficient documentation. Also, organizational leaders, department chairs, medical directors, and providers received service line, clinic specific, and provider level reports monthly.

OU Physicians created a contest between clinics to foster healthy competition and attention to improving adult immunizations. The clinics with the most relative improvement in influenza vaccine administration, pneumococcal vaccine administration, along with the most creative campaign slogan and promotional tools were awarded prizes. The winning clinic for most improved pneumococcal vaccine rates had a relative improvement of 29.3% over the three-month contest. The winning clinic for most improved influenza vaccine rates saw a 13% relative improvement.

Compensation of staff occurs biannually through improvement of service, quality, and finance goals. The organization sets annual achievement bands for each goal, which includes improving influenza vaccine rates during the 2018 fiscal year. OU Physicians currently compensates providers for other improvement measures but does not provide compensation for improved vaccine rates.

## Outcomes and Results

Historically, OU Physicians has only measured pneumococcal vaccine rates for patients aged 65 and older as required with participation in Medicare's Merit-Based Incentive Payment System (MIPS).[3] The AI Collaborative allowed the group to focus on measuring and improving rates of pneumococcal vaccines for at-risk and high-risk populations as well.

Measure 1 showed an improvement of 2.1% in administration of any of the pneumococcal polysaccharide vaccine (PPSV) and pneumococcal conjugate vaccine (PCV) to patients over 65 years (see Appendix). This improvement correlates with the clinic contest and strategy of administering pneumococcal vaccine at the time of influenza vaccination. The focus of the group to identify gaps in documentation was made a priority. Future goals include improvements for increasing vaccination rates for this measure in the organization.

Measure 1 showed a 37% increase in patients vaccinated with both PPSV and PCV in patients over 65 years (see Appendix). Baseline data indicated a significant number of vaccines were being recorded as unknown by staff who were documenting historical vaccines. After staff education, documentation was improved to better reflect accurate historical vaccinations appropriate for the patient's age and diagnosis. Improved staff understanding of pneumococcal vaccine schedules and focused clinic campaigns to complete all required vaccine doses may have contributed to the noted decrease in documented unknown vaccines in this measure. Interventions, such as general staff education and using the new check-in sheet, allowed staff to better identify which pneumococcal vaccine the patient had previously received.

Measure 2 showed incremental improvement in patients aged 19-64 with high-risk conditions (see Appendix). With a baseline rate of 29.8%, OU Physicians completed the fifth quarter at 40.1%. Additionally, the documentation of historical vaccines has improved and staff have been able to better identify the previously given vaccine. This recognition allows for completed vaccine doses in the future. Although the organization did not sustain the rate of improvement, the group did accomplish a 5.8% increase for Measure 2A at-risk population (see Appendix).

OU Physicians exceeded the AI Collaborative goal for Measure 3 (influenza immunization) with 57.0% in the fifth quarter (see Appendix). Improvement has been significant since the initial organizational focus was implemented in 2015. With the original focus on screening patients for influenza vaccine, OU Physicians capitalized on this collaborative to improve administration rates.

## Lessons Learned and Ongoing Activities

Although the AI Collaborative goal of 90% for Measure 1 was not met, OU Physicians did acquire valuable knowledge and

understanding of the data they currently document and report. Recognizing a knowledge gap in patient-reported vaccine types, staff understanding of recommended vaccines and vaccine schedules, lead to the realization that these areas had to be addressed in order to improve overall rates. Improved documentation of historical vaccines in turn allowed for completion of the series for many patients. The education of staff and an organizational focus on improving vaccine rates for adults are a foundation for future efforts of improvement.

Two main locations of care, the Oncology and Infectious Disease clinics, addressed high-risk condition populations for Measure 2. Consequently, this narrow focus limited the number of patients aged 19-64 who may be seen in other locations of care and were not identified as needing or receiving a pneumococcal vaccine. Additionally, the Oncology Center clinics provided all vaccines through a central location. This limitation resulted in patients leaving prior to receiving vaccines due to inconvenience factors. As a result of these findings, beginning in the fall of 2018 all clinics in the Oncology Center will administer vaccines during scheduled appointments and no longer require additional wait time or change in location for patients.

