AMGA
Advancing High Performance Health

Implementing Adult Immunizations in U.S. Health Systems

Elizabeth L. Ciemins, PhD, MPH, MA

National Adult and Influenza Immunization Summit, Atlanta, GA
November 4, 2022

Presentation Outline

- AMGA Overview
- AMGA's activities in adult immunizations
- Quantitative and qualitative results, insights from health systems
- Future directions

AMGA: What we do

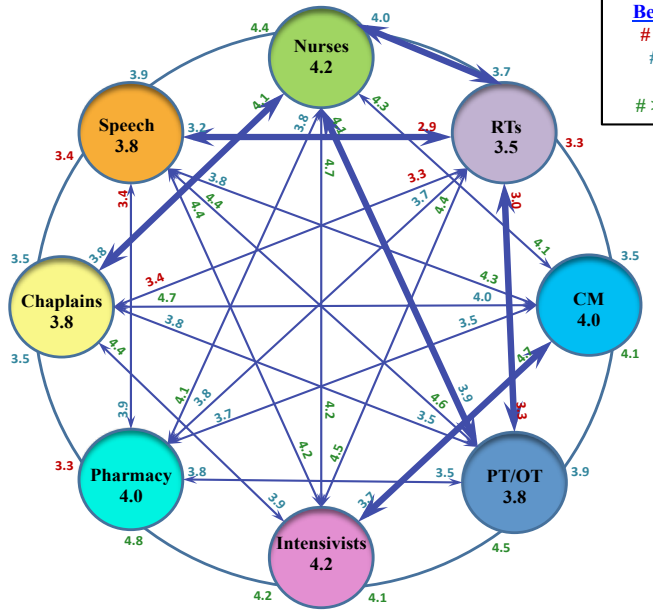
+

T2DM Obesity

Immunizations

HTN ASCVD

+



AMGA Research

Leveraging Evidence to Advance Practice

Integrating Evidence

Studying methods for integrating evidence-based practice into routine health care

Fostering Innovation

Discovering innovations originating in clinics that are responding to real-world challenges

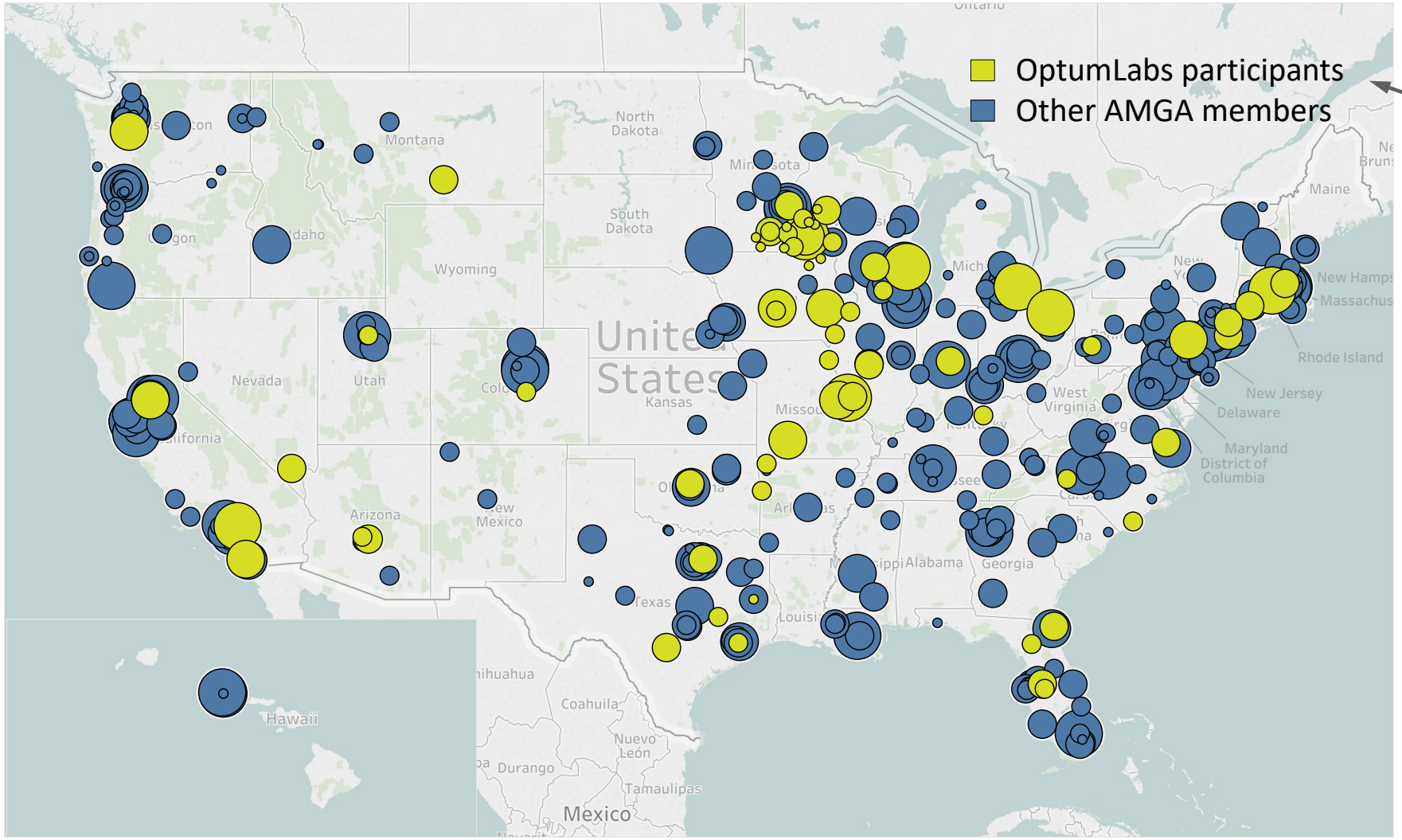
Driving Change

Uncovering hidden meanings in data and the reasons driving behavior and process changes

More information at: research@amga.org

https://www.amga.org/performance-improvement/best-practices/research-analytics/

AMGA Membership



15% of AMGA members
25% of patients

Representative AMGA Members

Current Research Collaborators

AMGA's work in adult immunizations

- Adult Immunization Best Practices Learning Collaborative Pilot (n=7 AMGA member organizations; 2015-2016)
- Mixed Methods Research: Examined the Learning Collaborative Approach (Ciemins, 2019; *Population Health Management*)
- Adult Immunization Best Practices Learning Collaborative Group 1 (n=20 AMGA member organizations; 2017)
- Adult Immunization Best Practices Learning Collaborative Group 2 (n=20 AMGA member organizations; 2019)
- Research: Impact, Scale Up, and Spread (Ciemins, 2020; Popu*lation Health Management*)
- Measure Development: Using QMs to Drive Improvement in Adult Immunizations
- Adult Immunization National Campaign: Rise to Immunize (n=70; 2021–2025)

Rise to the Challenge.
Rise to Immunize™.

AMGA Foundation's third national health campaign

Four-year campaign focused on improving rates of four types of adult immunizations

