

IMMUNIZATION IN THE MEDICAL HOME ENVIRONMENT

OUTCOMES FROM CONTINUING EDUCATION ACTIVITIES

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Given the morbidity and mortality of VPDs in adults, life-course vaccination is a critical component of healthy aging.

INFLUENZA

140,000-710,000
annual hospitalizations

12,000-56,000
annual deaths

PNEUMOCOCCAL

>150,000
annual hospitalizations

>5000
annual deaths

HEPATITIS B

~880,000
living with chronic
disease

HPV

>27,000
cancers diagnosed
annually

CDC, Centers for Disease Control and Prevention; HPV, human papillomavirus; VPD, vaccine-preventable disease. CDC. Vaccine information for adults. June 14, 2024. <https://www.cdc.gov/vaccines-adults/diseases/index.html>

OBJECTIVES

The goal was to develop CE activities that address knowledge and practice gaps among NPs related to adult vaccination through six LOs:

- 1 Review the current adult vaccination landscape, including the latest recommendations and trends in vaccine uptake
- 2 Describe how increasing vaccination uptake across the lifespan can benefit individual patients, medical homes, and the public at large
- 3 Discuss the ways in which medical home environments can equitably support the full spectrum of vaccination recommendations across the lifespan
- 4 Identify barriers that impede the medical home in providing access to vaccines across the lifespan
- 5 Integrate evidence-based approaches to improving vaccination adherence and uptake among patient populations in medical home settings
- 6 Identify tools and resources that are available to providers and personnel that enable continuous learning and performance improvement in vaccine access and vaccine uptake

CE, continuing education; LO, learning objective.

DESIGN & METHODS

CE activity and assessments

- Three accredited CE activities were developed with 4 expert faculty, all with the same core content:
 - Two live webinars (0.75 contact hours each, including 0.25 Rx hours)
 - One on-demand recording of a live seminar from the 2025 AANP National Conference (2.0 contact hours, including 0.5 Rx hours)
- Before the activity, learners answered knowledge and confidence questions (pre-activity responses); on-demand learners also self-reported how often they currently assess patients' immunization status and recommend immunizations that are due
- After the activity, learners answered the same knowledge, confidence, and practice questions again (post-activity responses) and self-reported demographic data

Data analysis

- Data were filtered to include only learners who completed the activity ("completers")
- Descriptive statistics were used for demographic and evaluation data
- Differences between pre- and post-activity multiple-choice and Likert responses were analyzed with paired analyses (McNemar test for individual items; paired t-test for percent correct; significance level, $P \leq .05$); Cohen's d was used for ES
- Self-reported weekly patient counts were cleaned before analysis

