

Duke Vaccinates

The Adult Immunization Project

A multi-component intervention increase adult immunization rates for four major vaccines within primary care

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Background

Adult vaccination rates are well below the Healthy People 2020 goals established by the CDC

Vaccine	2013	2020 goal
Pneumococcal vaccine		
Age 18-64 yr	21.2%	60%
Age ≥ 65 yr	59.7%	90%
Influenza vaccine		
Age ≥ 18 yr	42.2%	80%
Pertussis (Tdap) vaccine		
Age ≥ 18 yr	14.2%	N/A
Herpes Zoster Vaccine		
Age ≥ 60 yr	24.2%	30%

Prior Studies

Effective interventions to increase vaccination rates

- Audit and feedback
- Reminders
- Provider Financial Incentives
- Education
- Quality Improvement interventions involving a) personal contact with patients or b) shared responsibility with non-MD healthcare personnel

Objective

Assess effectiveness of a multi-component QI intervention to increase adult immunization rates for 4 vaccine preventable diseases -- influenza, pneumococcal pneumonia, pertussis (whooping cough), and herpes zoster (shingles)

Questions:

1. What is the pre- vs. post-intervention change in vaccination rates in eligible adult patients?
2. Do intervention clinics have greater improvement compared to control clinics?

Methods – Multi-component Intervention

- Online Audit & Feedback platform (MedConcert®)
- Multi-disciplinary educational resources
- Non-physician clinic champions
 - Nurses, medical assistants
- Pre-specified vaccine targets established by each clinic
- Monthly reports on clinic and provider performance for 4 vaccines
 - Electronic dashboard and printed reports
- Quarterly clinic champion calls

Learning Resources Created by Adult Immunization Project

Training Videos (Duke):

- **Educating Patients & Families about Vaccines & Vaccine Preventable Diseases for Healthcare Professionals**
- **Preparing, Administering and Documenting Vaccines Given For Healthcare Professionals**
- **“Mini-Grand Rounds” series:** Overview of adult vaccinations and uptake; Herpes Zoster; Tdap; Influenza; Pneumococcal (5 min each)
- Pfizer **“Change the Exchange”** videos: Evidence-based techniques for improving the conversation about vaccinations with adult patients (one for clinic staff, one for providers)

Online Modules:

Vaccine Basics for the Healthcare Professional (#1 of 3)

Understanding Vaccines (#2 of 3)

Dosing & Administering Vaccines (#3 of 3)

Educational Resources:

Tip Sheets: Documenting Patient Refusals, Coverage of Vaccines, Outside Messages in Epic, Protect Your Patients from Pneumococcal Disease

Training Manual

Pocket Card

Setting & Participants

- 24 intervention clinics -- 209,533 patients; 147 physicians, 46 NPs/PAs
- 6 control clinics -- 64,133 patients; 63 physicians, 12 NPs/PAs
- One health system in North Carolina
- Baseline period: April 1, 2015 – March 31, 2016
- Intervention period: September 1, 2016 – August 31, 2017

Methods – Analyses

Comparison of intervention and control clinics

- Continuous data: 2-sample t-tests or Wilcoxon rank-sum tests
- Categorical data: Pearson's chi-squared test

Effectiveness of intervention

- Logistic regression models
- Generalized estimating equations methods to account for clustering of outcomes within clinics
- Analyses adjusted for baseline vaccinations rates and differences in case mix between intervention and control clinics

Results – Clinic comparisons

Intervention patients were

- Younger (mean age 51 yrs vs. control 53 yrs, $p < 0.0001$)
- More females (60% vs. control 55%, $p < 0.0001$)
- More insured (65% vs. control 58%, $p < 0.0001$)
- Less Caucasians (65% vs. 72%, $p < 0.0001$)

Added these as covariates in analyses

Vaccination Rates (Sep 1, 2016 – Aug 31, 2017)