Together we can administer 25 million vaccines by 2025

www.RiseToImmunize.org

Questions? Email:
RiseToImmunize@amga.org

Rise to Immunize Participating Groups

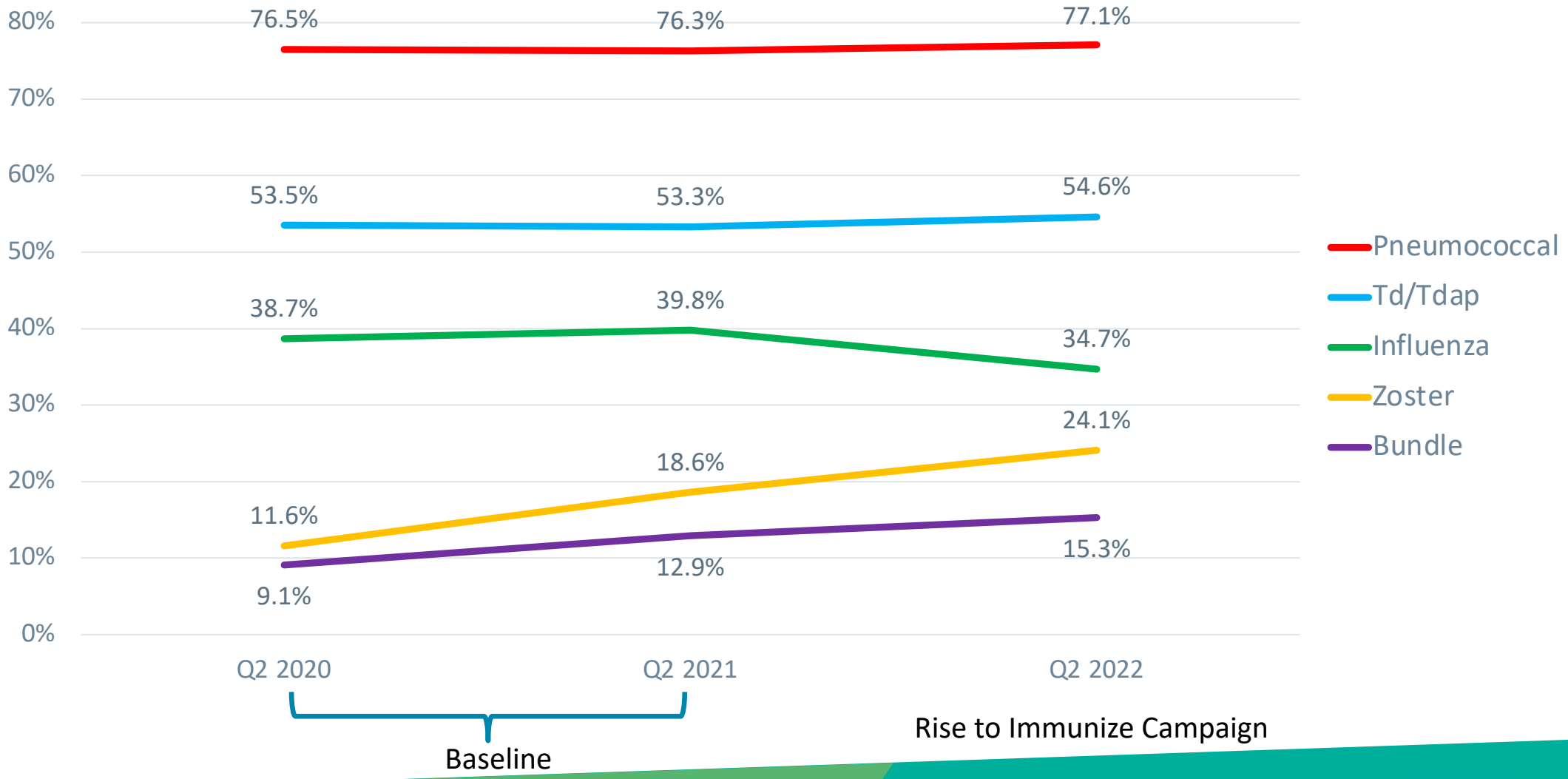
AMGA
Advancing High Performance Health

Year 1 Impact by Vaccine

3,799,935	influenza vaccines (19+)
182,872	pneumococcal vaccines (66+)
586,153	Td/Tdap vaccines (19+)
510,022	zoster vaccines (50+)

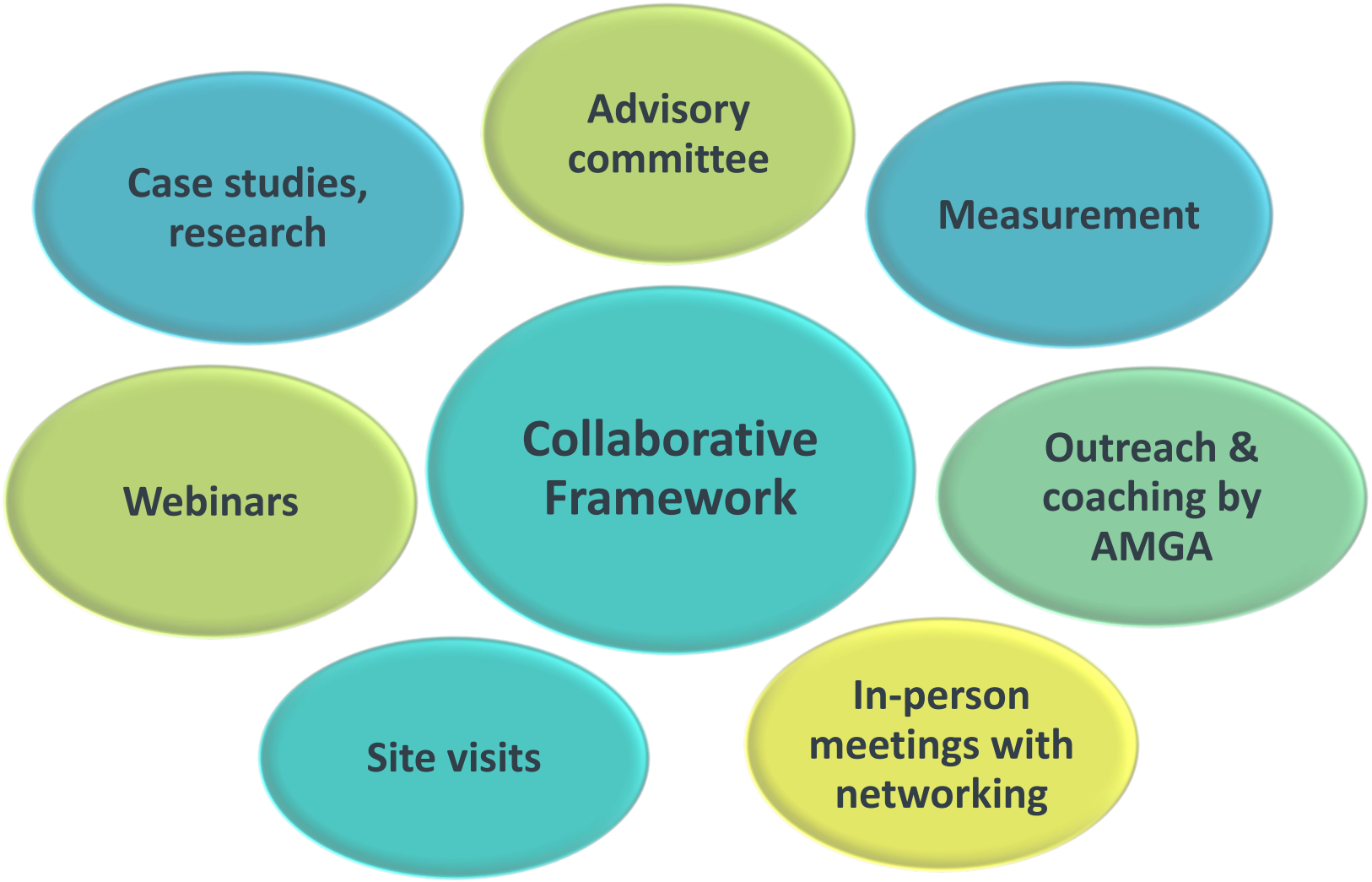
5,078,982 total vaccines administered or documented

Vaccination Rates Over Time, All Organizations (Q2 2020-2022)

