



Advancing High Performance Health

AMGA Foundation

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

***Premier Medical
Associates***
Pittsburgh, PA



Organizational Profile

Premier Medical Associates (PMA) is the largest multispecialty practice in its region. It is located in the eastern suburbs of Pittsburgh, Pennsylvania, and was formed in 1993. The practice belongs to an integrated delivery system; PMA has been a part of Highmark Health since late 2011 and is a member of the Allegheny Health Network. The nearly 100 providers of the practice are evenly divided between primary care providers and specialists. There are currently 19 family practice providers assisted by four APPs (advanced practice providers) and seven internal medicine providers assisted by one APP. All adult primary care offices have achieved Level 3 patient-centered medical home recognition from the National Committee for Quality Assurance (NCQA 2014 standards). Ten outpatient office locations are available for patient care. The practice has touched the lives of 100,000 patients over the last several years, and 377,000 outpatient visits occurred in 2017.

Executive Summary

Pneumococcal and influenza illnesses can result in significant morbidity and mortality, ravaging the lives of many. In 2013, there were 33,300 cases of pneumococcal illness and 3,700 deaths due to the infection in the United States.^{3,4} Nearly 91% of these deaths were in the adult population. Influenza is no less imposing. It is estimated that it poses an economic burden of over \$87 billion dollars a year and can result in significant morbidity and/or mortality. Lost earnings of \$16.3 billion dollars occur annually as a result of the influenza virus. Both illnesses can significantly impact the adult population, whether it is the patient, the impact that caregivers may experience, or the health system in general.¹ PMA's goal in collaborating with other groups involved in AMGA's Adult Immunization Best Practices Learning Collaborative (AI Collaborative) was to improve vaccination rates across four categories:

- Pneumococcal immunization in any >65 individual to match the Healthy People 2020 goal of 90%
- To vaccinate adults aged 19-64 who have high-risk conditions at a rate of 60%, meeting the Healthy People 2020 goal of 90%
- To increase pneumococcal vaccination in at-risk individuals overall
- To increase annual influenza vaccination rate to 45%, meeting the Healthy People 2020 goal of 70%

Acronym Legend

ACIP: Advisory Committee on Immunization Practices
AI Collaborative: AMGA's Adult Immunization Best Practices Collaborative
APP: Advanced practice provider
CDC: Centers for Disease Control and Prevention
EHR: Electronic health record
HP2020: Healthy People 2020
PCV: Pneumococcal conjugate vaccine
PMA: Premier Medical Associates
PPSV: Pneumococcal polysaccharide vaccine

In an effort to reduce the burden of illness, the PMA team began a campaign to decrease the development of these infections among patients of the practice through education and ultimately vaccination. Through provider education, support staff education, patient education, outreach (electronic and targeted), PMA was able to increase the pneumococcal vaccine rates to greater than 95% for >65-year-olds, 48% for high-risk adults, and 70.4% for at-risk adults. Additionally, influenza vaccination rates increased to 74.9% by December 31, 2017. It is hoped that this number will be even larger by the end of the 2017-18 influenza season.

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)², baseline data for each group, and with input from the Collaborative advisors (see Appendix).

The goal of PMA was to meet or exceed the improvement rates in the adult population set forth by the AI Collaborative via targeted outreach and educational interventions that would ultimately benefit health outcomes in PMA's adult population. To measure success, quarterly reports of vaccine administration were monitored via electronic health records (EHRs), which were objectively assessed to mark progress toward such goals. Additionally, efforts would be directed toward improving vaccination rates in the at-risk population served. No parameters were set for this measure since it was optional; thus, any improvement was acceptable.

Data Documentation and Standardization

PMA was one of the groups that utilized Optum One to pull and standardize the data for this endeavor. Optum One is a health information technology and services firm that is a part of UnitedHealth Group. PMA's IT team pulled data based on specs given by AMGA in a webinar via standard diagnostic codes given to the entire AI Collaborative.

Population Identification

To implement PMA's objectives, 19 family practice providers, seven internal medicine providers, five primary care APPs, four cardiologists, one endocrinologist, and two pulmonologists were designated for this intervention. These specialty providers were included because the scope of their practices is significantly impacted by pneumococcal and influenza illness. All ten sites participated in the AI Collaborative since all provide adult medical care. PMA actively serves a population of 63,000 adult patients with 32.8% being over age 65. High-risk and at-risk patients were identified via a set of diagnosis codes on the Allscripts EHR.

