



Advancing High Performance Health

AMGA Foundation

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

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***Norton Healthcare  
Louisville, KY***



## Organizational Profile

For more than 130 years, Norton Healthcare's faith heritage has guided its mission to provide quality health care to all those it serves. Today, Norton Healthcare is a leader in serving adult and pediatric patients throughout Greater Louisville, Southern Indiana, the commonwealth of Kentucky, and beyond. The hospital and healthcare system is the Louisville area's third largest private employer, providing care at more than 250 locations throughout Kentucky and Southern Indiana. The Louisville-based not-for-profit system includes five Louisville hospitals with 1,837 licensed beds; seven outpatient centers; 14 Norton Immediate Care Centers; more than 14,000 employees; more than 900 employed medical providers; and approximately 2,000 total physicians on its medical staff. Hospitals provide inpatient and outpatient general care as well as specialty care including heart, neuroscience, cancer, orthopedic, women's health, and pediatric services. A strong research program provides access to clinical trials in a multitude of areas. In 2017, Norton Healthcare was named by Healthiest Employers as the sixth healthiest place to work in the country.

Norton Medical Group (NMG) maintains 24 years of experience operating physician practices and Norton Immediate Care Centers throughout Kentucky and Southern Indiana. A division of Norton Healthcare, NMG provides comprehensive management and support services to its medical providers and locations. More than 900 employed medical providers and nearly 2,200 employees work at more than 250 locations. Patients have access to multidisciplinary resources through the division's extensive network of primary and specialty care practices and urgent care centers. In 2017, Norton Medical Group had 757,000 primary care visits and over one million specialist visits.

## Executive Summary

Norton Medical Group was selected as one of 21 medical groups to participate in AMGA's Adult Immunization Best Practices Learning Collaborative (AI Collaborative) in 2017. The goal of the AI Collaborative was to increase immunization rates for influenza and pneumococcal vaccinations.

Improving immunization rates for the patients Norton Healthcare serves directly aligns with Norton Healthcare's Vision: "We will be the region's most comprehensive, strongest, and preferred healthcare organization, setting the standard for quality and caring."

## Acronym Legend

<b>AI Collaborative:</b>	AMGA's Adult Immunization Best Practices Collaborative
<b>BPA:</b>	Best Practice Advisory
<b>CDC:</b>	Centers for Disease Control and Prevention
<b>COPD:</b>	Chronic obstructive pulmonary disease
<b>EMR:</b>	Electronic Medical Record
<b>HIM:</b>	Health Information Management
<b>HM:</b>	Health Maintenance
<b>HP2020:</b>	Healthy People 2020
<b>ICC:</b>	Immediate Care Center
<b>NMG:</b>	Norton Medical Group
<b>PI:</b>	Performance Improvement
<b>PQRS:</b>	Physician Quality Reporting System
<b>PCV13:</b>	Pneumococcal Conjugate Vaccine
<b>PPSV23:</b>	Pneumococcal Polysaccharide Vaccine

In 2015, NMG created a multidisciplinary Vaccine Taskforce that focused on improving vaccine processes and immunization rates. The Vaccine Taskforce included immunization subject matter experts, making it the optimal team to support the AI Collaborative. The taskforce members include the following NMG staff:

- Chief Medical Administrative Officer
- System Vice President, Quality and Clinical Effectiveness
- Director of Quality and Clinical Effectiveness
- Pharmacy Director
- System Epidemiologist
- Operational Directors
- Providers from primary care and pediatrics
- Director of Risk
- Director of Safety
- Clinical Educators
- Clinic Managers

The Vaccine Taskforce started the AI Collaborative work by creating and establishing the Norton Vaccine Philosophy and reviewing current process deficiencies in vaccine administration and documentation. The team prioritized focusing on patient education, staff/provider education, information technology, and clinical support for the project initiatives. A performance improvement (PI) project focusing

on improving the vaccine administration process, vaccine storage, and administering vaccines safely was initiated.

## 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)<sup>1</sup>, baseline data for each group, and with input from the AI Collaborative advisors (see Appendix).

Norton Medical Group did not set additional goals, but instead focused on improving the overall vaccine administration process as a part of the AI Collaborative, which would then support system-wide improvements to increase vaccine administration rates.

## Data Documentation and Standardization

Though influenza and pneumococcal vaccination rates have been monitored since the implementation of Epic and Meaningful Use/Physician Quality Reporting System (PQRS) between 2012 and 2013, the exact AI Collaborative specifications weren't automatically available within Epic. At the onset of the AI Collaborative, Epic's Clarity Report Team created reporting built with the measure specifications for all five measures.

Immunization documentation varied among providers, staff, and specialties, but most commonly immunizations were captured in Health Maintenance Tables, Immunization Tables, CPT codes, and ICD-10 codes.

## Population Identification

For the AI Collaborative, the targeted patient population had a NMG primary care provider, but their qualifying visit could have been in one of NMG's 30 primary care offices, one rheumatology office, three endocrinology offices, or two infectious disease offices that carried vaccines, or another specialty that did not carry vaccines across NMG.