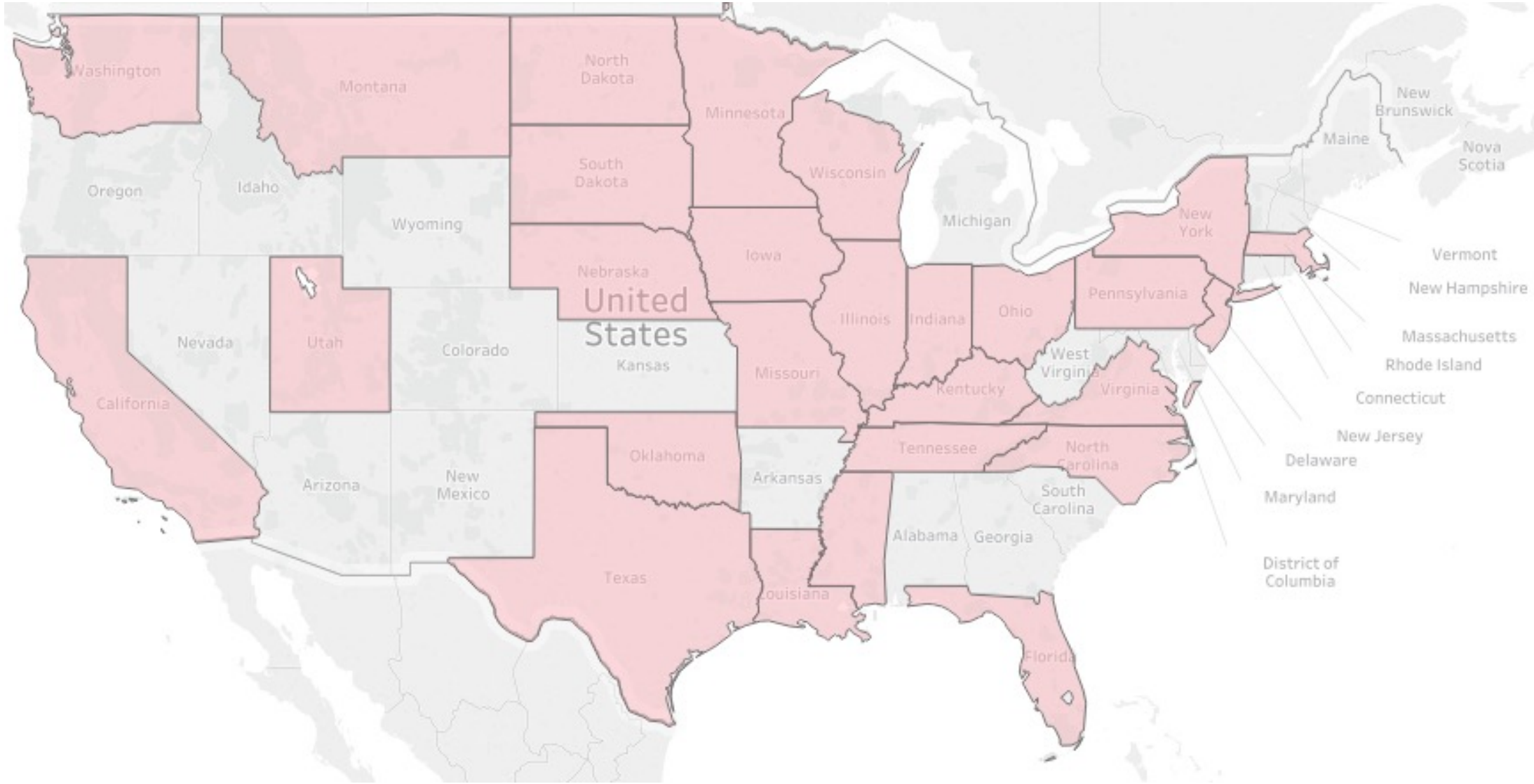


AMGA's Adult Immunization Best Practices Learning Collaboratives

Adult Immunization Best Practices Learning Collaborative

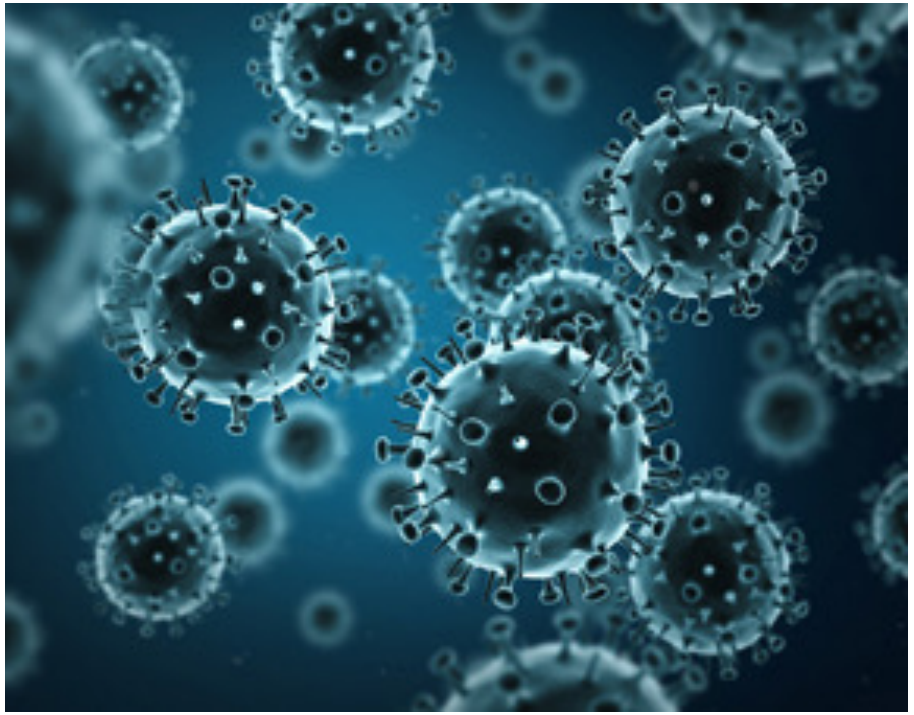


Participants (Pilot, Groups 2 & 3): 42 organizations in 27 states



Learning Collaborative: Increasing Influenza and Pneumococcal Immunizations in Adults

Influenza

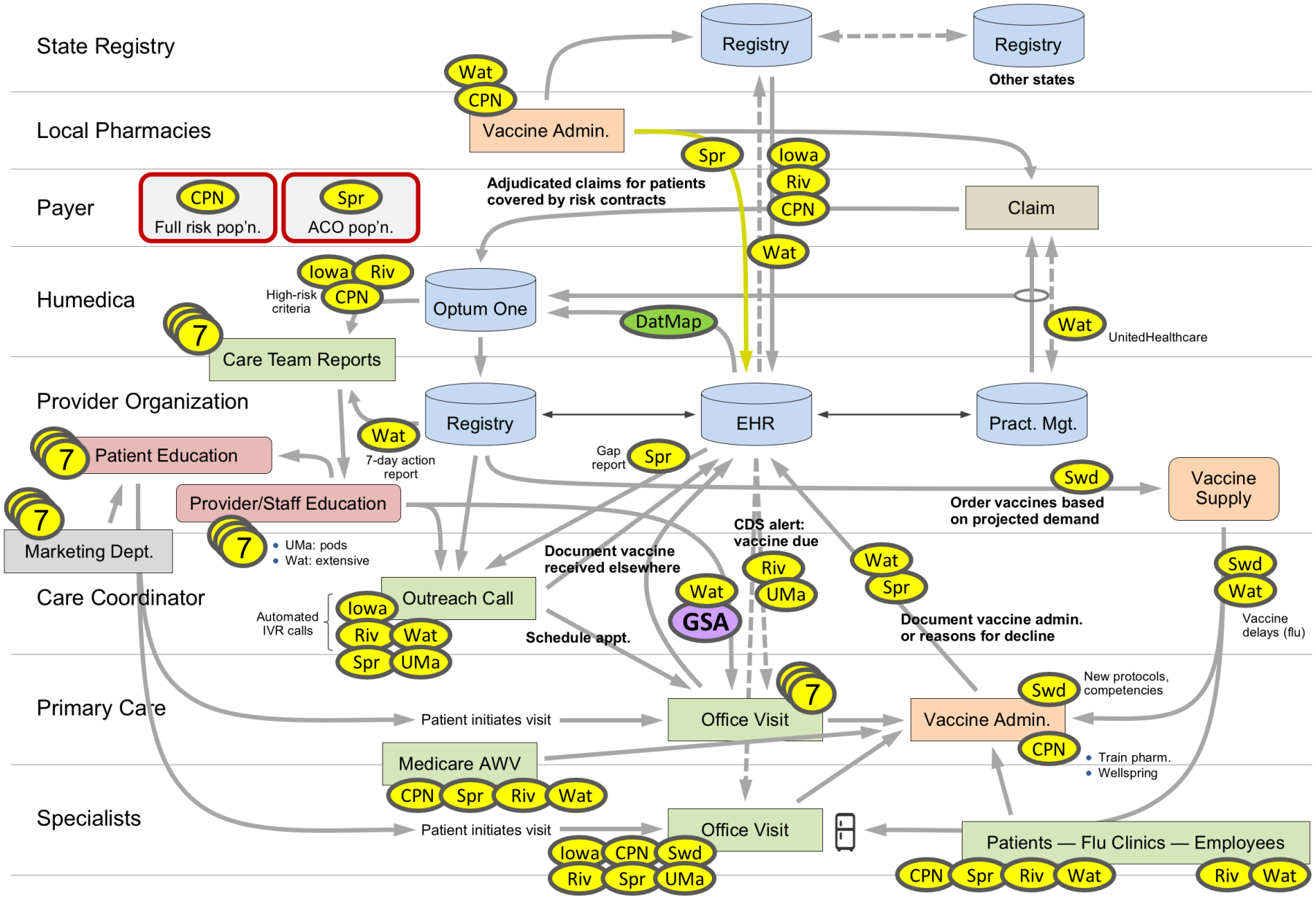


Pneumococcus

This initiative addressed both pneumococcal vaccines: pneumococcal conjugate vaccine (PCV) & pneumococcal polysaccharide vaccine (PPSV).