To minimize the overwhelming requirements of staff to understand risk factors, recommendations, requirements, and schedules in order to administer pneumococcal vaccines, OU Physicians chose to limit the focus of Measure 2A to include only smokers and diabetics in the EMR decision support. As a result, many patients with other qualifying at-risk conditions were not as likely to be routinely identified as needing vaccination. In the future, EMR decision support should be expanded to include all other risk factors. Vaccine availability should also be expanded to clinics who serve at-risk patients such as the Cardiovascular, Pulmonary, and Allergy clinics. Measure 2A achieved a 6.7% increase from baseline after the fifth quarter. Future collaboration of provider champions, staff, and organizational leadership will ensure continued improvement of vaccine rates for this population.

An initial approach to improving Measure 3 was to implement compensation of both physicians and staff. Prior to the AI Collaborative, this effort resulted in improved screening rates and, through the AI Collaborative, improved vaccination rates. The collaborative goal was exceeded by 12% with a vaccination rate of 57.0%. Next steps include measurement of sustainability, as compensation will no longer be provided for influenza vaccination rates in the 2018-2019 fiscal year. Furthermore, efforts to attain HP2020's goal of 70% will include interface capabilities with external pharmacies, use of claims data with contracted payers, and inclusion of OU Physicians' workforce annual required immunization data.

As a specialty-driven organization, the group recognized financial impact and specificity of practice as barriers to provider and clinic buy-in. Start-up costs of vaccine storage and handling, staff time and understanding, and effort to collect historical vaccination documentation have deterred specialty clinic engagement. In the future, the organization must identify a plan of action to address patients who are seen in predominately specialty care areas rather than primary care, due to acute illness or chronic disease management.[4]

## References


1. Office of Disease Prevention and Health Promotion (ODPHP). Healthy People 2020. healthypeople.gov.

2. Kobayashi, M., Bennett, N. M., Gierke, R., Almendares, O., Moore, M. R., Whitney, C. G., & Pilishvili, T. (2015). Intervals Between PCV13 and PPSV23 Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP). Retrieved from www.cdc.gov/mmwr/preview/mmwrhtml/mm6434a4.htm.

3. ECQI Resource Center. (2018). Pneumococcal Vaccination Status for Older Adults. Retrieved from ecqi.healthit.gov/ecqm/measures/cms127v5.

4. Hing E, Albert M. (2016) State variation in preventive care visits, by patient characteristics, 2012. NCHS data brief, no 234. National Center for Health Statistics. Retrieved from cdc.gov/nchs/products/databriefs.htm.