Intervention

Based on the AI Collaborative measures, PMA's goal was to increase overall vaccination rates for pneumococcal illness and influenza in adults in adherence to the AI Collaborative's base levels. To achieve this goal, several objectives were developed and set in motion. Objectives were categorized as educational, targeted outreach, and implementation of standing orders. Educational materials were developed based on information referenced from the AI Collaborative's tool kit as well as additional data from the Centers for Disease Control and Prevention (CDC). Vaccine recommendations were adopted from the CDC's subcommittee, the Advisory Committee on Immunization Practices (ACIP). Three populations were targeted for education in order to address all aspects of interaction with the patient: providers, support staff, and patients and patient families. Three months prior to launch, the providers were gathered for an educational PowerPoint presentation that described the morbidity and mortality associated with a potentially preventable pneumococcal infection. Included with this presentation were the vaccination indications and recommendations and an easy-to-follow algorithm.

Table 1

Premier conducted three outreach campaigns with Optum One and Emmi solutions. The electronic medical record was used to identify populations across all 3 populations:

- Patients > 65 years old,
- Patients 19 – 64 with at least 1 high risk condition, and
- Patients 19 – 64 years of age with at least one at risk condition.

The patients were uploaded into Optum One for outreach and result tracking.

Calls were customized to identify the call as coming from Premier, and to announce the name of the patient's PCP.

Once connected, patients were told that a pneumonia vaccine was due, and given education about the importance of vaccination. The patient could then elect a soft transfer to schedule an appointment, make a note of provider contact information to schedule at a later date, or state that the vaccination had been received.

Population	# Patients Identified	# Engaged	% Engaged	Engaged Patients Vaccinated	% Engaged Patients Vaccinated
65+, needing one or more	1,295	524	40.5%	215	41%
19 – 64 high risk needing one or more	840	592	70.5%	112	18.9%
19 – 64 at risk ONLY needing one or more	5,702	2676	46%	935	34.9%

Providers were also made aware of the transparent reporting that would take place going forward. Focusing on support staff, a standardized PowerPoint presentation was given by three providers at various staff meetings in order to cover why vaccination was important and to provide talking points when addressing the patients who had questions. Separate presentations were given for pneumococcal disease and influenza (the flu presentation was given at the start of the flu season). The influenza presentations incorporated various myths submitted via an anonymous staff survey. The objective of these processes was to not only educate everyone who had contact with the patient, but also to obtain buy-in from everyone who may interact with the patient whether it be via phone or preparing the patient to see the provider in the office.

For the education of the patient, electronic messages were sent via an electronic portal to alert portal users that the person receiving the message may need an immunization. Printed materials were also given to the patients during office visits to explain what the vaccinations were intended to prevent. Staff members were provided talking points about vaccination if they encountered patient questions. Being armed with this knowledge also enabled staff to exude a positive attitude about vaccinations in general. Additionally, staff were able to initiate vaccinations prior to seeing the provider in most cases due to standing orders based on the algorithm. If the provider needed to give any additional encouragement, their involvement was the last (yet very effective) step toward helping the patient consent to vaccination.

Getting patients into the office for vaccination was accomplished via scheduled visits and targeted outreach. This outreach was initiated via a robotic call system called Emmi that contacted 5,707 patients who were eligible for vaccination

based on a data query done via EHR. One hundred and seventy patients were then transferred to a live staff member in order to make an appointment. Two thousand six hundred and seventy-six patients engaged with Emmi either by speaking to an office assistant directly or by listening to the message and making an appointment, leading to 935 patients (34.9%) being vaccinated. The messages were tailored to include their specific provider’s name and a caller ID that confirmed the call came from their provider. Finally, contests to identify and reward the offices with the most improved influenza vaccination rates were held as an additional incentive to keep the support staff motivated and focused throughout a long flu season.