- 40,247 patients aged ≥65 in need of pneumococcal vaccination
  - Sex: 60% Female; 40% Male
  - Ethnicity: 88% Caucasian; 9% African American; 3% Other

- Payer Mix: 57% Traditional Medicare; 33% Medicare Advantage; 6% Anthem (which is also the Norton Employee Plan Benefit Administrator); 4% Other
- 33,663 patients aged 19-64 who had a high-risk pneumococcal condition in need of vaccination
- 13,337 patients aged 19-64 who had an at-risk pneumococcal condition in need of vaccination
- 164,907 patients age 18+ eligible for the influenza vaccine
  - Sex: 60% Female; 40% Male
  - Ethnicity: 82% Caucasian; 12.5% African American; 1% Asian; 1% Hispanic; 3.5% other/unknown
  - Payer Mix: 33% Anthem; Medicare 18%; Humana 13%; Medicare Advantage 11%; United Healthcare 6%; Passport 6%; Other 13%

There are two ways patient gaps in immunizations are highlighted by Epic—Health Maintenance (HM) and Best Practice Advisories (BPAs).

Influenza vaccination gaps are set up in Epic under HM and are tied to a BPA. Patients aged six months and older are included in the target population. The HM topic is active from August to April of the following year and is then satisfied by any record of flu vaccine given during the flu season.

Pneumococcal vaccination (Pneumococcal Conjugate Vaccine [PCV13] and Pneumococcal Polysaccharide Vaccine [PPSV23]) is set up in Epic under HM for patients aged 65 and older. This is rule-based and follows the Centers for Disease Control and Prevention (CDC) guidelines for the timing and administration of 13- and 23-valent pneumococcal vaccines. There is also a BPA tied to this HM topic for pneumococcal vaccination.

For at-risk pneumococcal disease, Epic has a standalone PPSV23 pneumococcal vaccine BPA for patients between the ages of 19 and 64 with chronic disease. This BPA evaluates if a patient is on the diabetes or chronic obstructive pulmonary disease (COPD) or congestive heart failure chronic disease registries or has an active problem list diagnosis of asthma or is a current smoker *and* if they have not received a PPSV23 vaccine in the past 100 years.

## Intervention

Through an affinity brainstorming activity using the AI Collaborative Framework, the NMG Vaccine Taskforce group

outlined the following interventions as a priority for the 18-month AI Collaborative:

- Create and implement an organizational vaccine philosophy
- Increase protocol (standing order) awareness and usage
- Obtain consent from employees to obtain employee health flu records
- Implement bi-directional connectivity with the Kentucky and Indiana Immunization Registries
- Create and distribute provider education about the AI Collaborative and the Vaccine Taskforce
- Increase access to vaccines by adding flu and pneumonia vaccines in cardiology and pneumonia vaccines in OB/GYN
- Create awareness of vaccine schedules for patients
- Add flu and pneumonia vaccine administration to immediate care centers (urgent care)

Also, starting in January 2017, NMG chartered a PI project focusing on improving the vaccine administration process, vaccine storage, and vaccine administration safety. Though this PI project wasn't part of the AI Collaborative, the work was completed in parallel to the AI Collaborative. As a result, NMG has invested a lot of time and resources to improve immunization rates and to standardize the immunization administration process. Both the AI Collaborative and the PI project have elevated vaccine work as an organizational priority.

### **Patient Education**

The first initiative the Vaccine Taskforce focused on was creating and implementing an organizational Vaccine Philosophy. While many of the providers shared their personal philosophy with patients during office visits, it wasn't clear to the community what NMG's stance on vaccinations was.

Starting with the Sample Vaccine Policy Statement from the Immunization Action Coalition,<sup>2</sup> the NMG provider partners suggested that NMG's philosophy not include the section on asking a patient to find another healthcare provider if they refuse to vaccinate. The providers stated that many times they are able to educate and encourage those patients to vaccinate after meeting with them and would prefer to not turn such patients away. Instead, NMG's Vaccine Philosophy focuses on the organization's support of the scientific evidence related

to immunizations preventing disease and not causing further disability.

The Vaccine Philosophy was then printed and placed in all vaccinating offices and is also posted on NMG's Primary Care webpage.

Around the same time the AI Collaborative started, NMG implemented appearance standards that limited the amount of wall clutter and collateral material in waiting and exam rooms. This initiative presented a challenge for improving patient awareness of vaccine schedules because the Vaccine Taskforce originally wanted to place the schedules in the exam rooms. Instead, the CDC immunization schedules were linked on the Epic staff resources dashboard so as to be available if they needed quick access to review or print them.

### **Provider/Staff Education**

*Pulse*, the quarterly medical staff magazine, was utilized to share the participation in the AI Collaborative with the providers. Providers and staff also received training on how to appropriately enter historical immunizations so that they would capture data correctly within Epic.

In early 2018, NMG kicked off the first quarterly vaccine coordinator meeting. The purpose of this meeting was to develop the vaccine coordinators as subject matter experts for their offices and to complete "train-the-trainer" education. While this intervention wasn't implemented in enough time to impact AI Collaborative results, NMG is already seeing improvements in storage and handling as well as vaccine administration processes because of the standard message. During the Vaccine Coordinator Meeting in June 2018, Merck's medical director presented on the importance of pneumococcal vaccination as well as best practices to increase pneumococcal vaccination rates.