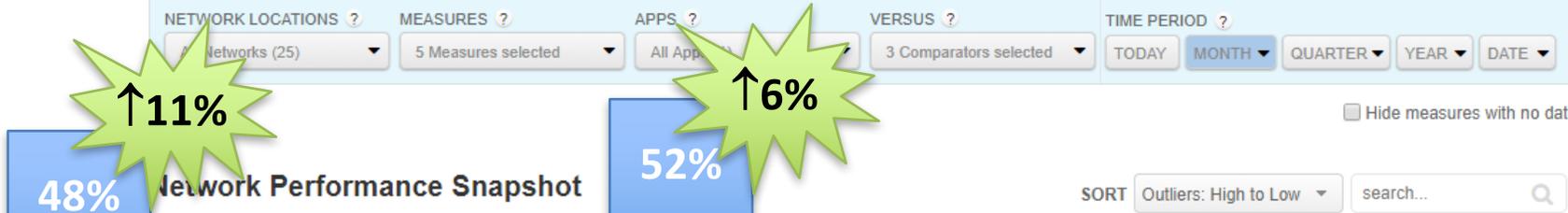


Network Performance Dashboard

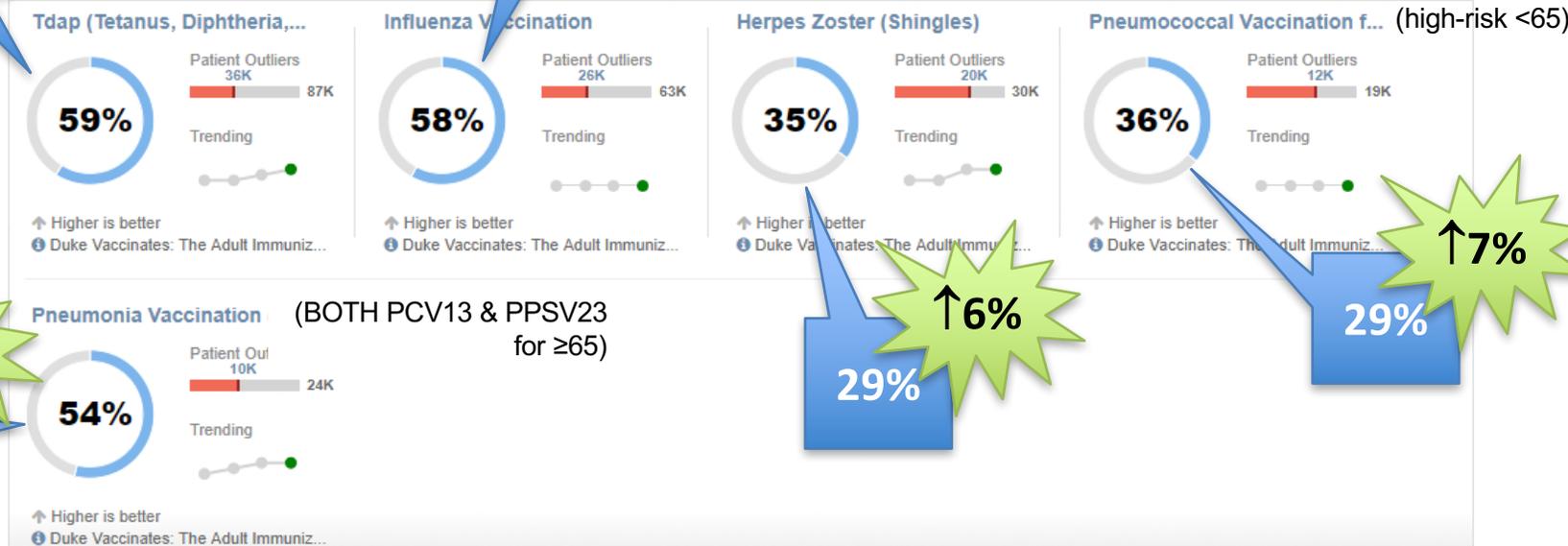
See how you compare. Identify your gaps. Decide which gap to improve

View as of Aug 31, 2017
last data refresh: Aug 31, 2017

NETWORK LOCATIONS ? MEASURES ? APPS ? VERSUS ? TIME PERIOD ?
 All Networks (25) 5 Measures selected All Apps 3 Comparators selected TODAY MONTH QUARTER YEAR DATE