# Collaborative Goals

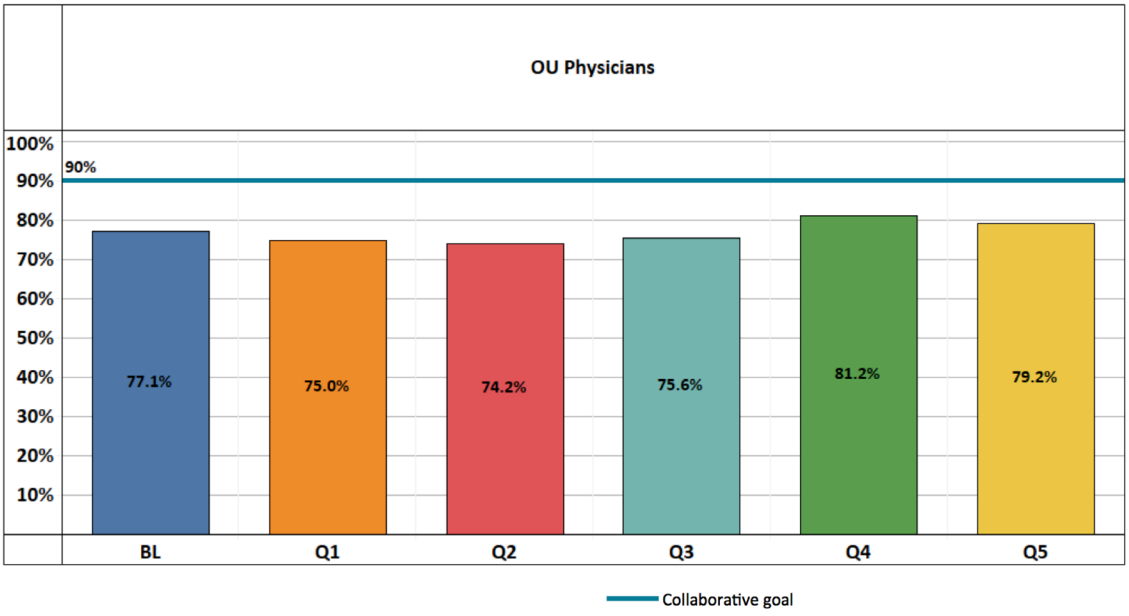
| Measure | Healthy People 2020 | Collaborative Goal |
|---|---|---|
| Measure 1 (65+) Any | 90% | 90% |
| Measure 1 (65+) Both PPSV and PCV* | 90% | 60% |
| Measure 2 (High-Risk) | 60% | 45% |
| Optional Measure 2a (At-Risk)** | | |
| Measure 3 (Flu) | 70%/90%*** | 45% |

* 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.

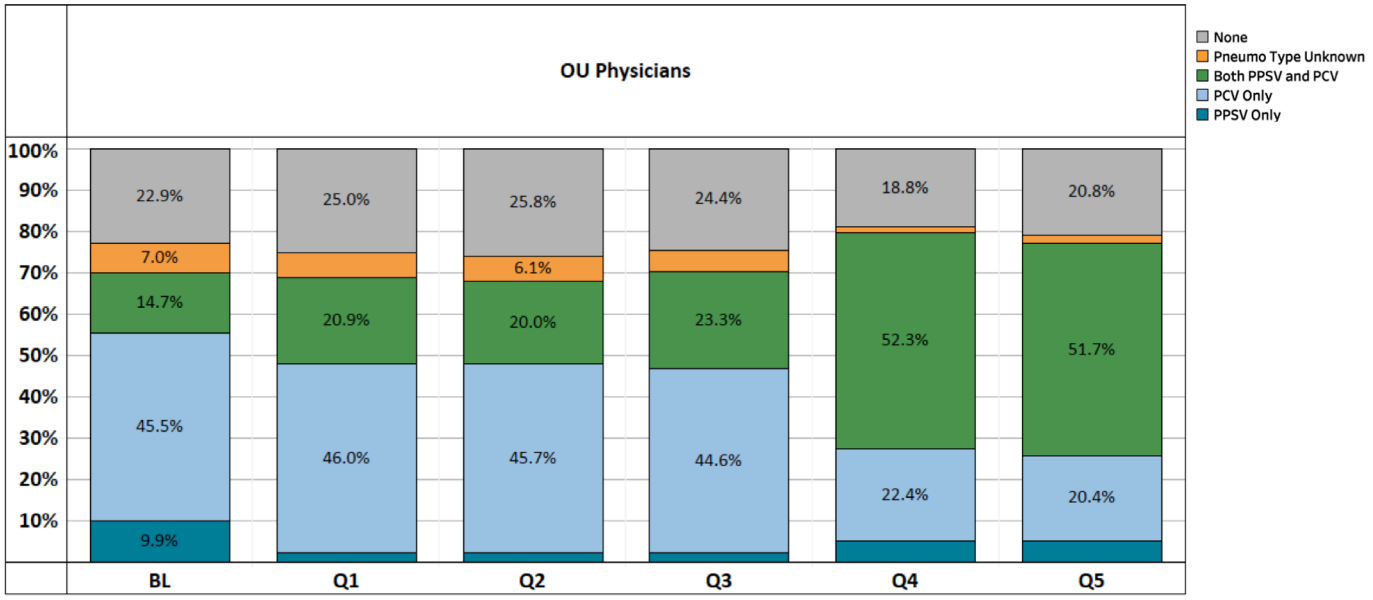
*** 70% for all patients, 90% for Medicare patients