### **Information Technology**

While NMG has been sending immunization records to both the Kentucky and Indiana Immunization Registries for quite some time, the connectivity was only one way. Bi-directional connectivity went live in December 2017, and the full impact of the registry hasn't been determined.

### **Clinical Support**

A condition of employment with Norton Healthcare is compliance with a yearly influenza vaccine administered by Employee Health. Due to regulations, employees' personal medical records weren't automatically updated with their

employee health immunization record for influenza. This caused erroneous gaps in care as well as provider and employee frustration.

A collaborative workgroup including NMG, Legal, Employee Health, and Health Information Management (HIM) was created to focus on obtaining and entering employee flu vaccine history. The legal department wouldn't approve direct entry into personal medical records, but would approve entry by HIM staff with the employee's consent.

The employee health documentation was edited to include an opt-in feature for HIM entry into the personal medical record. This resulted in approximately 10,000 employee flu immunizations being entered into personal medical records for the fall 2017 flu season.

## Outcomes and Results

Overall, all immunization rates for the intervention period showed an improvement over baseline. However, influenza immunization showed the largest improvement over baseline at 13.8% which was consistent with the large intervention that NMG put in place related to employee flu shot capture.

The graphs in the appendix (Figures 1-5) illustrate Norton Medical Group's performance for pneumococcal vaccination (19-64 high risk/at risk and 65+) and influenza vaccination.

## Lessons Learned and Ongoing Activities

Developing a comprehensive immunization record is a challenge for all patient ages, but especially for adults since their immunizations can be completed outside of the medical home. It was expected that the implementation of the immunization registry bi-directional connectivity would be completed early in 2017. Instead, it was completed in December 2017. After implementation, NMG found that some of the immunization mappings were incorrect, which led to issues with reporting to and from the immunization registries. An immunization build evaluation was completed to verify that all immunizations are mapped correctly.

Adding vaccines to specialties proved to be more complicated than originally expected. The specialists wanted vaccines to be administered per protocol and the vaccine protocols weren't integrated into the Epic workflow. Integration of protocols into Epic is now complete, but it

wasn't done in time to impact the collaborative. This led to a delay with immunization implementation for specialty offices.

Due to flat fee and capitated payment arrangements in NMG's immediate care centers (ICCs), NMG found it was unreasonable to administer vaccines to certain patient populations in the urgent care setting. Rather, the focus is on educating the ICCs to reconcile the immunization registry on every visit and then help the patients get scheduled for a medical home visit with a Norton primary care provider.

Before starting any intervention, it is crucial to understand the current workflow, where variation lies, and where synergies can be leveraged. For NMG, starting at the very beginning of the vaccine process and reviewing every component involved with administering vaccines was key for making improvements. It's also crucial to involve frontline staff and providers in improvement projects. Many times, the frontline staff already has a solution in mind—they just need help getting it executed and hardwired.

Next steps include:

- Continuing to targeted provider and staff education on influenza and pneumococcal vaccinations
- Training staff on pre-visit charting that allows vaccine gaps in care to be ordered and pended for the provider before the patient arrives; this will allow staff to enter the orders during their downtime or after huddling with the provider
- Building simple vaccine protocol assessment questions in the administration screen in the EHR for staff to assess and document prior to vaccine administration
- Encouraging vaccine administration prior to the provider seeing the patient (via protocol)
- Increasing access to immunizations in specialty practices and develop referral patterns to primary care offices and Norton Retail Pharmacies where patients can receive vaccinations

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## References

1. Office of Disease Prevention and Health Promotion (ODPHP). Healthy People 2020. [healthypeople.gov](https://www.healthypeople.gov).
2. Immunization Action Coalition. Sample Vaccine Policy Statement. [immunize.org/catg.d/p2067.pdf](https://www.immunize.org/catg.d/p2067.pdf).

## Collaborative Goals

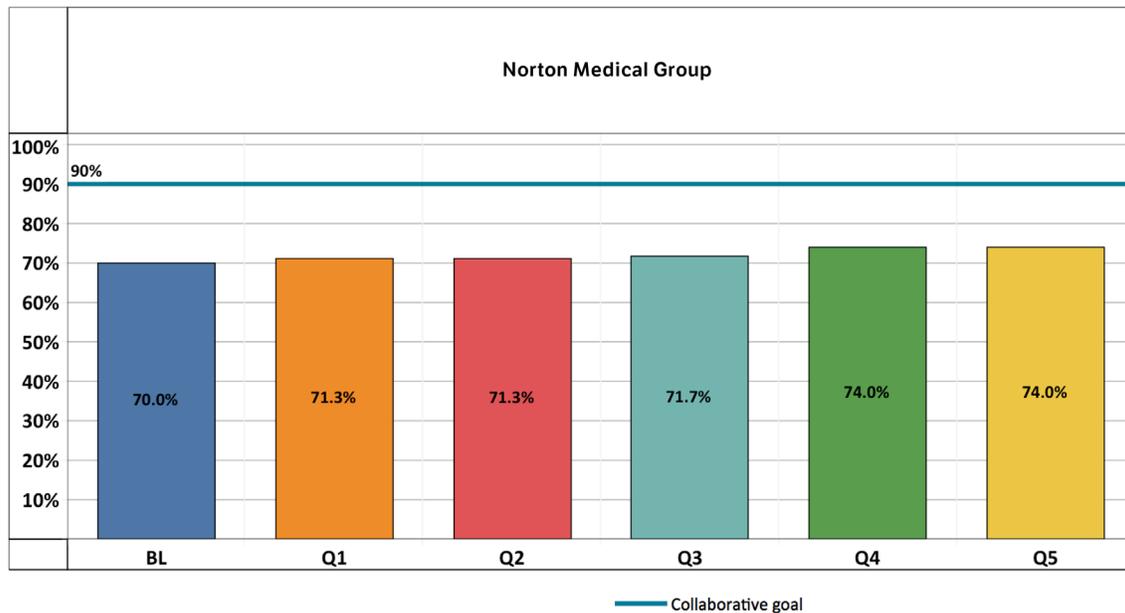
Measure	Healthy People 2020	Collaborative Goal
Measure 1 (65+) Any	90%	90%
Measure 1 (65+) Both PPSV and PCV*	90%	60%
Measure 2 (High-Risk)	60%	45%
Optional Measure 2a (At-Risk)**		
Measure 3 (Flu)	70%/90%***	45%