ES, effect size

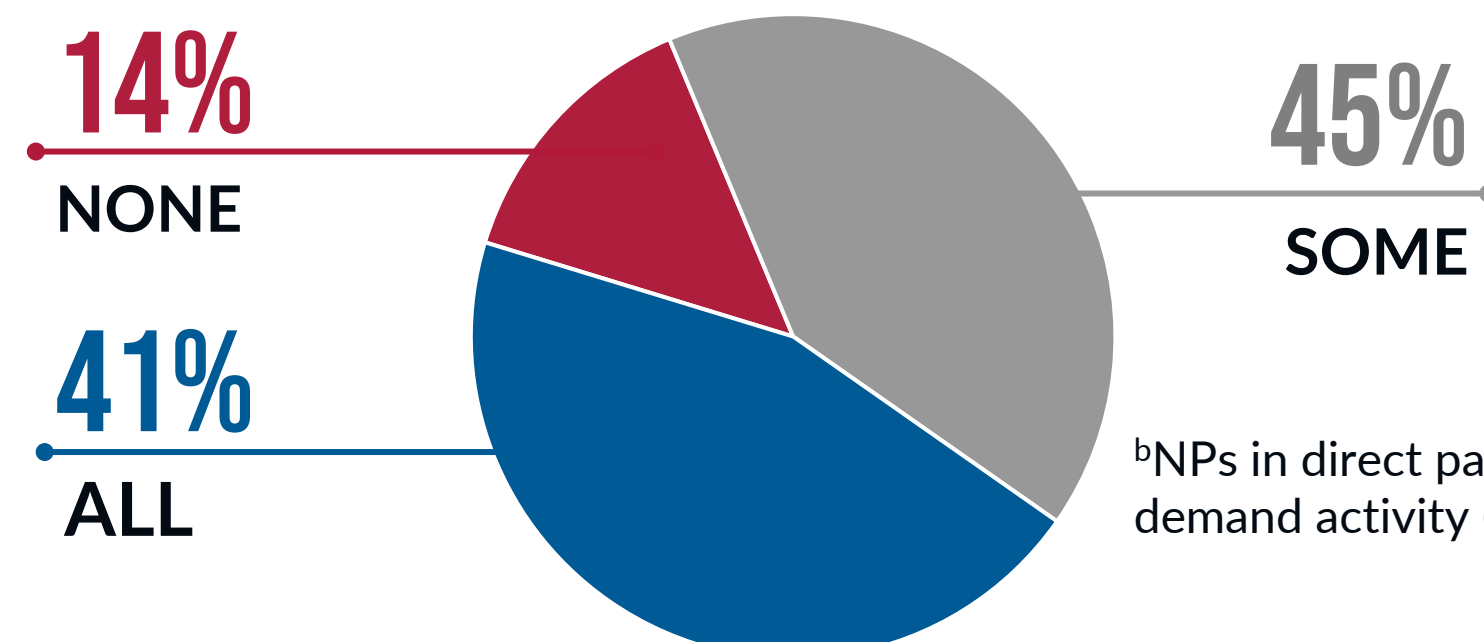
RESULTS: POPULATION

N=12,116
Learners
registered

N=8425
Learners completed an
activity (completers)^a

N=6505
Completers who provide
direct patient care as NPs

Share of NPs Who Currently Immunize or Refer All, Some, or None of Their Patients Due for Immunization Each Week^b



^bNPs in direct patient care, on-demand activity (n=2898)

~22,261 Patients seen per week who are due for immunizations (due patients) but do not receive vaccines or referrals^b

^aCompleters were from Webinar 1 (n=102), Webinar 2 (n=1449), and the on-demand activity (n=6874).

RESULTS: KNOWLEDGE & COMPETENCE

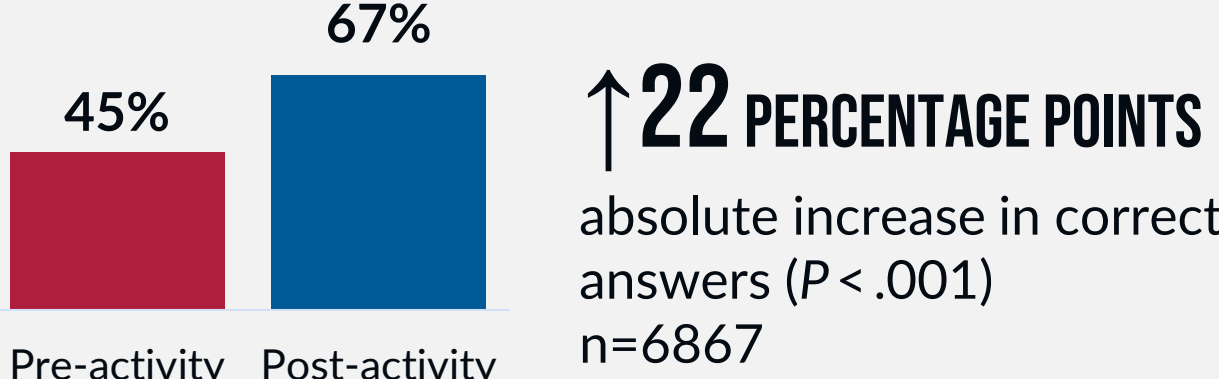
Knowledge significantly increased by 16 percentage points from pre- to post-activity (medium ES; Cohen's $d = 0.58$; n=6866)^c

IMPROVEMENT ON MULTIPLE-CHOICE QUESTIONS

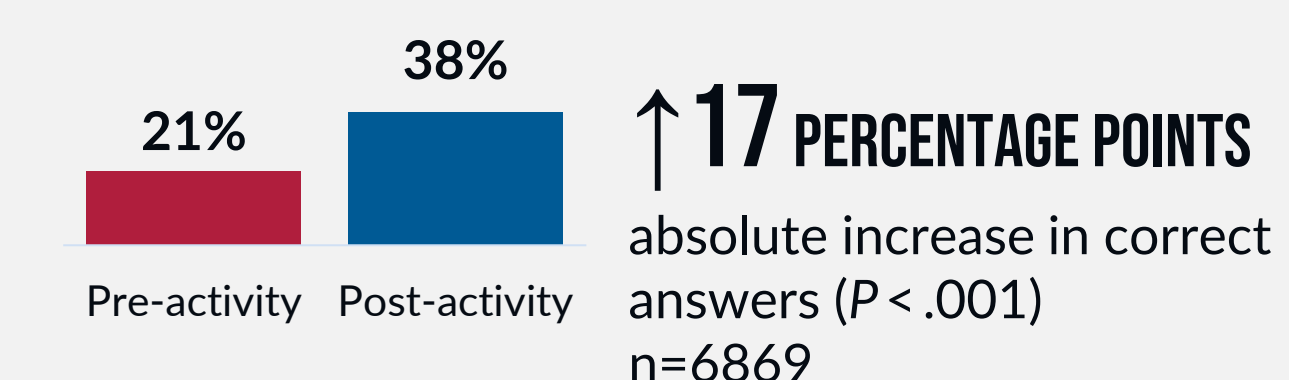
Identifying a recommended strategy for **starting a vaccine conversation**