Outcomes and Results

Based on the table below (Table 2), there was a notable increase from baseline numbers in all measures. AI Collaborative goals were exceeded in all measures with the exception of the at-risk group, for which there was no formal goal. The final percentage change for baseline averaged 8% with the largest change being 14% in the influenza rates. Of note, at the onset of the measuring period PMA baseline rates had already exceeded AI Collaborative goals in both the pneumococcal vaccination in adults over age 65 and in influenza vaccination, but also continued to rise throughout the year. While the rate at which patients over age 65 received any pneumococcal vaccine showed the least improvement overall, the number of them receiving both the pneumococcal polysaccharide vaccine (PPSV) and the pneumococcal conjugate vaccine (PCV) increased with a 10% improvement from baseline rates. The influenza vaccination rate (Measure 3) was much lower in the third quarter as compared to other quarters due to the measure existing prior than the time annual flu vaccinations are typically given.

Table 2

Measure	Healthy People 2020	Collaborative Goal	Premier Medical Associates
Measure 1 (65+) Any	90%	90%	95.7%
Measure 1 (65+) Both PPSV and PCV	90%	60%	78.1%
Measure 2 (High-Risk)	60%	45%	48.8%
Optional Measure 2a (At-Risk)			72.5%
Measure 3 (Flu)	70%	45%	

Lessons Learned and Ongoing Activities

During and after the conclusion of the AI Collaborative, monthly assessments of interventions and improvement in PMA's vaccination rates continued via the EHR. This data was distributed monthly to providers as transparent reporting. Assessment was performed on an individual provider basis through the utilization of dashboard reports and with team huddles that utilized pre-visit planning to ensure that every caregiver was aware of which vaccinations each patient was eligible for.

The culture of PMA is one of high performance. Such a mindset is a motivator; however, there are certainly gaps that, if overcome, could make outcomes even better. One notable gap is the lack of a bi-directional communication with the Pennsylvania state registry. Such a connection would allow for the data capture of those vaccines administered at pharmacies, urgent care centers or other places outside network. Another gap is limited access. While a large number of patients were able to get vaccinated, the immunization neighborhood could have been increased by networking with local pharmacies to vaccinate PMA patients in conjunction with a method for collecting feedback reporting for data capture. Lastly, the media directly affected efforts to distribute the flu vaccine initially when they reported the vaccines' potentially low effectiveness. (There is no direct way to measure such an impact.) Ironically, when the media outlets later reported that more people were dying from the flu this past year, that probably didn't sway those who decided on not getting the flu vaccine based on previous media statements.

Going forward, the biggest challenges are to maintain the progress that was made year after year and to keep these measures at the forefront during all eligible patient visits as PMA simultaneously strives to improve outcomes in other areas. Supporting this, the Allscripts EHR dashboard is ongoing and always a keystroke away for provider self-management. Continuing to use transparent reports will also help keep the pneumococcal vaccines front and center. Fortunately, influenza vaccine awareness gets an automatic reboot yearly as the new flu season approaches. These reminders, in combination with enacting mandatory staff-oriented tutorials may help spread awareness just enough without causing fatigue.

References

1. Centers for Disease Control and Prevention. (2018, May 29). National Center for Health Statistics. Retrieved from [cdc.gov/nchs/index.htm](https://www.cdc.gov/nchs/index.htm).
2. Office of Disease Prevention and Health Promotion (ODPHP). Healthy People 2020. [healthypeople.gov](https://www.healthypeople.gov).
3. Centers for Disease Control and Prevention (2017, Nov.) Pneumococcal Disease Retrieved from [cdc.gov/pneumococcal/about/facts.html](https://www.cdc.gov/pneumococcal/about/facts.html).
4. Immunization Action Coalition (2017, Nov) Pneumococcus: Questions and Answers Retrieved from [immunize.org/catg.d/p4213.pdf](https://www.immunize.org/catg.d/p4213.pdf).