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

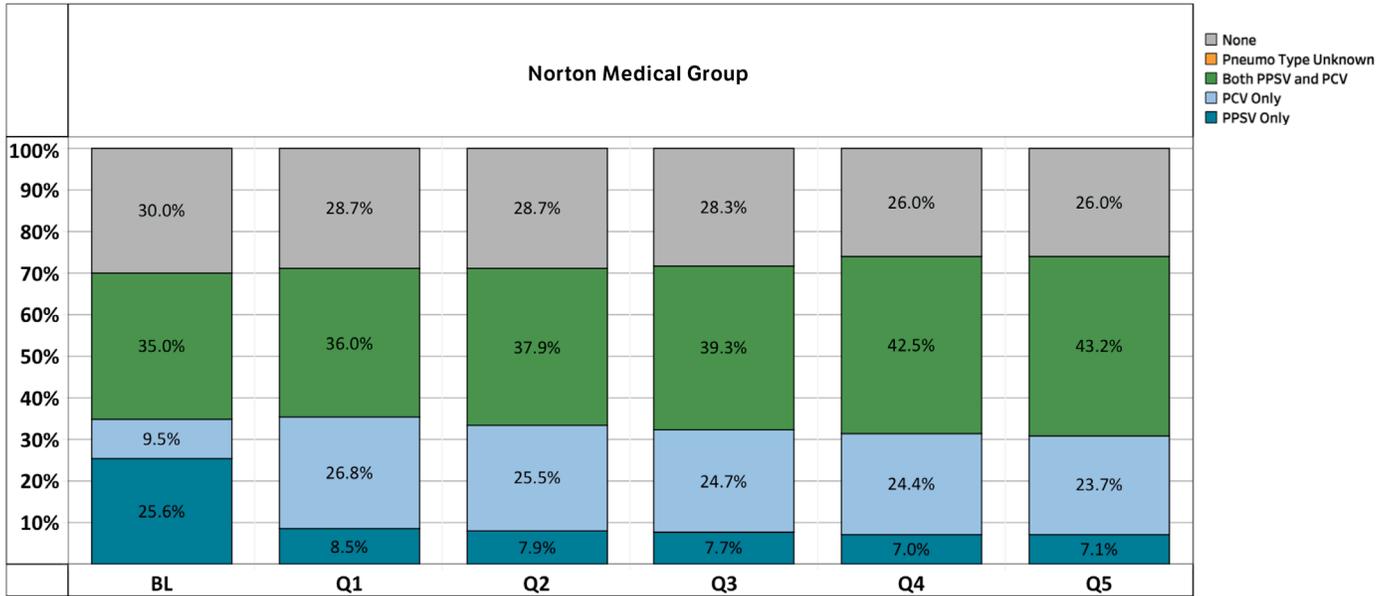
\*\* According to CDC guidelines, it is not currently recommended that the at-risk population receive PCV. Therefore, “PPSV” or “Unknown pneumococcal vaccination” are numerator options for Measure 2a.