Immunization Data/Process Flow

version 0.98
12/8/2015



Interventions

Easier Interventions	More Advanced Interventions
Passive patient education incl. signage	Active patient outreach incl. auto calls
Provider & staff education meetings	Transparent performance reporting
Offer vaccines in all primary care clinics	Offer vaccines in specialty clinics
Standardize *where & how* you document	Point-of-care alerts and advisories
Refine vaccine procurement procedure	Standing orders for staff
Give shots during patient visits	Give shots during ↑Medicare AWVs
Walk-in (or drive-in!) flu shot clinics	Add pneumococcal to flu shot clinics
Immunization faxes from pharmacies	2-way state immunization registry

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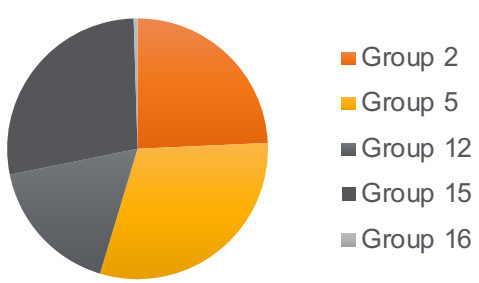
Immunization faxes from pharmacies	**2-way state immunization registry**

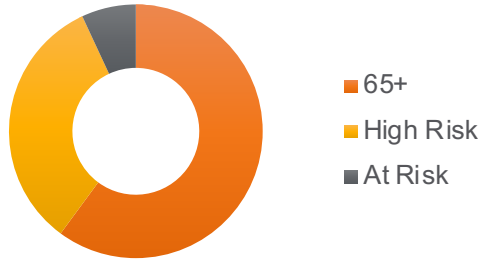
Intervention: Automated Patient Outreach & Engagement (Emmi)

Interactive voice recording phone calls went out to patients identified as needing one or more vaccinations based on the Collaborative measures. The data below highlights early findings of the intervention success.

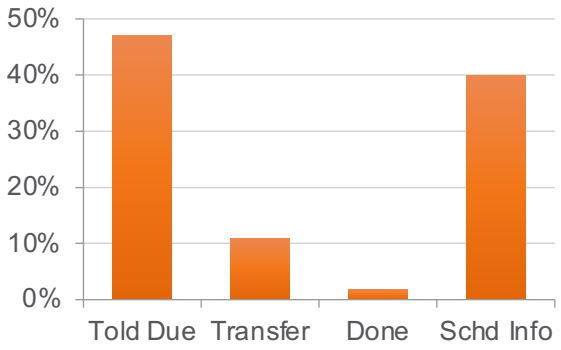
Patients Called:
109,246



Patients Engaged:
49,888 (45.7%)



Engagement Type:



Early Results:

- Based on patients who engaged in the outreach, **26.1% of age 65+** population had a **change in vaccination status** after >3 months of the outreach
  - This % change was fairly consistent across the groups
- The populations age **19-64 high risk and at-risk** were more challenging to engage, with **5.3% and 6.5%** having a change in vaccination status, respectively

OPTUM®

Operational Levers

- Robust quality department and reporting tools, e.g., SQL Manage. Studio, Crystal Reports, BI
- Care coordination program that could be tapped for immunizations (ID care gaps)
- Dedicated position to help coordinate data PLUS dedicated analytics staff
- Dashboards and health maintenance modules in the EHR
- High enrollment in patient portal
- EHR interoperability between specialists/ primary care
- Regular data reports on quality measures for providers; real-time score cards

Results

Past Research I

POPULATION HEALTH MANAGEMEN
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Impact of a Lea and Pneumoc A

Elizabeth L. Ciemins, PhD, MPH, MA,[1] Michelle J
Erin Leaver-Schmidt, MPH,[4] Vaisha
John W. Kennedy, M

POPULATION HEALTH MANAGEMENT
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Using Quality Measures to Drive Improvements in Immunization Rates: Findings from a Real-World Evaluation from 3 US Health Care Organizations

Kaitlyn Whiton Esselman, MHS [1], Elizabeth L. Ciemins, PhD, MPH, MA [2], Elizabeth Donckels, MSPH [1], Courtney Barbera, MPH[1], Guy D'Andrea, MBA[1], and Tilithia McBride[3]

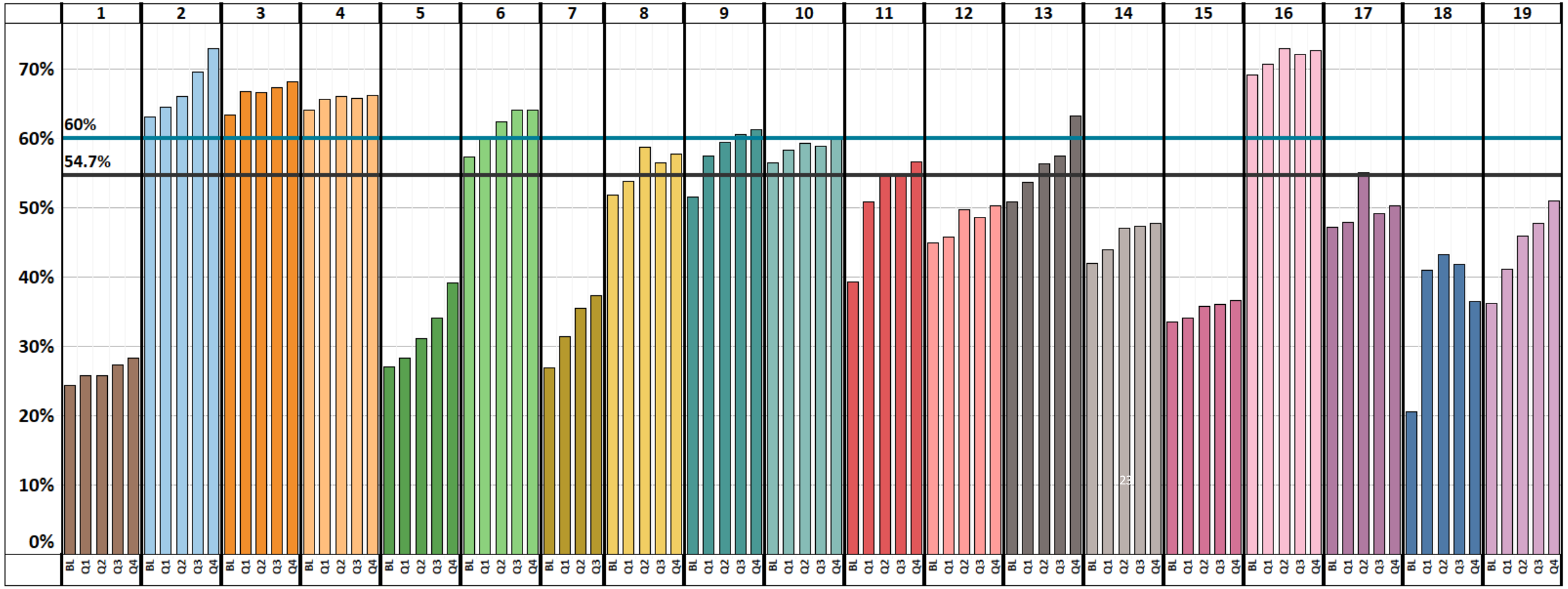
Abstract

DOI: 10.1089/pop.2019.0169

An Adult Immunization Best Practices Learning Collaborative: Impact, Scale Up, and Spread

Elizabeth L. Ciemins, PhD, MPH, MA,[1] Michelle Jerry, MS,[2] Jill Powelson, DrPH, MPH, MBA, RN, CPC,[1]
Erin Leaver-Schmidt, MPH,[1] Vaishali Joshi, BS,[1] Earlean Chambers, RN, MS,[1]
Danielle Casanova, MBA,[1] John W. Kennedy, MD,[1] and Jerry Penso, MD[1]