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

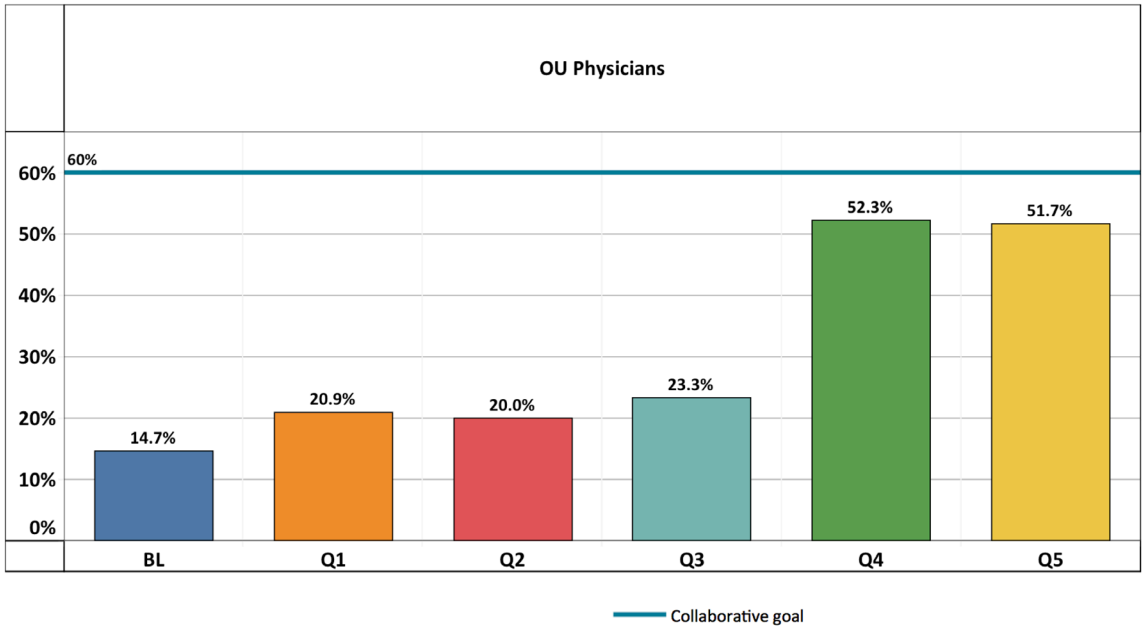


# Appendix

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

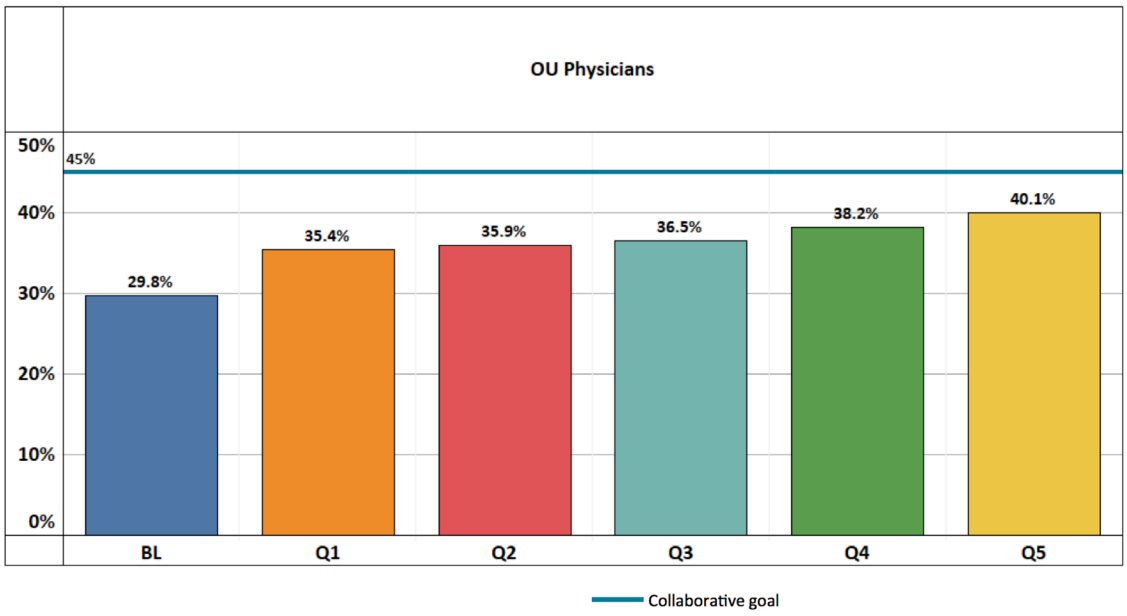



## Measure 1 – Both PPSV and PCV Immunization for Adults Ages ≥ 65

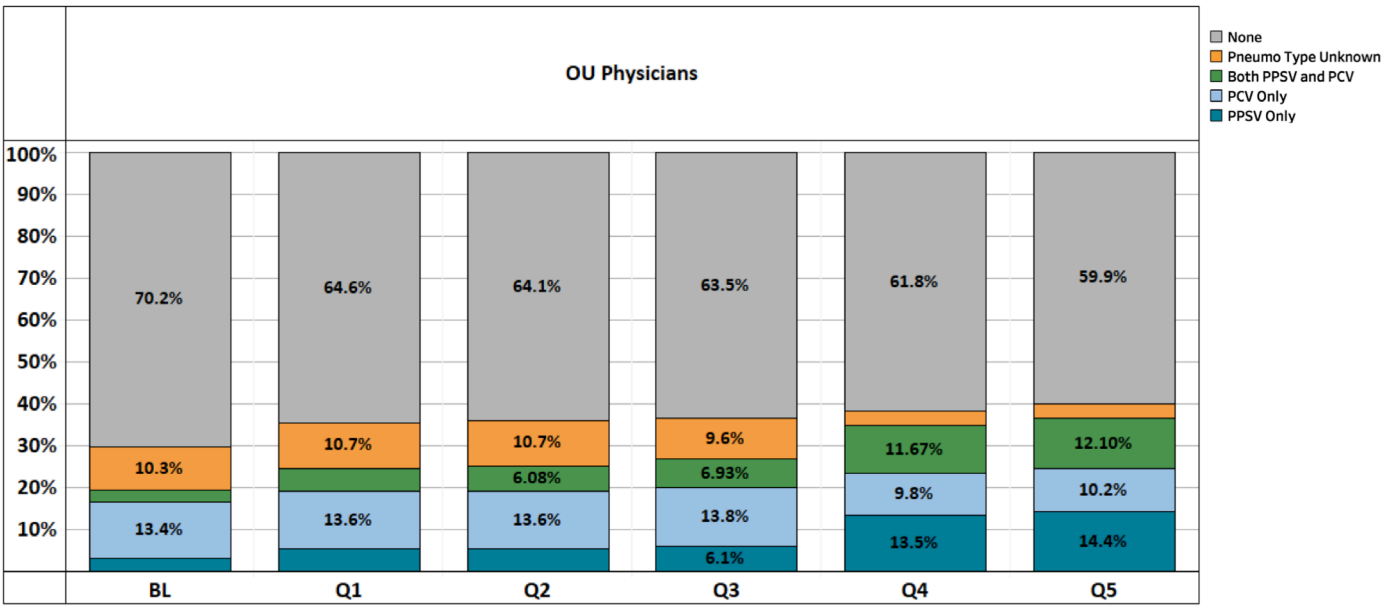


# Appendix

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

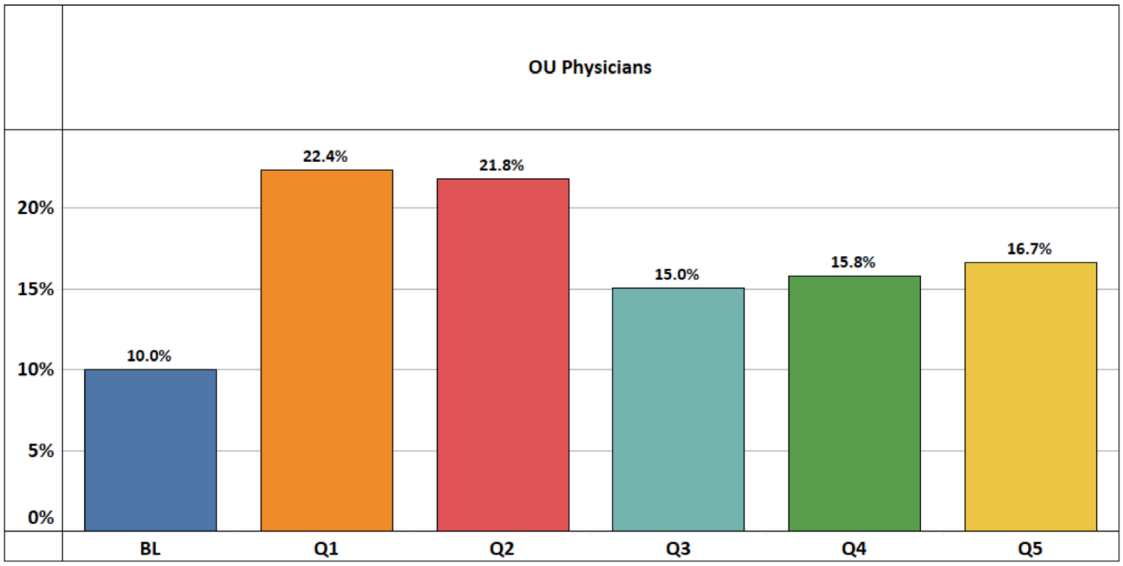