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

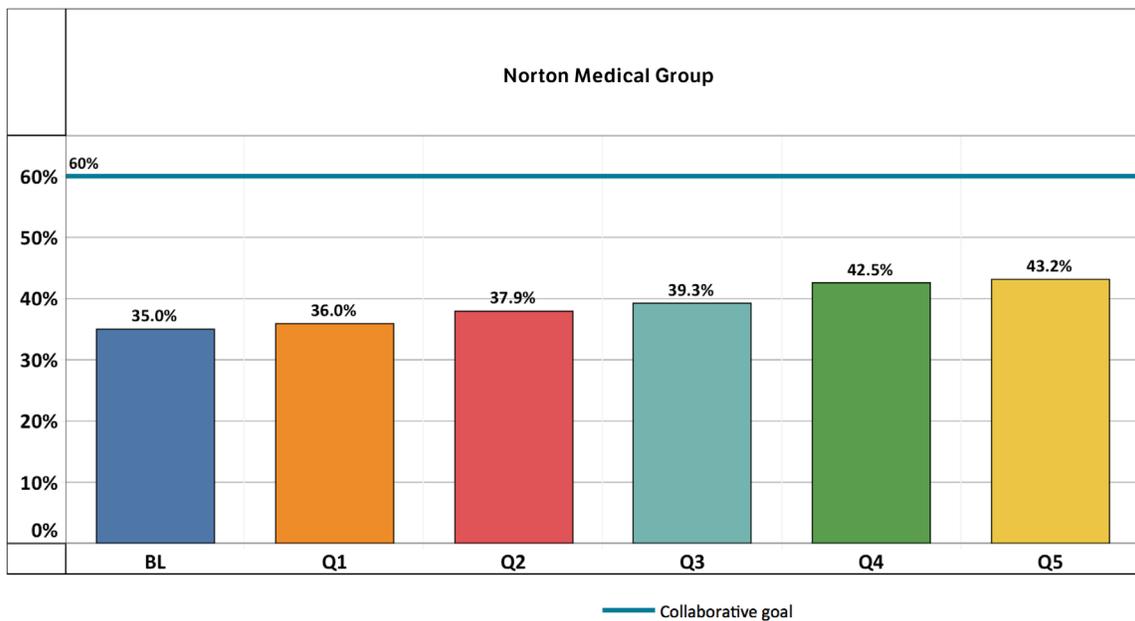
### Measure 1 – Pneumococcal (Any) Immunization for Adults Ages ≥ 65



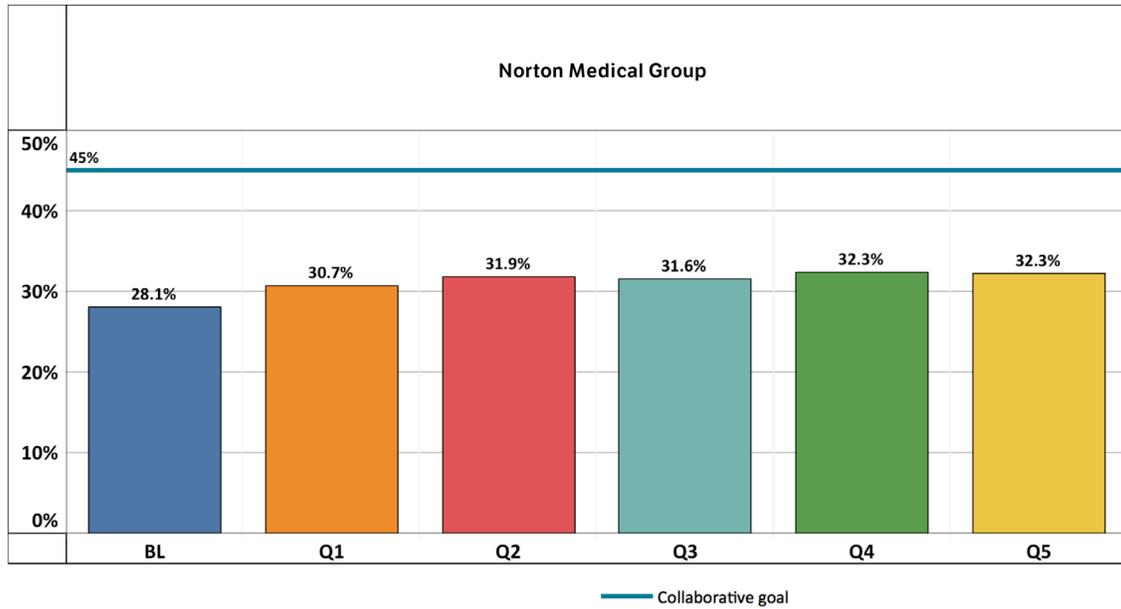
## Measure 1 – Pneumococcal (Any) Immunization for Adults Ages ≥ 65



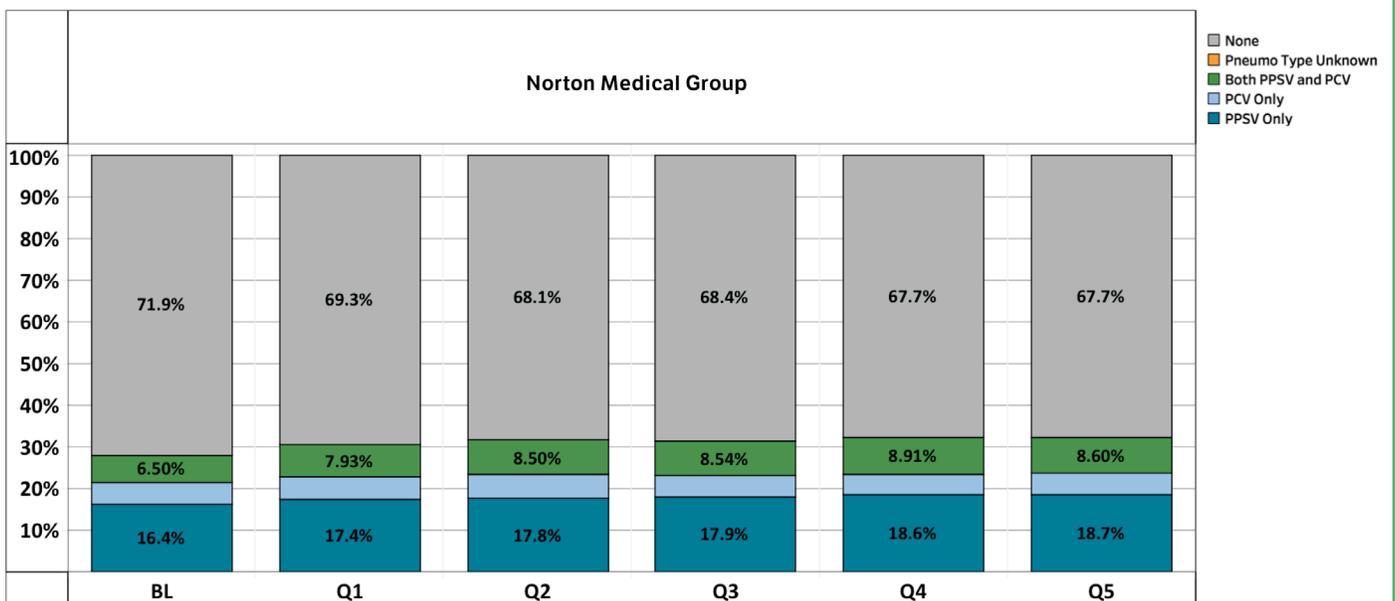
## Measure 1 – Both PPSV and PCV Immunization for Adults Ages ≥ 65