Collaborative Goals

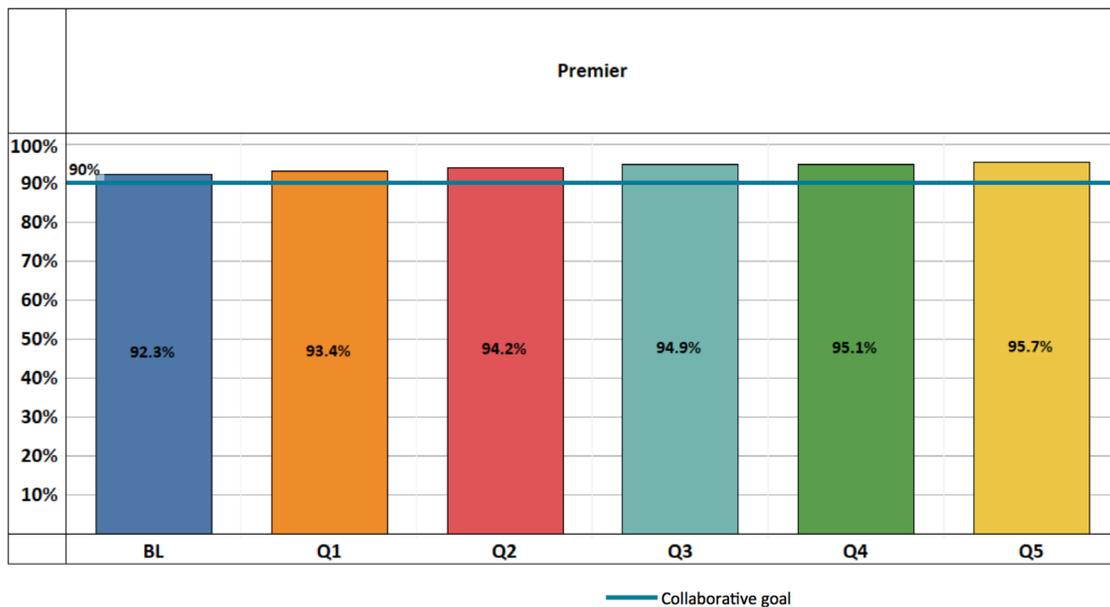
Measure	Healthy People 2020	Collaborative Goal
Measure 1 (65+) Any	90%	90%
Measure 1 (65+) Both PPSV and PCV*	90%	60%
Measure 2 (High-Risk)	60%	45%
Optional Measure 2a (At-Risk)**		
Measure 3 (Flu)	70%/90%***	45%

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

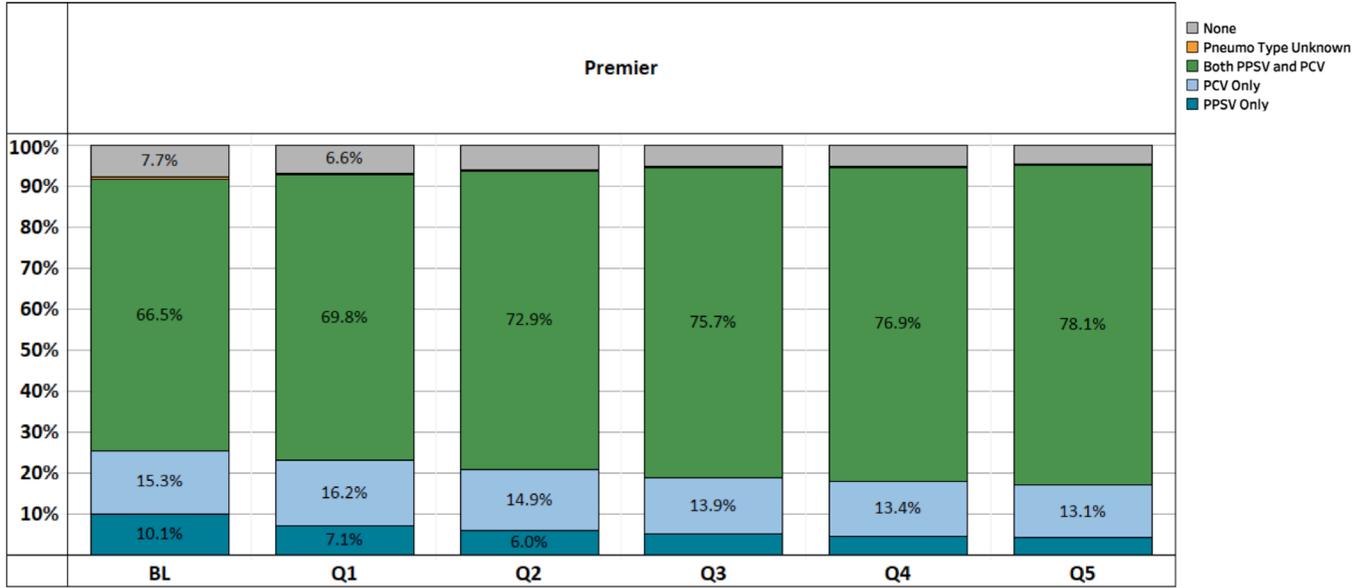
** According to CDC guidelines, it is not currently recommended that the at-risk population receive PCV. Therefore, “PPSV” or “Unknown pneumococcal vaccination” are numerator options for Measure 2a.