Recognizing National Vaccine Advisory Committee steps for improving vaccination practices



Listing vaccines for which **CDC V-safe** tracks post-vaccination health



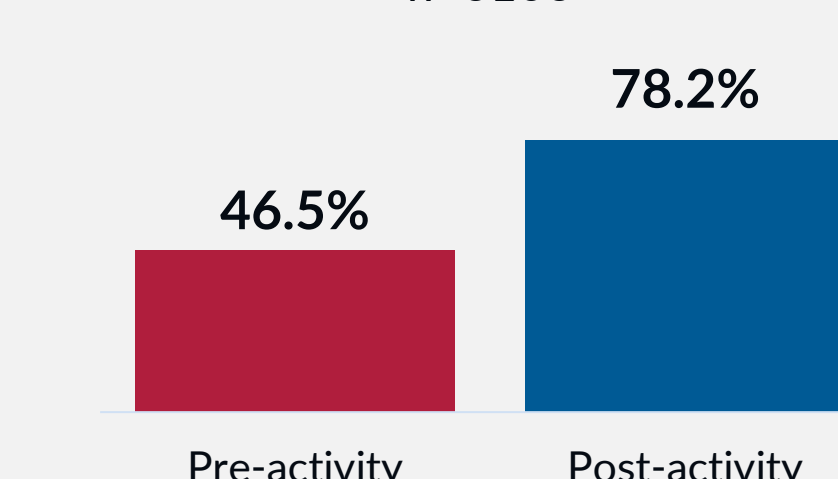
Estimating the proportion of **at-risk adults 19-64 years** with ≥ 1 pneumococcal vaccine dose



Confidence and planned frequency of assessing and recommending immunizations significantly increased from pre- to post-activity^d

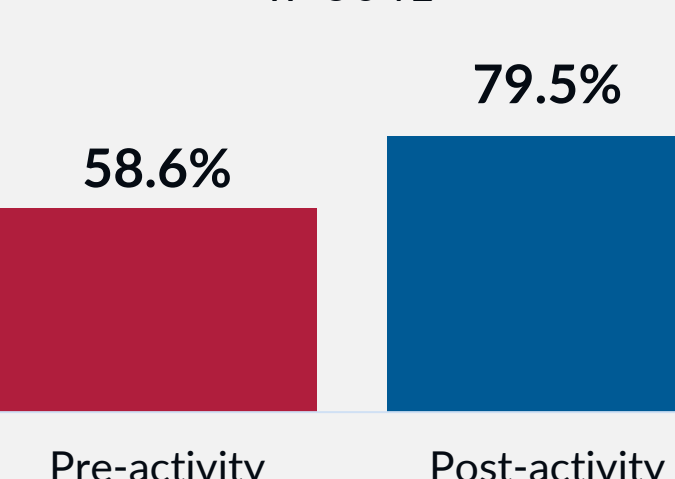
Confidence discussing recommended immunizations with patients

↑31.7 PERCENTAGE POINTS
"Very" and "extremely" confident (P < .001)
n=6106



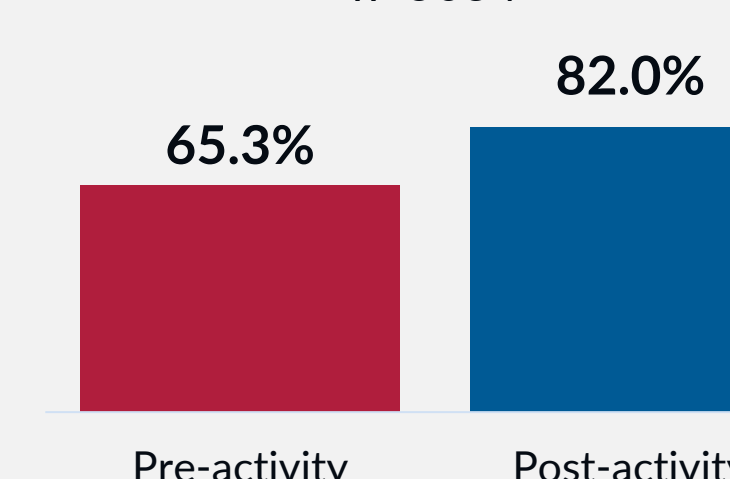
Frequency of assessing immunization status at every visit