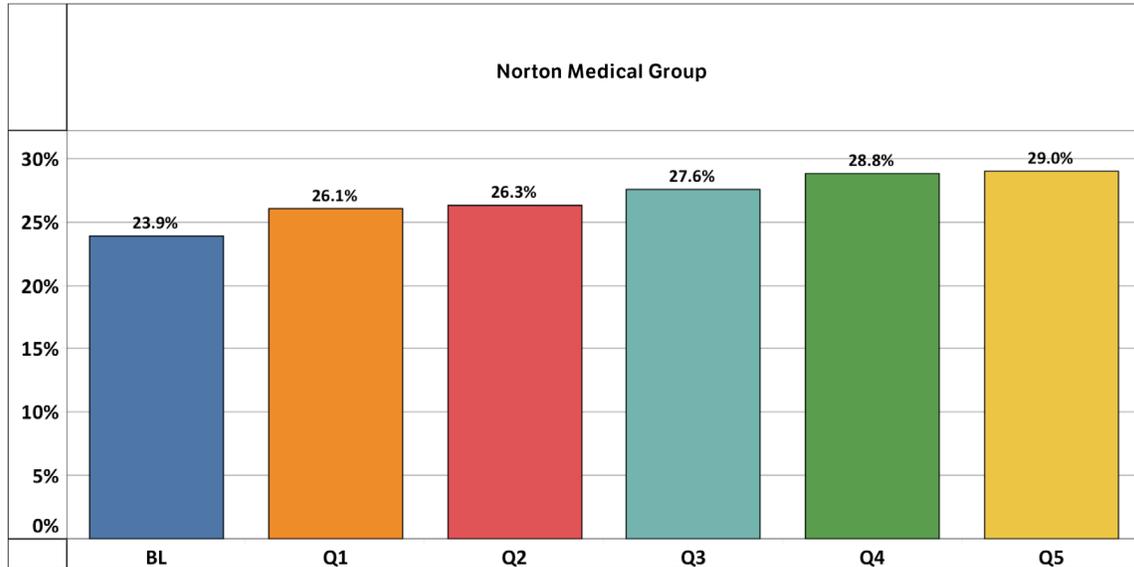
## Measure 2 – Pneumococcal (Any) Immunization for Adults Ages 19–64 with High-Risk Conditions



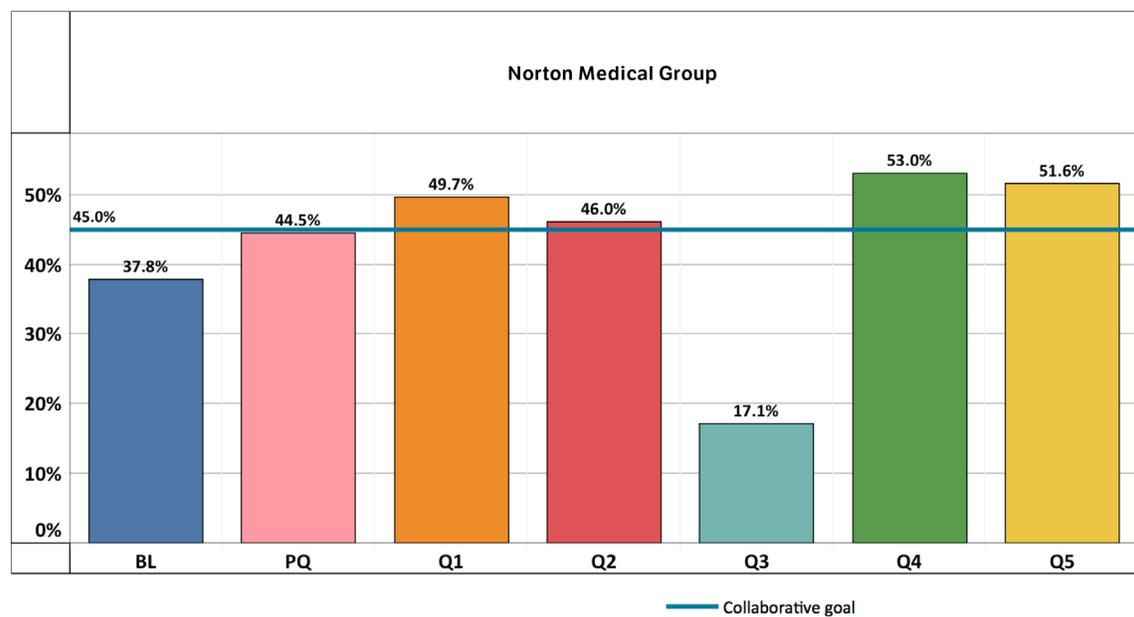
## Measure 2 – Pneumococcal (Any) Immunization for Adults Ages 19–64 with High-Risk Conditions