Pneumococcal Immunization (complete), adults ages ≥ 65

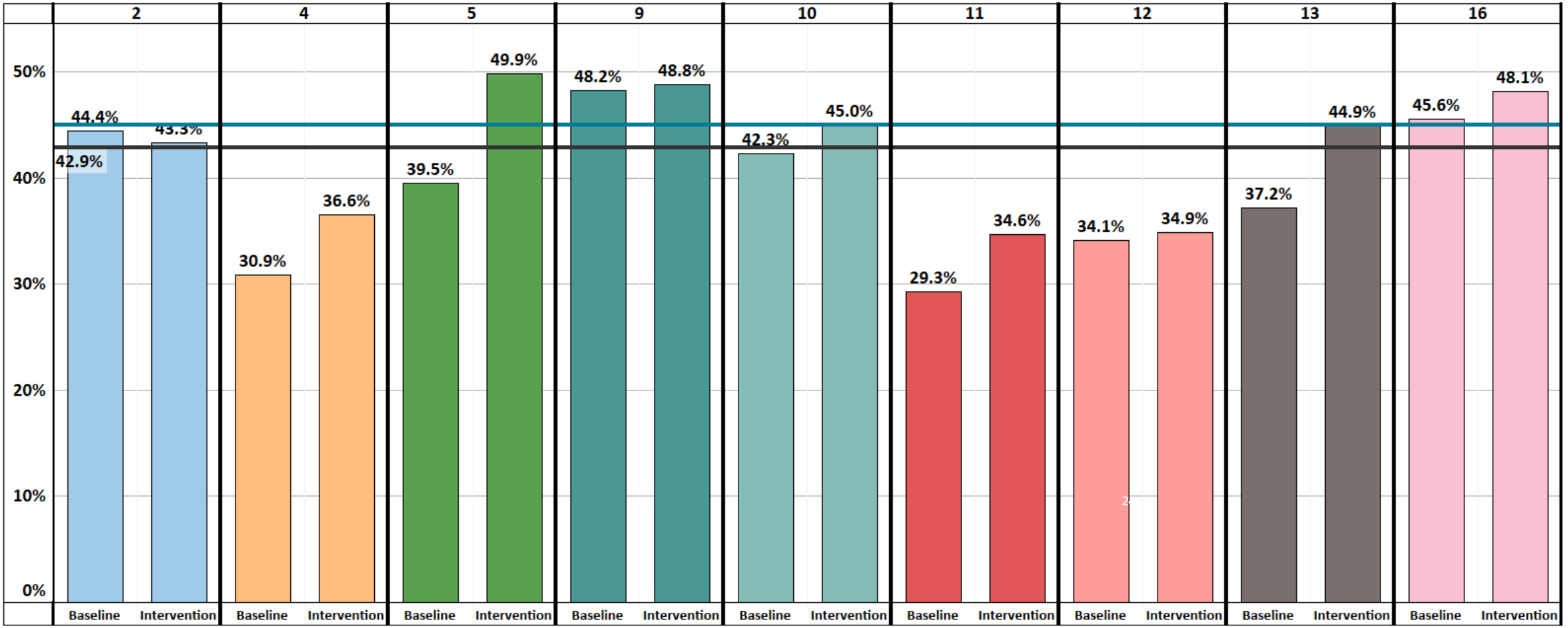


Collaborative goal Group weighted average (QTR 4)

BL: 7/1/16–6/30/17 Q1: 7/1/17–9/30/17 Q2: 10/1/17–12/31/17 Q3: 1/1/18–3/31/18 Q4: 4/1/18–6/30/18

Ciemins et al., *Population Health Management*, 2019

Influenza Immunization, ages ≥ 18



Ciemins et al., *Population Health Management*, 2019

Collaborative goal (45%) Group weighted average (Intervention)

Baseline: 7/1/16 – 6/30/17 Intervention: 7/1/17 – 6/30/18

Adult Immunization Status Measure*

TABLE 3. MEASURE PERFORMANCE (Table view)

Rate (%)	*Site 1*		*Site 2*		*Site 3*	
	2016–2017	*2017–2018*	*2016–2017*	*2017–2018*	*2016–2017*	*2017–2018*
Influenza	51.9	57.4	32.6	36.2	35.1	35.1
Td/Tdap	68.6	77.3	54.3	61.2	88.9	89.8
Zoster	41.5	43.6	3.6	4.5	29.9	29.3

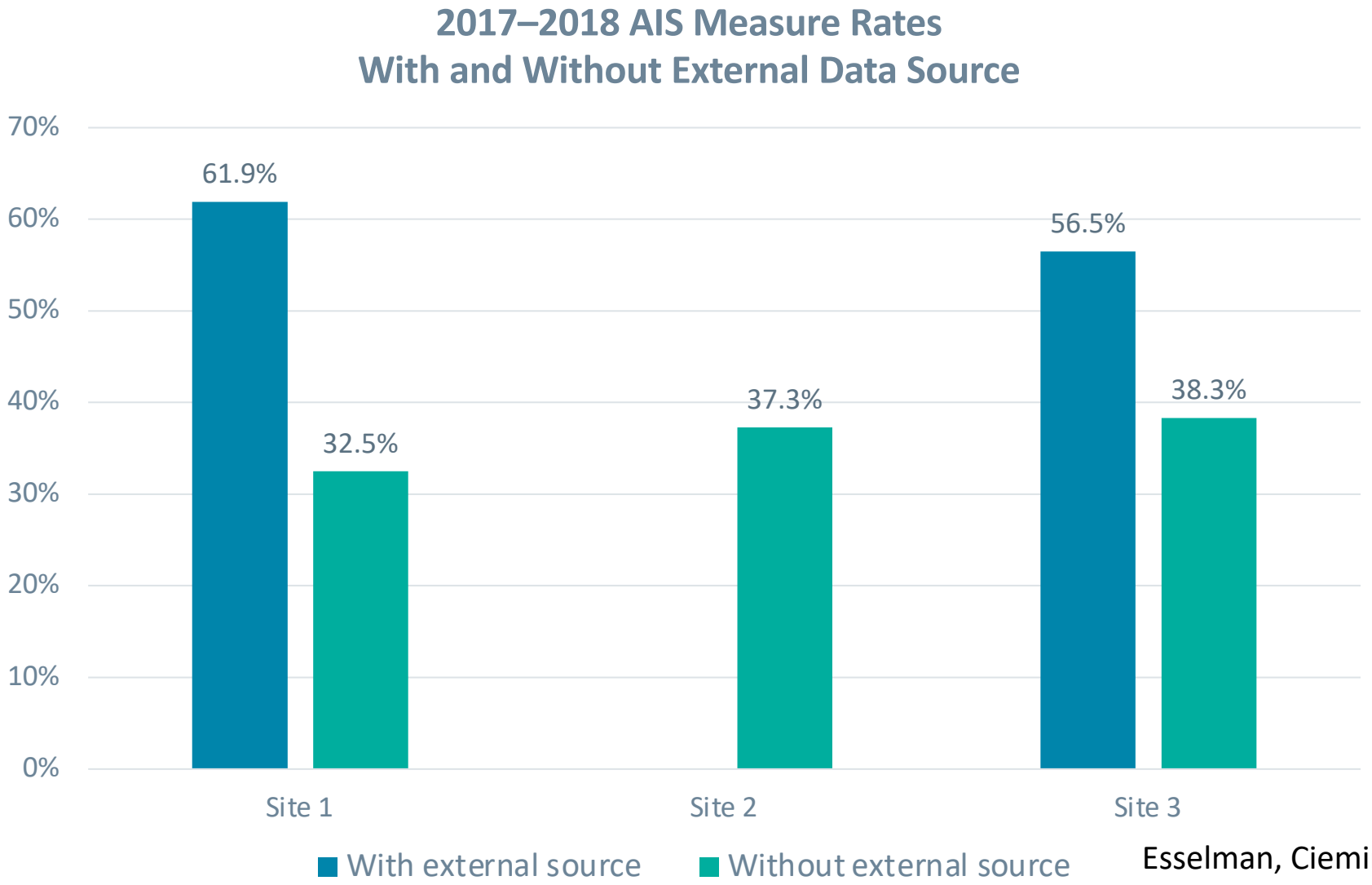
Rate (%)	*Site 1*		*Site 2*		*Site 3*	
	2016–2017	*2017–2018*	*2016–2017*	*2017–2018*	*2016–2017*	*2017–2018*
Pneumococcal	63.7	66.9	7.0	15.0	67.9	68.5
AIS composite	56.4	61.9	32.6	37.3	56.3	56.5
All age-appropriate immunizations	22.6	26.7	7.0	9.0	19.0	18.8

AIS, adult immunization status; Td, tetanus and diphtheria; Tdap, tetanus, diphtheria, and acellular pertussis.