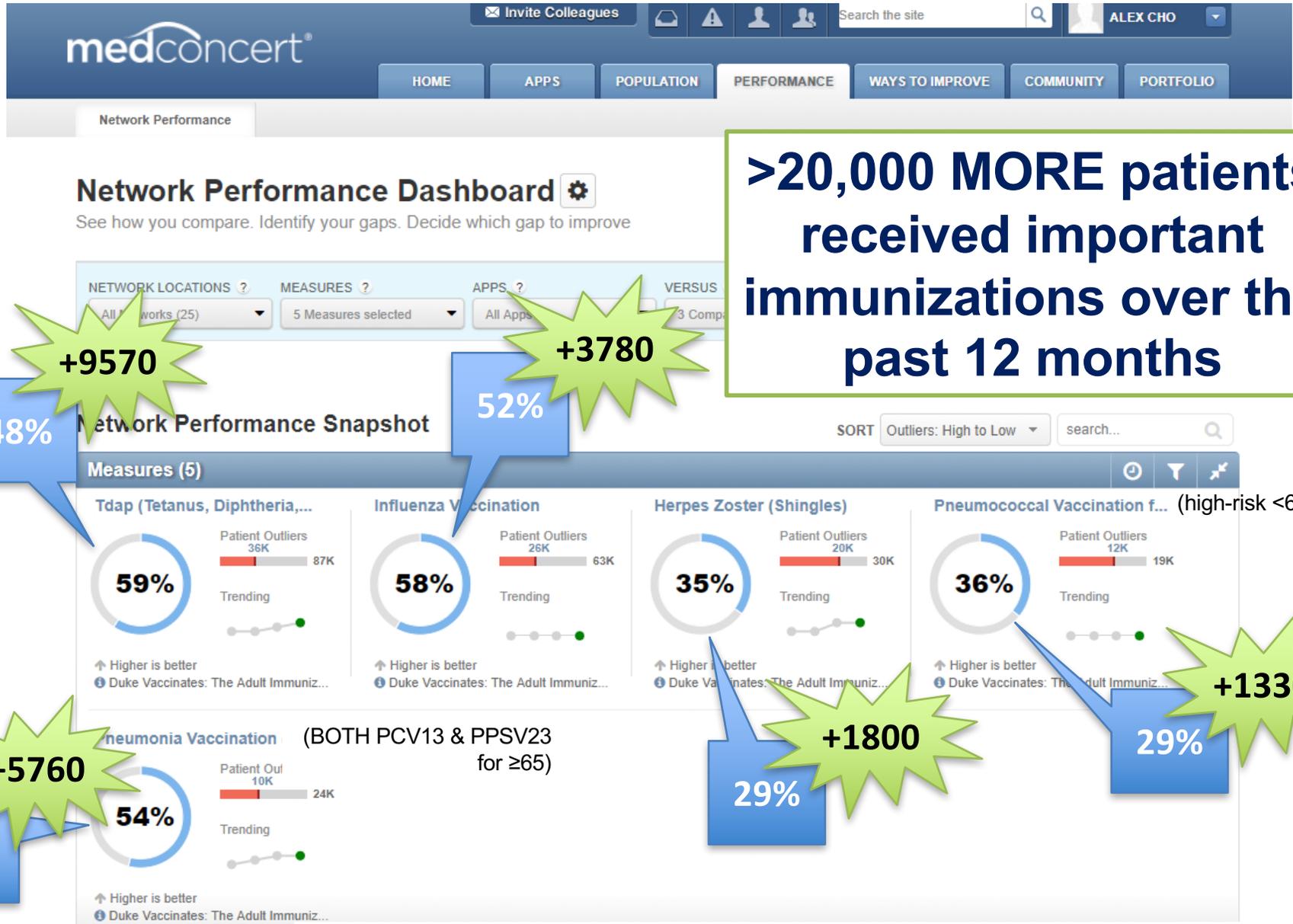


Measures (5)



Values in blue call-out boxes from baseline DPC network data (Apr 1, 2015 – Mar 31, 2016)

Patient Numbers (Sep 1, 2016 – Aug 30, 2017)



>20,000 MORE patients received important immunizations over the past 12 months

Values in blue call-out boxes from baseline DPC network data (Apr 1, 2015 – Mar 31, 2016)

Results – Multivariable Analyses

Patients in intervention clinics were more likely to receive:

- *Influenza vaccine* (adj. OR 1.56, 95% CI 1.30-1.88, $p < 0.001$)
- *Pneumococcal vaccine* (adj. OR 2.40, 95% CI 1.10-5.24, $p=0.028$)

No differences seen between intervention and control clinics for:

- *Tdap vaccine* (adj. OR 1.05, 95% CI 0.87 – 1.26, $p=0.61$)
- *Zoster vaccine* (adj. OR 1.16, 95% CI 0.90 – 1.49, $p=0.25$)

Open Mike: Best Practices; Questions for Peers

What's worked at your clinic?

- Showing (parts of) training videos at staff meetings
- Mass-messaging MyChart reminders to get immunized

What do you do about ... ?

- Reports are shared in huddles
- Resource “book” kept in med area
- Displays for patients in exam rooms

How are you communicating in your clinic about vaccines?

Others?

What vaccine-related challenges are you addressing and how?