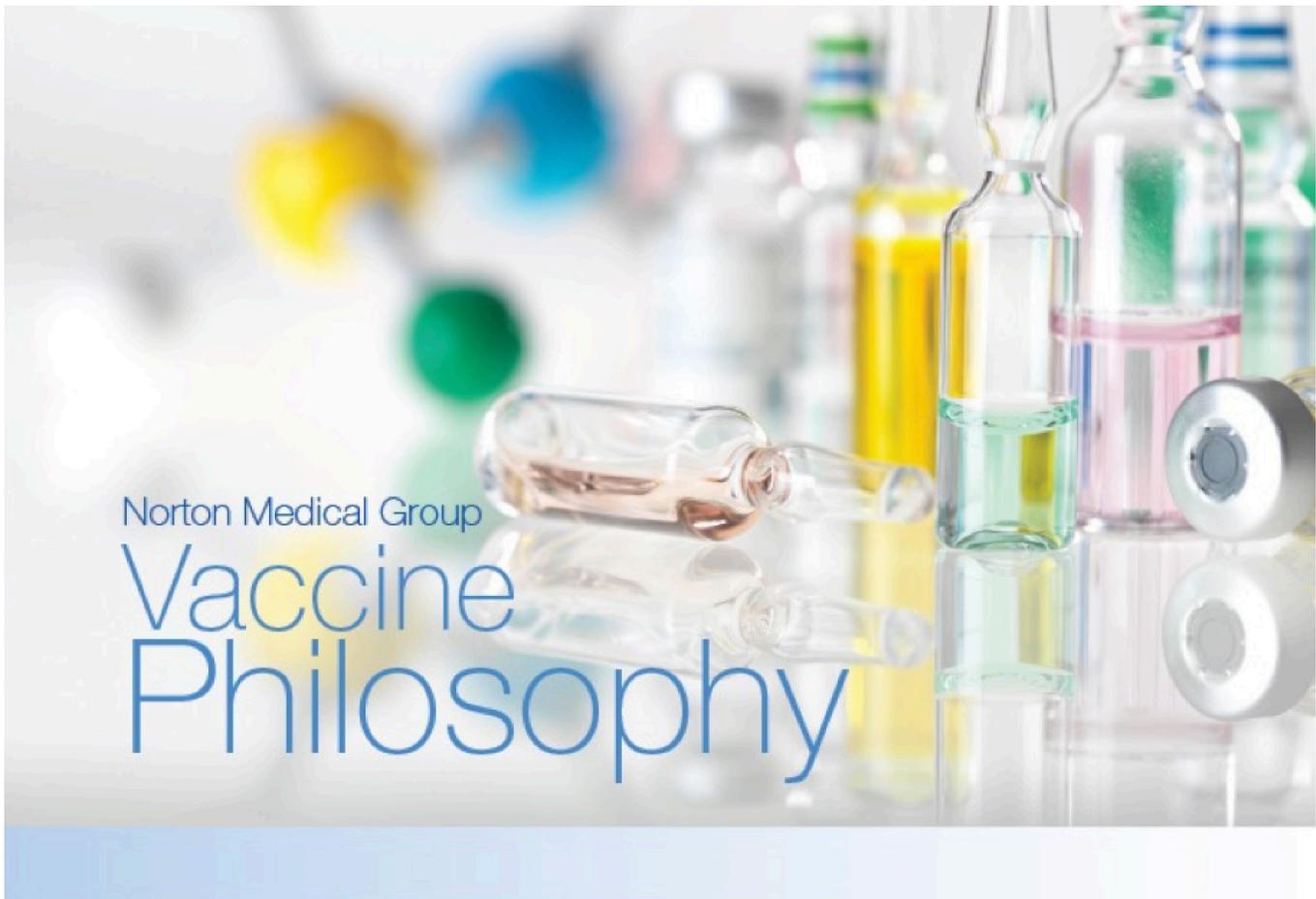


**Measure 2A – Pneumococcal (Any) Immunization for Adults Ages 19–64 with At-Risk Conditions**



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





Norton Medical Group

# Vaccine Philosophy

**We firmly believe** in the effectiveness of vaccines to prevent serious illness and to save lives.

**We firmly believe** in the safety of our vaccines.

**We firmly believe** that all children and adults should receive all of the recommended vaccines according to the schedule published by the U.S. Centers for Disease Control and Prevention and the American Academy of Pediatrics.