*Individual predictors of having all 4 vaccinations: number of encounters, non-Black race, non-Medicaid insurance, not self pay.

Esselman, Ciemins, Donckels et al., 2021

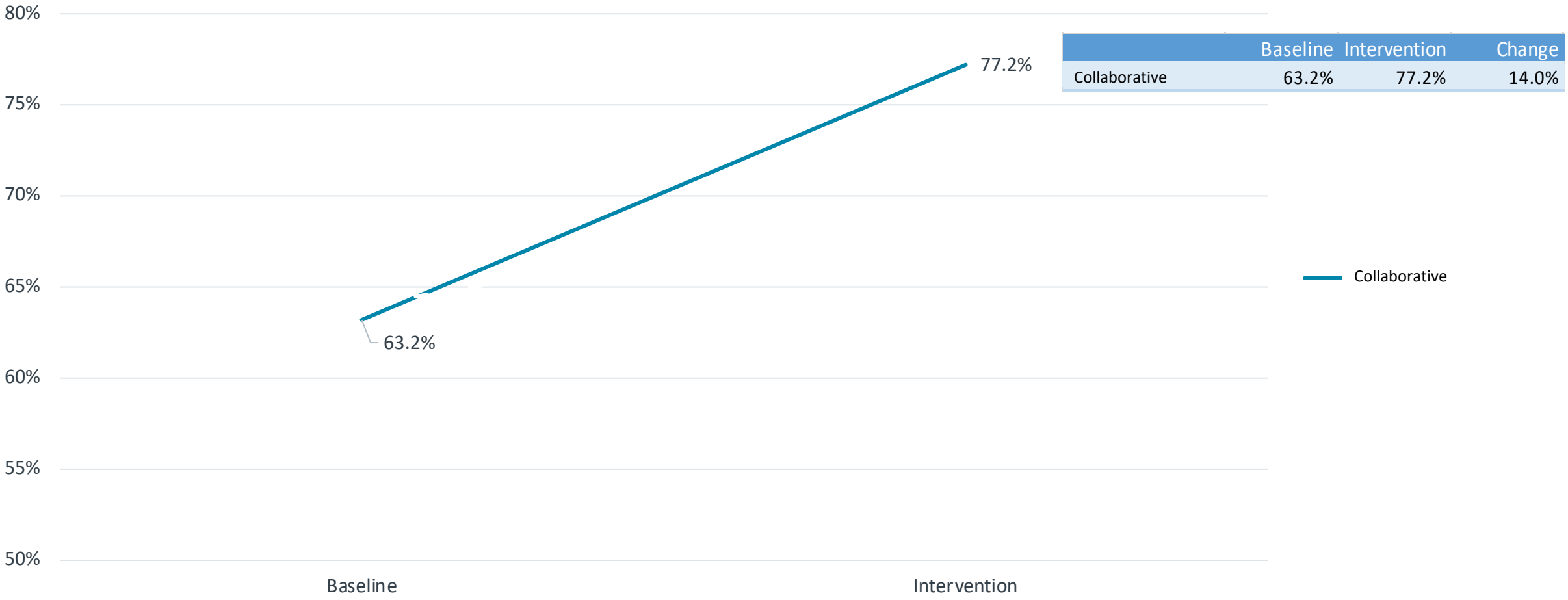
Use of Immunization Information Systems



Esselman, Ciemins, Donckels et al., 2021

Impact of a Learning Collaborative on Pneumococcal Vaccinations

Pre-Post Pneumococcal Vaccination Rates, Adults 65+: Collaborative Compared to Matched Non-Collaborative Providers**

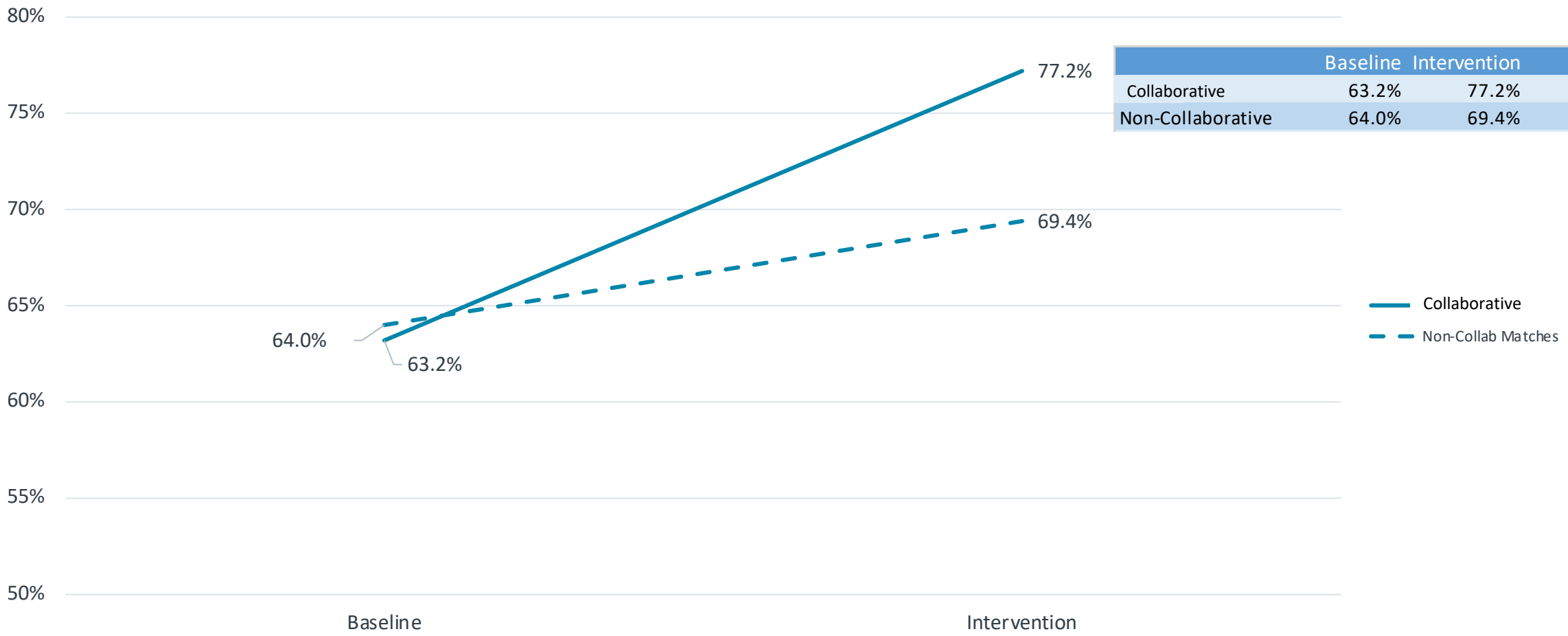


	Baseline	Intervention	Change
Collaborative	63.2%	77.2%	14.0%

**p < 0.05

Ciemins et al., *Population Health Management*, 2020

Pre-Post Pneumococcal Vaccination Rates, Adults 65+: Collaborative Compared to Matched Non-Collaborative Providers**