↑20.9 PERCENTAGE POINTS
"Very often" and "almost always" (P < .001)
n=5041



Frequency of recommending immunizations to patients who are due

↑16.7 PERCENTAGE POINTS
"Very often" and "almost always" (P < .001)
n=5034



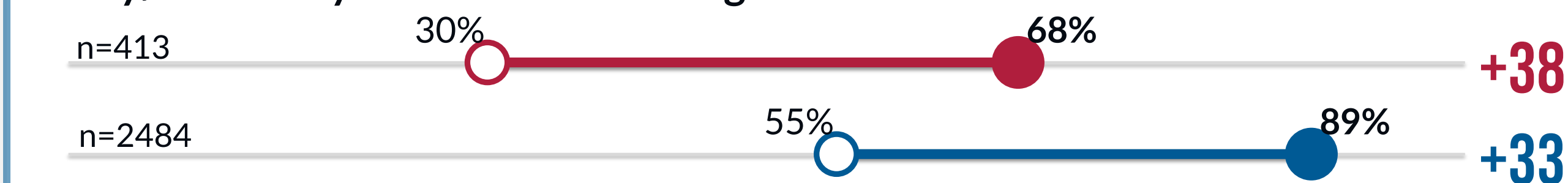
^cOf 6874 completers from the on-demand activity, 8 did not complete all knowledge questions and were excluded from paired analysis. ^dNPs in direct patient care, paired responses from Webinar 2 and the on-demand activity (confidence question) or from the on-demand activity only (frequency questions).

RESULTS: SUBGROUP ANALYSIS

NPs who currently acted on **none** of their due patients made **larger gains**, but their planned practice frequencies stayed below peers' pre-activity levels.^e

● Acted on **NO** due patients
● Acted on **ANY** due patients
○ Pre-activity
● Post-activity
+ = percentage-point gain

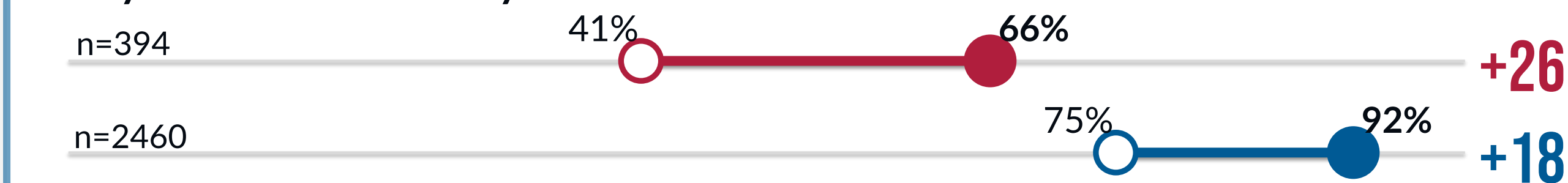
Very/extremely confident discussing recommended immunizations



Very often/almost always assess immunization status at every visit



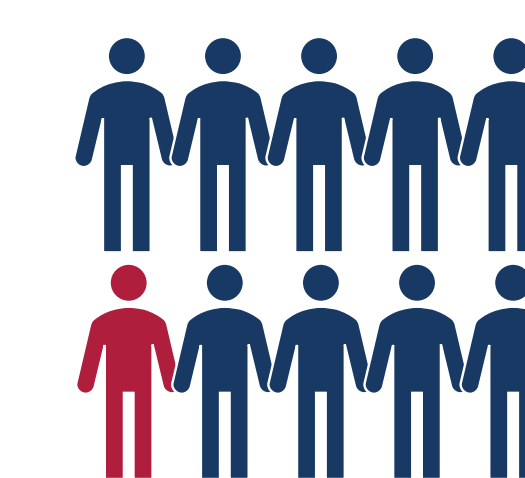
Very often/almost always recommend due immunizations



^eNPs in direct patient care, on-demand activity (n=2898); group based on patient counts self-reported on the evaluation form; paired pre/post ratings

RESULTS: PLANS TO CHANGE

In the post-activity assessment, most completers **planned to implement changes**, with **few anticipated barriers** (n=6505)^f



~9 IN 10 completers planned to implement ≥ 1 activity takeaway, including:

- Updating patients' vaccination status at every visit
- Discussing immunization with all eligible patients
- Providing strong vaccine recommendations

54% of completers did **not** anticipate barriers to practice change

Most common barriers among those naming one:

- Patient/family hesitance (51%)
- Time constraints (24%)
- Clinic or organization policy (10%)

^fAll 3 activities; NPs in direct patient care.

✓ Knowledge and confidence improved significantly, but gaps in starting vaccine conversations persisted.

✓ NPs currently acting on no due patients had greater gains in confidence and planned practice frequency than those acting on at least some due patients but still lagged behind their peers in intent to assess and recommend due

✓ Patient hesitancy and shifting national guidance highlight the need for ongoing education from trusted professional sources.

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