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

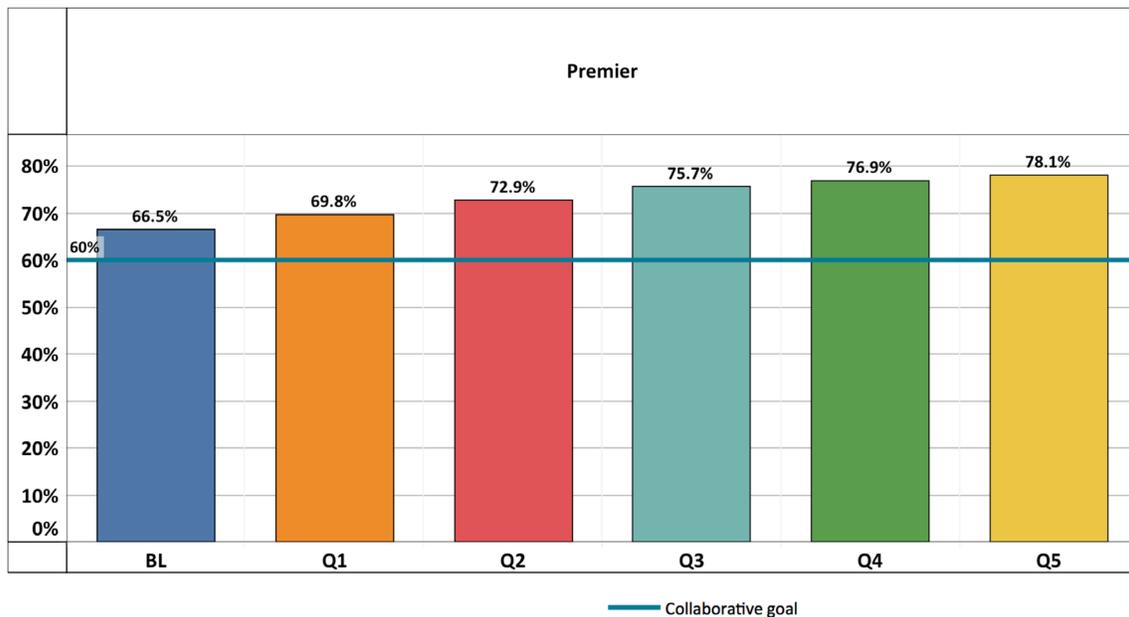
Measure 1 – Pneumococcal (Any) Immunization for Adults Ages ≥ 65



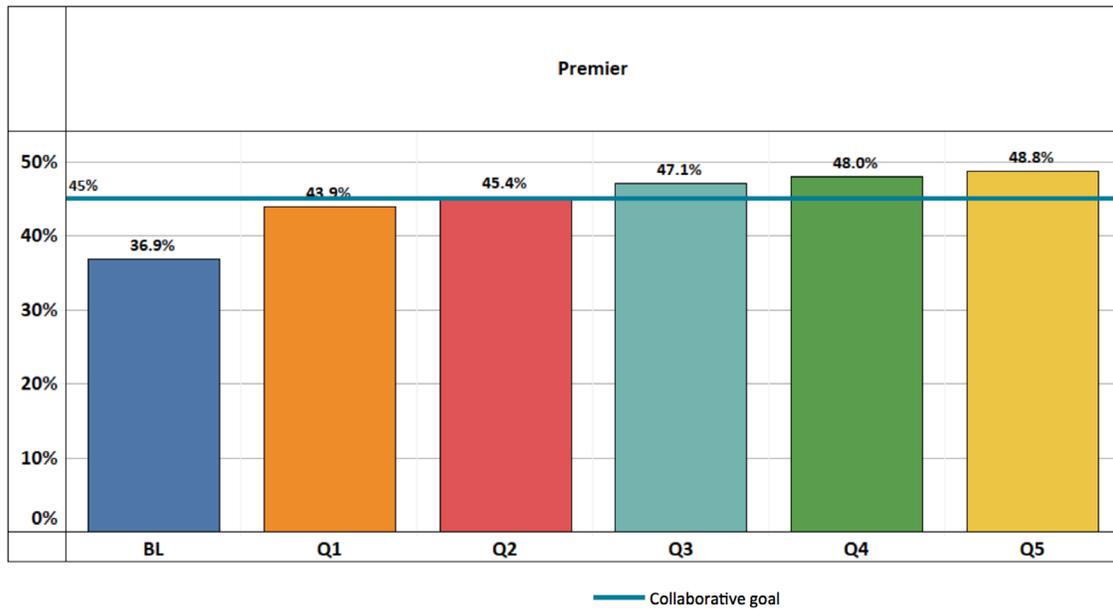
Measure 1 – Pneumococcal (Any) Immunization for Adults Ages ≥ 65