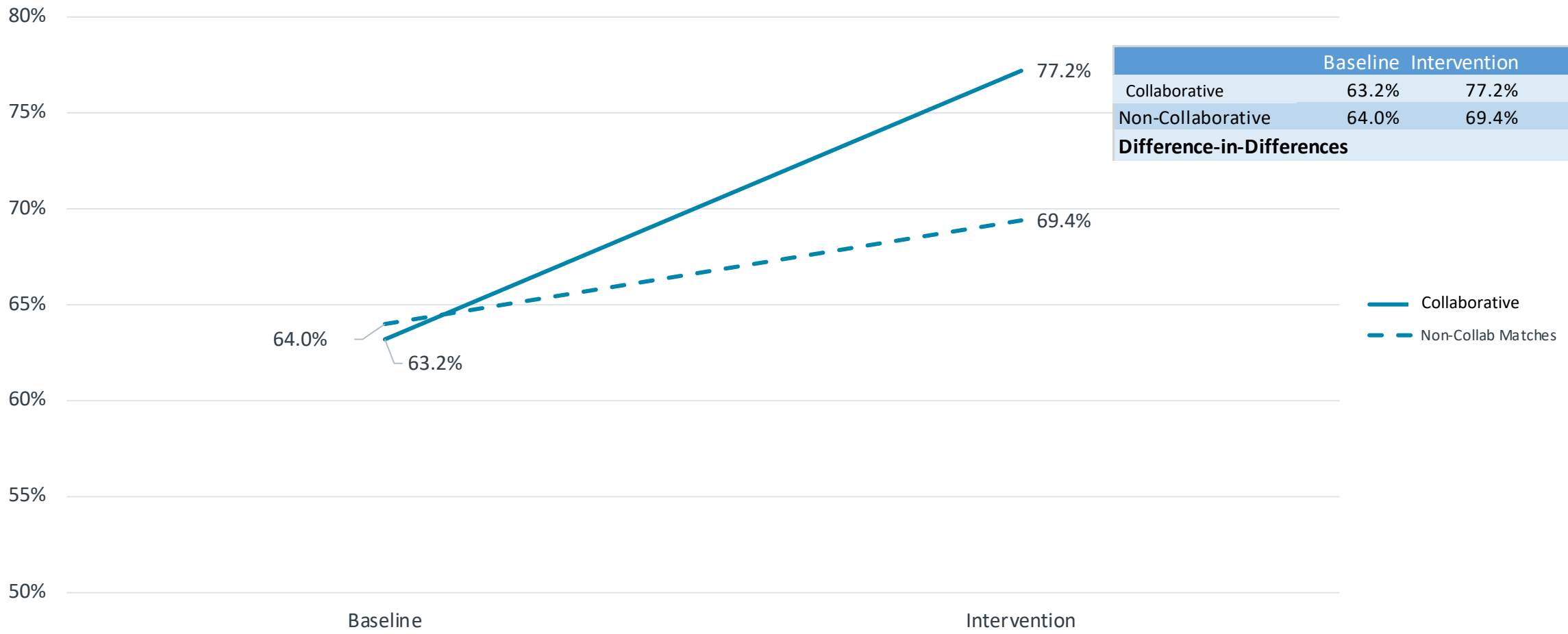


	Baseline	Intervention	Change
Collaborative	63.2%	77.2%	14.0%
Non-Collaborative	64.0%	69.4%	5.4%

**p < 0.05

Ciemins et al., *Population Health Management*, 2020

Pre-Post Pneumococcal Vaccination Rates, Adults 65+: Collaborative Compared to Matched Non-Collaborative Providers**

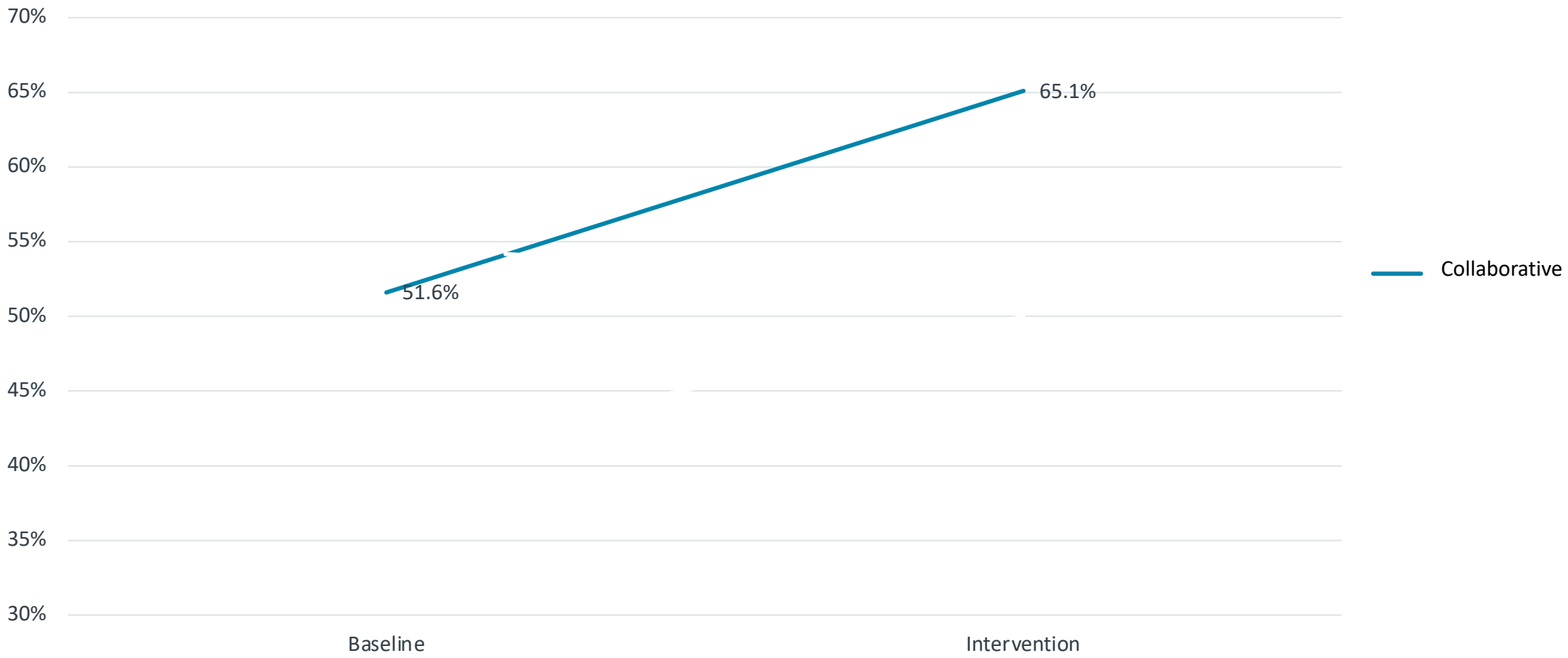


	Baseline	Intervention	Change
Collaborative	63.2%	77.2%	14.0%
Non-Collaborative	64.0%	69.4%	5.4%
Difference-in-Differences			**8.6%**

**p < 0.05

Ciemins et al., *Population Health Management*, 2020

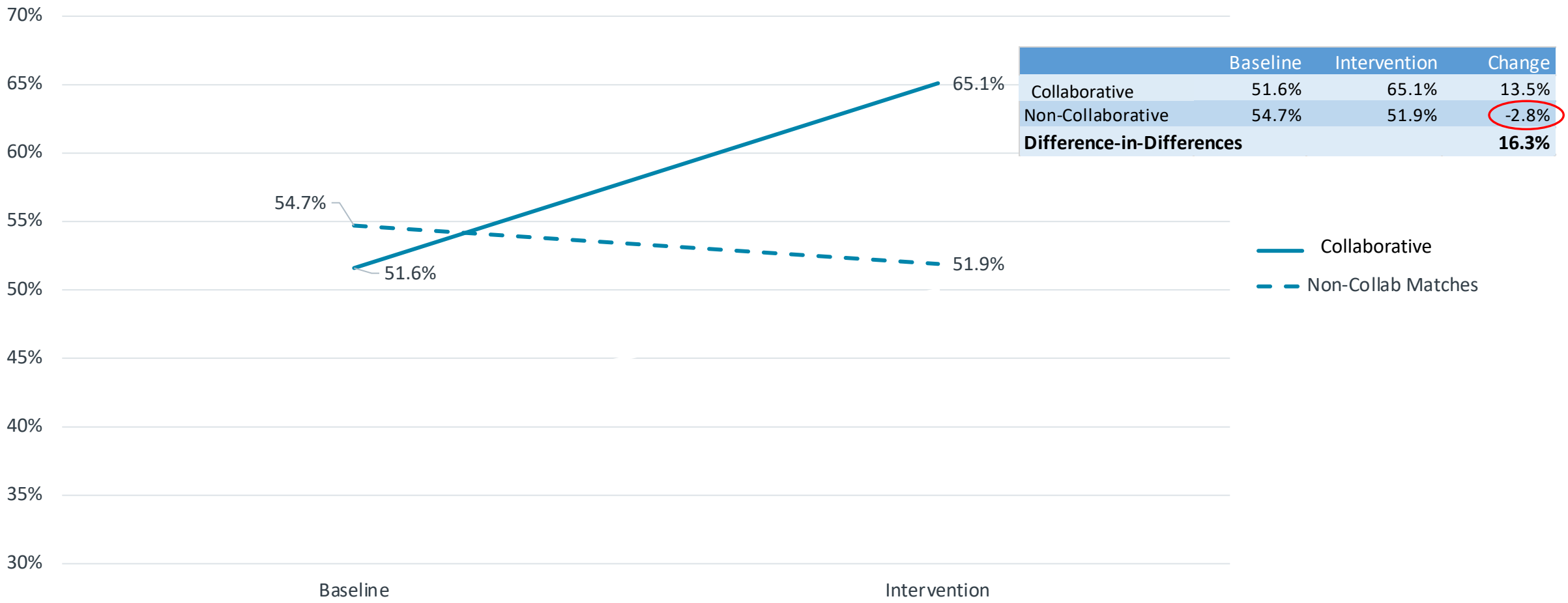
Pre-Post Pneumococcal Vaccination Rates, At-Risk Adults 19 – 64: Collaborative Compared to Matched Non-Collaborative Providers**