## Measure 2 – Pneumococcal (Any) Immunization for Adults Ages 19–64 with High-Risk Conditions

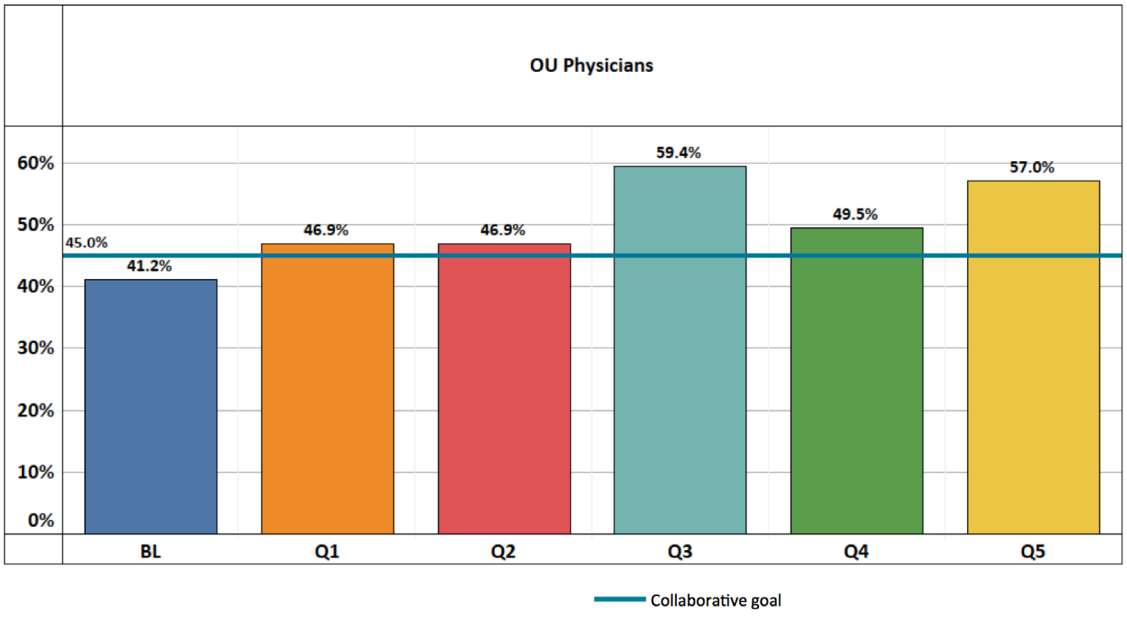


# Appendix

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




## Measure 3 – Influenza Immunization, Age ≥ 18



# Pneumococcal Disease Protection

**Pneumococcal Disease can cause an infection of the lungs, blood or brain.**
**Protect yourself from pneumococcal disease…**

## GET VACCINATED!

**Please talk to your doctor about *Prevnar (PCV13)* and *Pneumovax (PPSV23)*, as these vaccines prevent pneumococcal disease.**

It is strongly recommended patients ages 19 to 64 receive pneumococcal vaccine if they have any of the health conditions or risk factors in the tables below. Patients ages 65 and older should receive both Pneumovax and Prevnar.

***Prevnar (one dose) and Pneumovax (booster dose every 5 years):***

| High Risk Medical Condition or Risk Factor | Check All Applicable |
|---|---|
| Cochlear Implant or Cerebrospinal Fluid Leak | |
| Sickle Cell or other blood disease | |
| Your spleen has been removed or does not work well. | |
| Your immune system is compromised or entirely absent, HIV | |
| Chronic Kidney Failure, Nephrotic Syndrome | |
| Cancer; Leukemia, Lymphoma, Hodgkin disease, Multiple Myeloma. | |
| Taking immunosuppressive drugs, such as oral or IV Chemotherapy, or long-term steroids | |
| Solid Organ Transplant | |