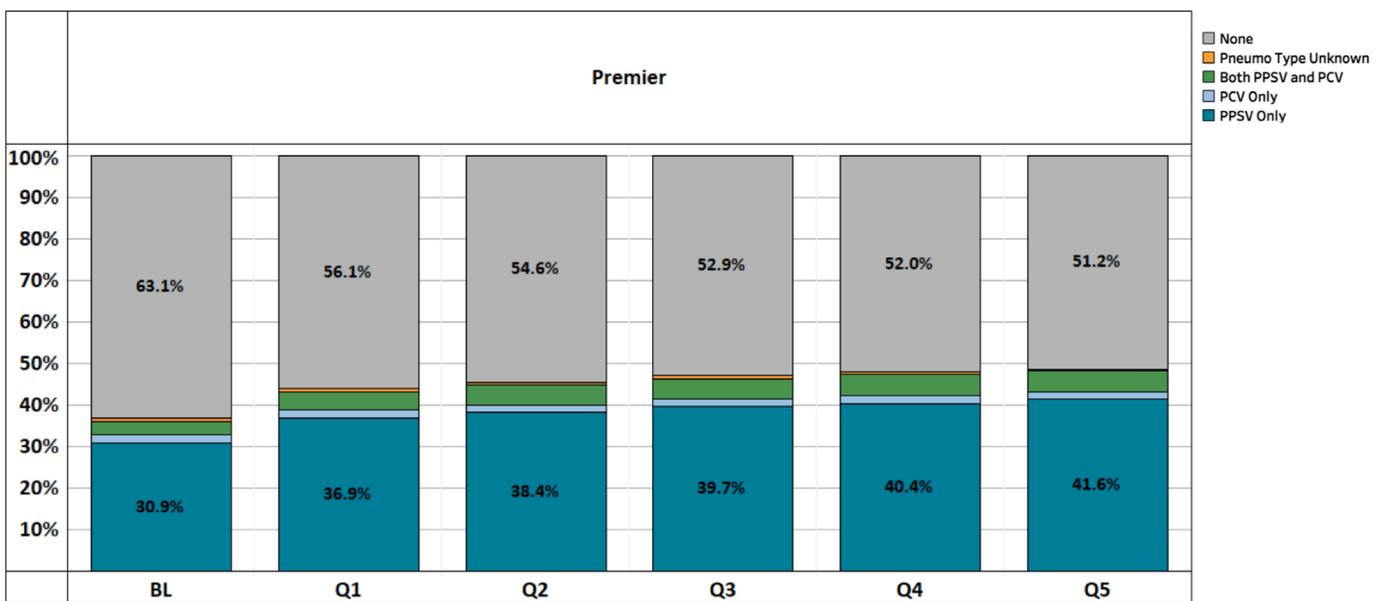
Measure 1 – Both PPSV and PCV Immunization for Adults Ages ≥ 65