**We firmly believe**, based on all available literature, evidence and current studies, that vaccines do not cause autism or other developmental disabilities.

**We firmly believe** that thimerosal, a preservative that has been in vaccines for decades and remains in some vaccines, does not cause autism or other developmental disabilities.

**We firmly believe** that vaccinating children and adults may be the single most important health-promoting intervention we perform as health care providers, and that you can perform as patients, parents and caregivers. The recommended vaccines and the vaccine schedule are the result of years and years of scientific study and data-gathering on millions of children and adults by thousands of our brightest scientists and physicians.

*Adapted with permission from All Star Pediatrics, Lionville, Pennsylvania*



# Appendix

NMG/ICC/NCI FLU SHOT SIGN-IN SHEET 2017 – 2018  
 Manufacturer Lot #/Exp Date \_\_\_\_\_

LOCATION: \_\_\_\_\_

DATE: \_\_\_\_\_ RN/LPN/MA NAME \_\_\_\_\_ SIGNATURE/AHSN: \_\_\_\_\_

AHSN NUMBER	RN/LPN/MA NAME <i>Circle One</i> PRINT NAME	SIGNATURE <i>Please Print</i> By signing, I certify that I have had opportunity to read the VIS (8/7/15) and understand the benefits, risks, potential side effects and adverse reactions. All questions have been answered to my satisfaction and I give my consent for vaccination.	If you have a NMG provider PLEASE INITIAL and include DOB if you agree to have your flu vaccine entered into your NORTONMYCHART medical record	DATE OF BIRTH  MO/DATE/YR	SITE DELTOID
					L R
					L R
					L R
					L R
					L R
					L R
					L R
					L R
					L R
					L R
					L R
					L R

Entered by (Print Name/Signature): \_\_\_\_\_ / \_\_\_\_\_ Date Entered: \_\_\_\_\_

Scan to [fluproof@nortonhealthcare.org](mailto:fluproof@nortonhealthcare.org) or fax to 629-8118

Scanned or Faxed to EHS (Date/Initials): \_\_\_\_\_ / \_\_\_\_\_

# It's time for your flu shot!

The Norton Healthcare Employee Flu Vaccination Campaign is Oct. 3 to 23.



## Protect yourself, your patients, your co-workers and your family

All employees must get a flu shot unless you have a medical reason that prevents it. To decline, you must submit a declination form signed by a licensed medical provider to Employee Health by Oct. 23 at 3:30 p.m.

There are three convenient ways to get your free vaccination from Norton Healthcare:

- 1 At any Employee Health office, Monday through Friday, 7 a.m. to 3:15 p.m.
- 2 At a stationary flu shot cart in some facilities, 6 a.m. to 8 p.m. daily
- 3 From the roaming flu shot cart at your facility, 6 a.m. to 8 p.m.

Beginning Oct. 3, you can call the Flu Shot Information Line at **(502) 446-SHOT (7468)** to hear your campus vaccination schedule.

Getting your flu vaccination at work is easy and quick. Simply show your ID badge and provide your AHSN.

### New in 2017!

When you get your vaccine at Norton Healthcare:

- You can initial the consent form to have your vaccination confirmation added to your medical record at your Norton Healthcare primary care provider's office.
- You will receive an email confirmation of your vaccination minutes after receiving your flu shot.

You may choose to be vaccinated elsewhere, such as at a retail clinic. If you do so, you must submit written proof of your vaccination to Employee Health by Oct. 23 at 3:30 p.m. You have three options:

- Scan and email it to [fluproof@nortonhealthcare.org](mailto:fluproof@nortonhealthcare.org).
- Fax it to **(502) 629-8118**.
- Deliver it in person to any Employee Health office.

You also must provide a copy of your vaccination confirmation to your Norton Healthcare primary care provider, if you have one.

October 2017						
SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

**Don't wait until the last minute!  
Plan now to be vaccinated by Oct. 23.**

Go to **Nsite** to find all the information you need. From the home page, click on Departments, then Employee Health. The 2017 Flu Vaccination box contains links for the following:

- Frequently asked questions
- Declination forms
- Flu cart schedule
- Instructions for providing proof of vaccination



## Collaborative to share vaccination best practices

Norton Medical Group has been selected by the American Medical Group Foundation as one of 20 medical groups that will form an adult immunization collaborative to share best practices. The yearlong collaborative ends in March 2018.

The goal of the collaborative is to increase vaccination rates among adults to reduce serious illness and death caused by influenza and pneumococcal disease.

Norton Medical Group has set up a task force to work closely with Norton Healthcare providers, including specialists, to make vaccinations readily available to patients. The task force has developed a vaccine philosophy, optimized Epic best practice advisories and improved reporting.

For more information, contact Carrie Regnier, R.N., director, Quality and Clinical Effectiveness, Norton Medical Group, at [carrie.regnier@nortonhealthcare.org](mailto:carrie.regnier@nortonhealthcare.org) or (502) 272-5251.

## Project Team



Pictured from left: **Theresa Smith, R.N., M.B.A./M.H.A.;**  
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**Diane Siemens, Pharm.D.;** **Sherry Johnson, M.A., B.S.;**  
**Amy Porco, B.A.;** **Paul Schulz, M.D.**



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AMGA's Distinguished Data and  
Analytics Collaborator



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