**p < 0.05

Ciemins et al., *Population Health Management*, 2020

Pre-Post Pneumococcal Vaccination Rates, At-Risk Adults 19 – 64: Collaborative Compared to Matched Non-Collaborative Providers**

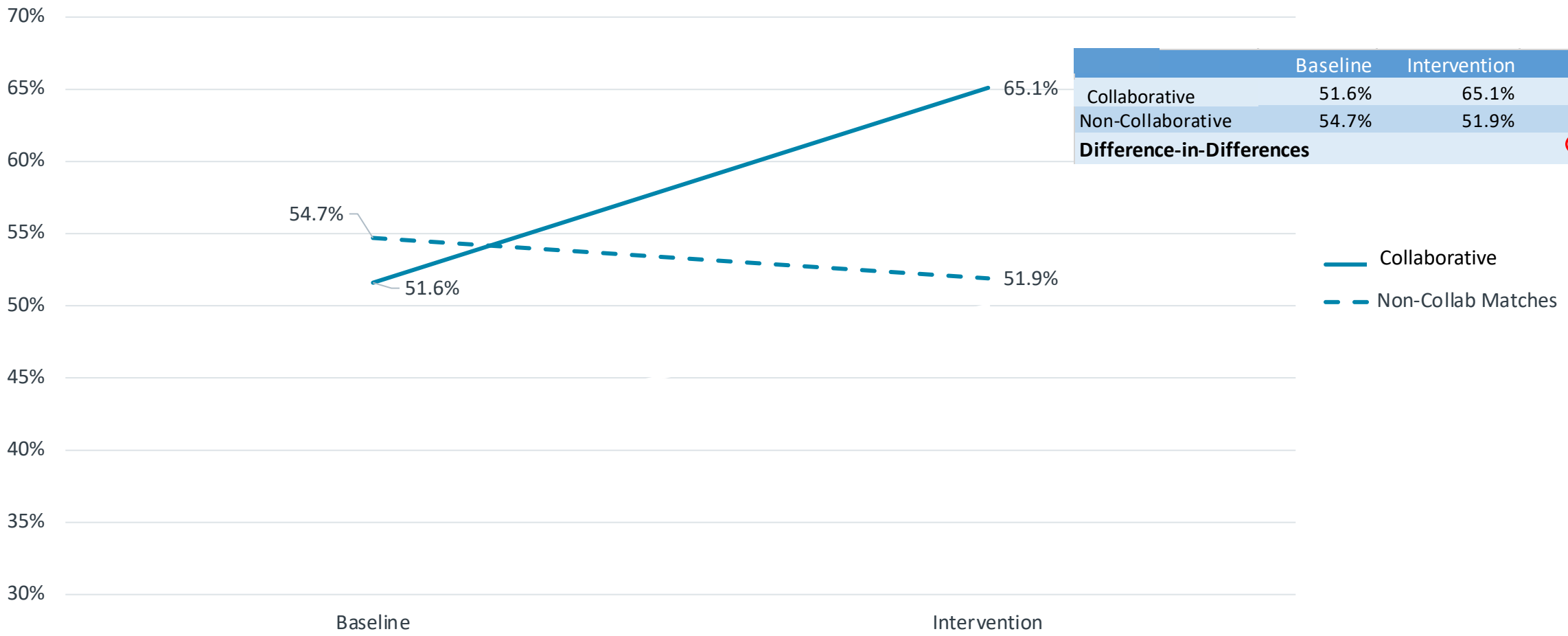


	Baseline	Intervention	Change
Collaborative	51.6%	65.1%	13.5%
Non-Collaborative	54.7%	51.9%	-2.8%
Difference-in-Differences			**16.3%**

**p < 0.05

Ciemins et al., *Population Health Management*, 2020

Pre-Post Pneumococcal Vaccination Rates, At-Risk Adults 19 – 64: Collaborative Compared to Matched Non-Collaborative Providers**



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Difference-in-Differences			**16.3%**

**p < 0.05

Ciemins et al., *Population Health Management*, 2020

Comparative Qualitative Analysis*

High Performing Organizations[1]	Lower Performing Organizations[2]
Learning Climate (+)	Learning Climate (-)
Networks & Communication (+)	Networks & Communication (-)
Culture (collaborative, education, good communication, patient-centered, prevention, population health/community, quality)	Culture (top down, siloed, non-collaborative)

[1] Adjusted average treatment effect Pneumo 65+: 12% to 22%
[2] Adjusted average treatment effect Pneumo 65+: -1.2% to -3.4%

Ciemins et al., *Population Health Management*, 2019

*Using Consolidated Framework for Implementation Research (CFIR)

Comparative Qualitative Analysis: Facilitators

Facilitator	Exemplary Quote
Data/technology	We had weekly and monthly reports… that went to the care managers [of] who we didn't have a record of a flu or pneumonia vaccine, so then the care managers could task the nursing staff/physician to give that vaccine while they were here.
Learning collaborative	I really like to see what the other processes were from other clinics and how they are reaching out to the patients. AND **The collaborative…helped provide us some tools on how we can improve those rates, but also provide some benchmarks against other organizations to see what others are doing.**
Specialists provide shots	**I think the specialist really understands the high-risk groups**…if you broke our data down [to] those that got immunized that are high-risk, many…probably would be patients that are seeing a specialist for one of those high-risk categories, and that specialist is saying "You need to get this." …
Prioritization of immunizations	The team was really focusing on those patients and coming together to develop the materials, the strategy, and the protocols that we were going to use to get as many patients immunized as possible.

Ciemins et al., *Population Health Management*, 2019

Comparative Qualitative Analysis: Barriers

Issue	Exemplary Quote
Electronic Health Record	if you're not accurately document[ing] within the fields, …you're not going to capture that patient unless you put it in the specific fields.
Patient Receives Vaccination Elsewhere	I think our biggest challenge was… documentation. So many people get it at their employer or Walgreen's pharmacies…it was really just getting that documentation
Providers Dictating Notes	I've tried to wean some [providers] from transcription and it's too hard, they go back. I think scribes are great…then you get all of those pieces of information the way you need to get it…I think that's one of our biggest hurdles right now.
Poor Documentation of High-Risk Conditions	…somebody would be a former smoker, but they would show up as a smoker, so that was a big discrepancy... It's added to the foundation of the reason to code appropriately
Documentation for New Vaccines	the complicating factor was when they added Prevnar initially didn't have a specific Prevnar data point in EMR so a lot of people when you'd give a Prevnar there was no Prevnar place to put it

Ciemins et al., *Population Health Management*, 2019

Summary

What has contributed to improved immunization rates?

- Staff education, especially about high-risk and at-risk patients for PV
- Physician champion
- Standing orders for nurses
- Prioritizing the program
- Transparent data reporting
- Bi-directional state registry feeds into EHR
- Reminders and/or gaps in care prompts in EHR
- Participating in vaccine programs (e.g., Sanford's Vax Champ)
- Provider/staff vaccine reminders and alerts in EHR
- Emmi® (automated outreach program)

Ongoing Challenges, Future Directions

- Ongoing challenges: (Rise to Immunize Survey 9/15/22)
  - Costs to patients, no insurance, no coverage
  - Challenges providing vaccines to Medicare patients in office (Zoster, TDap)
  - Limited staff
  - Vaccine hesitancy
  - Lack of staff buy-in/ownership
  - Lack of education
  - Lack of middle management leadership and support
  - Storage and handling
  - EHR enhancements: IT queue to create care gap reports or POC alerts; vax not prioritized
  - Lack of prioritization; competing interests
- Learn from HPV: announcement training, standing orders

Questions?

Elizabeth Ciemins
eciemins@amga.org