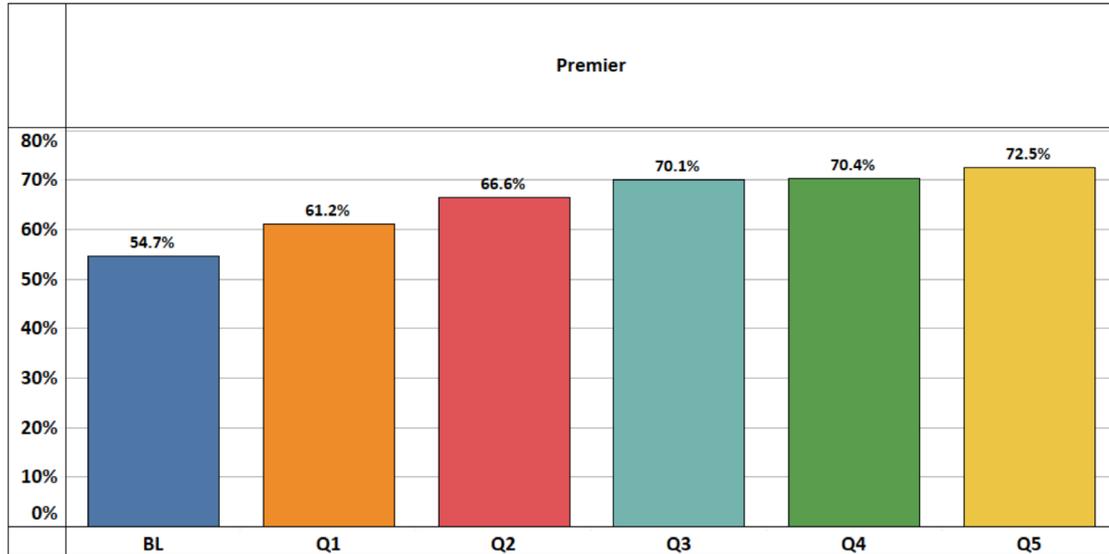
Measure 2 – Pneumococcal (Any) Immunization for Adults Ages 19–64 with High-Risk Conditions



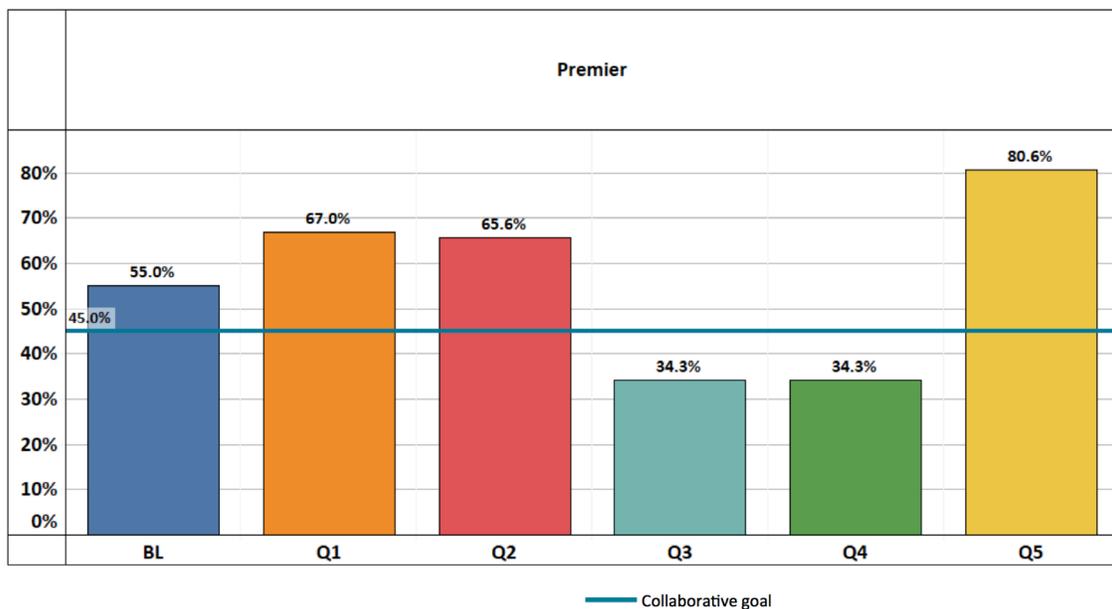
Measure 2 – Pneumococcal (Any) Immunization for Adults Ages 19–64 with High-Risk Conditions



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



Measure 3 – Influenza Immunization, Age ≥ 18



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