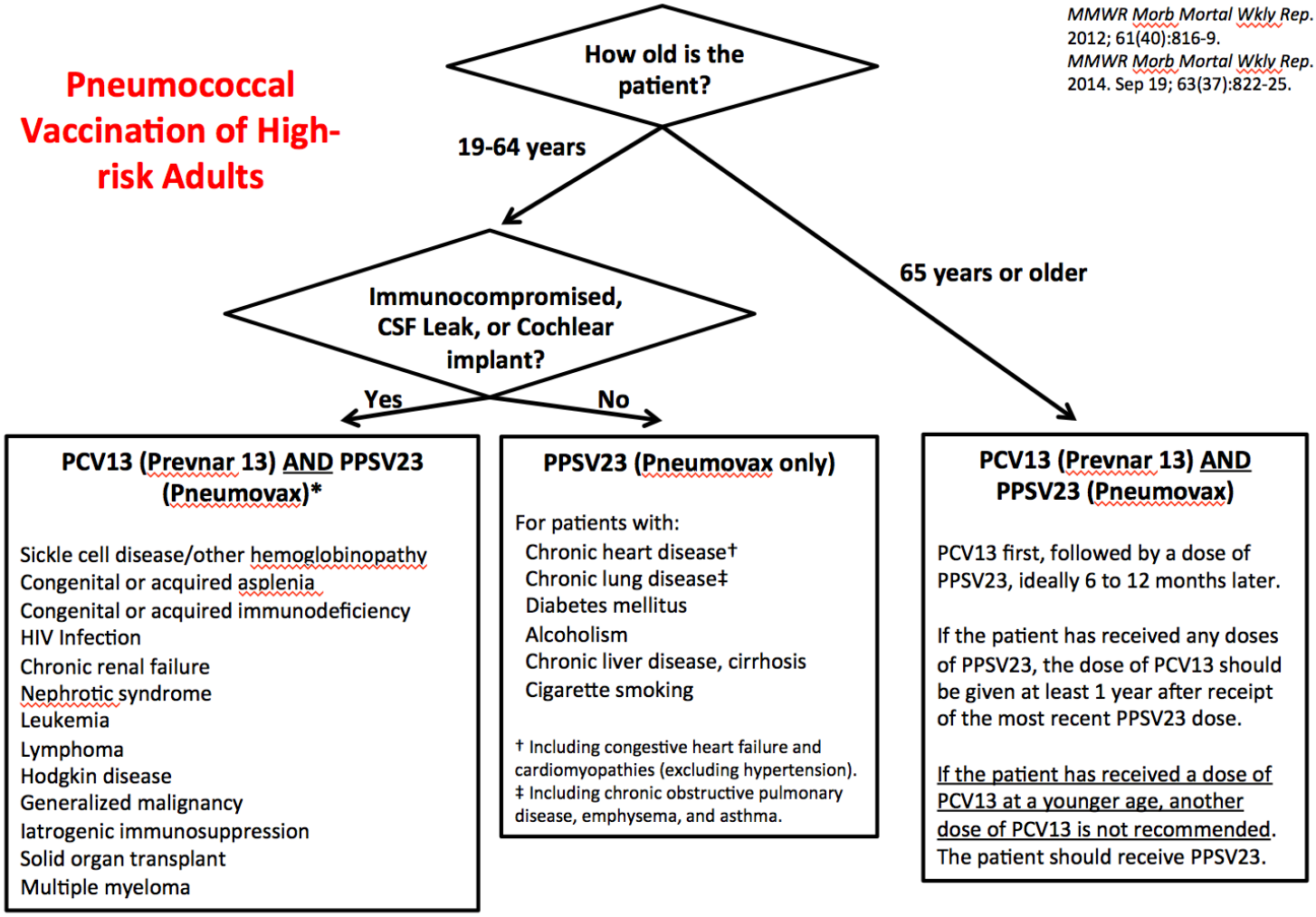
***Pneumovax (booster dose every 5 years):***

| Moderate Risk Medical Condition or Risk Factor | Check All Applicable |
|---|---|
| Chronic Heart Disease (Heart Failure, Cardiomyopathies) | |
| Chronic Lung Disease (Asthma, COPD, Emphysema) | |
| Chronic Liver Disease, Cirrhosis | |
| Diabetes Mellitus | |
| Current Cigarette Smoking | |
| Alcoholism | |

OU Physicians

# Appendix

## Pneumococcal Vaccination of High-risk Adults




*MMWR Morb Mortal Wkly Rep.* 2012; 61(40):816-9.
*MMWR Morb Mortal Wkly Rep.* 2014. Sep 19; 63(37):822-25.

* All patients ages 19 through 64 years who are immunocompromised or who have functional asplenia should receive PCV13 followed by PPSV23 at least 8 weeks after their PCV13 dose. These patients should also be revaccinated with PPSV23 five years after their first PPSV23 dose.
- Includes B- (humoral) or T-lymphocyte deficiency, complement deficiencies (particularly C1, C2, C3 and C4 deficiencies), and phagocytic disorders.
- Diseases requiring treatment with immunosuppressive drugs, including long-term corticosteroids and radiation therapy.

OU Physicians adult immunization contest winners; OU Physicians Lawton Family Medicine clinic.

OU Physicians Vaccine Coordinators with Senior Leadership.

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