- Medicare does not cover zoster in office, Tdap only after acute injury
- Patients aren't always sure about vaccines received elsewhere

Conclusion

- Implementing an evidence-based, multi-component intervention (A&F, clinic-defined targets, educational resources, non-physician clinic champions) resulted in absolute increases in adult immunization rates over a 12-month period for all 4 vaccines
- Adjusted analyses showed significantly higher influenza and pneumococcal vaccination rates in intervention clinics
- Non-physician clinic champions were key to success

Recognizing Our Champions



**End-of-project celebration and
dissemination held October 2017**



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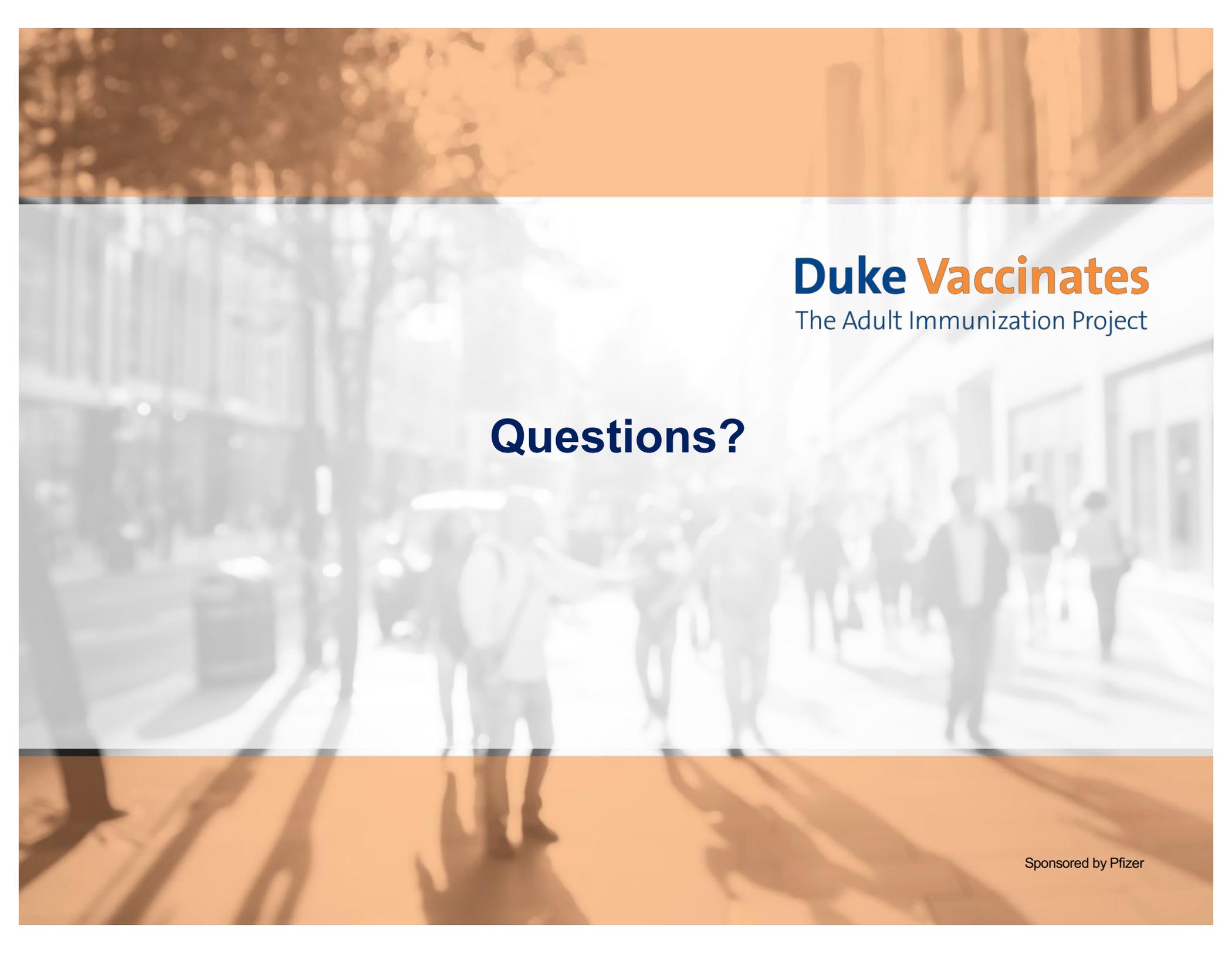
Acknowledgements:

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**24 intervention clinics and their champions, plus
Melissa Bowen RN, Cindy Smith RN, Pat Johnson (Assoc. CNO), John
Anderson MD (CMO), Cynthia Sparrow**



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Questions?

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