



U.S. Healthcare Provider Perceptions of the Relative Risk of Tobacco Products: Implications for Conversations with Patients Who Smoke

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Healthcare Providers Continue to Demonstrate Misperceptions About Tobacco and Nicotine Products

WHAT PRIOR STUDIES SHOW

Relative-harm misunderstanding

60%

of physicians believe all forms of tobacco are equally harmful

Delnevo et al., 2022

Nicotine misperceptions

80%

of physicians believe nicotine contributes to CVD, COPD, and cancer

Steinberg et al., 2020

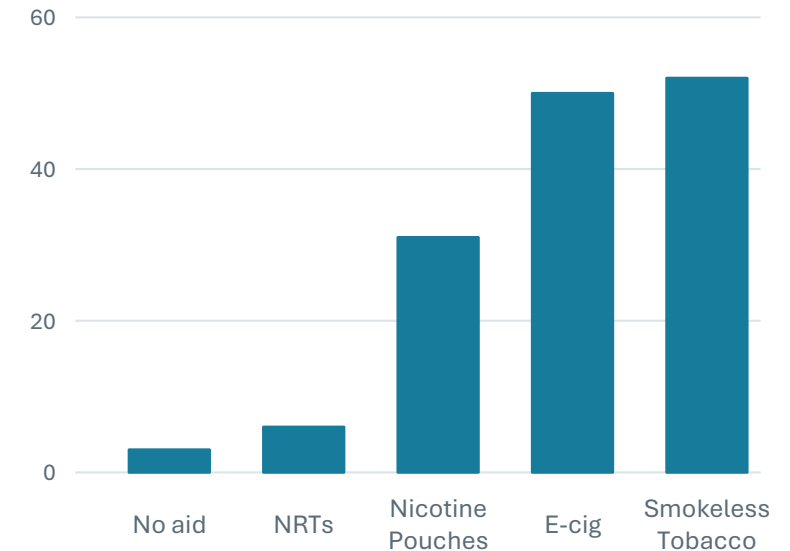
Harm-reduction misunderstanding

~50%

of HCPs believe switching completely to e-cigarettes or smokeless tobacco cannot reduce health risks

Martelle et al., 2026

Proportion who believe complete switching cannot reduce risk



Martelle et al., 2026

“...a significant percentage of primary care providers are not adequately informed about the comparative risks of different tobacco products, and some mistakenly believe nicotine itself is a carcinogen”

Bret Koplow, Acting Director, FDA CTP, FDLI Tobacco and Nicotine Products Regulation and Policy Conference (2025)

Study Design

The 2026 survey replicated the 2024 HCP study and extended it to generate broader insights.



New in 2026

Added specialties

Direct nicotine measure

Education and CME/CPE

Study Sample and Weighting

Online survey of 900 U.S. healthcare providers across nine provider groups



**NP/PA
Primary Care**

n = 100



**NP/PA
Specialty**

n = 100



**Family /
General
Practice**

n = 100



**Internal
Medicine**

n = 100



**Obstetrics /
Gynecology**

n = 100



Cardiology

n = 100



Pulmonology

n = 100



Psychiatry

n = 100

NEW 2026



**Retail
Pharmacists**

n = 100

NEW 2026

AT A GLANCE

900 completed surveys

100 respondents in each of 9 specialty groups



Specialty-based weighting

Total-sample results were weighted so that each specialty contributes in proportion to its prevalence in the U.S. healthcare workforce

**National online HCP panel
Fielded March 2–12, 2026**

Key Survey Topics

Healthcare provider knowledge, perceptions, beliefs, and educational interests



Regulatory Knowledge

Which U.S. government agencies regulate tobacco and nicotine-containing products?



Trust in Organizations

Trust in national, medical, specialty, and government organizations for accurate TNP information.



Product Risk Perceptions

Overall health-related risk ratings across different tobacco and nicotine products.



Sources of Smoking Risk

Attribution of lung cancer and cardiovascular disease risk to factors related to cigarette smoking.



NEW 2026

Nicotine Beliefs

Level of agreement with the statement: "Nicotine is a carcinogen."



Complete Switching

Understanding how switching completely to noncombustible products may affect smoking-related health risks.



NEW 2026

Continuing Education

Interest in CME/CPE and learning more about tobacco and nicotine products.

TNPs = tobacco and nicotine-containing products; CME/CPE = continuing medical/pharmacy education

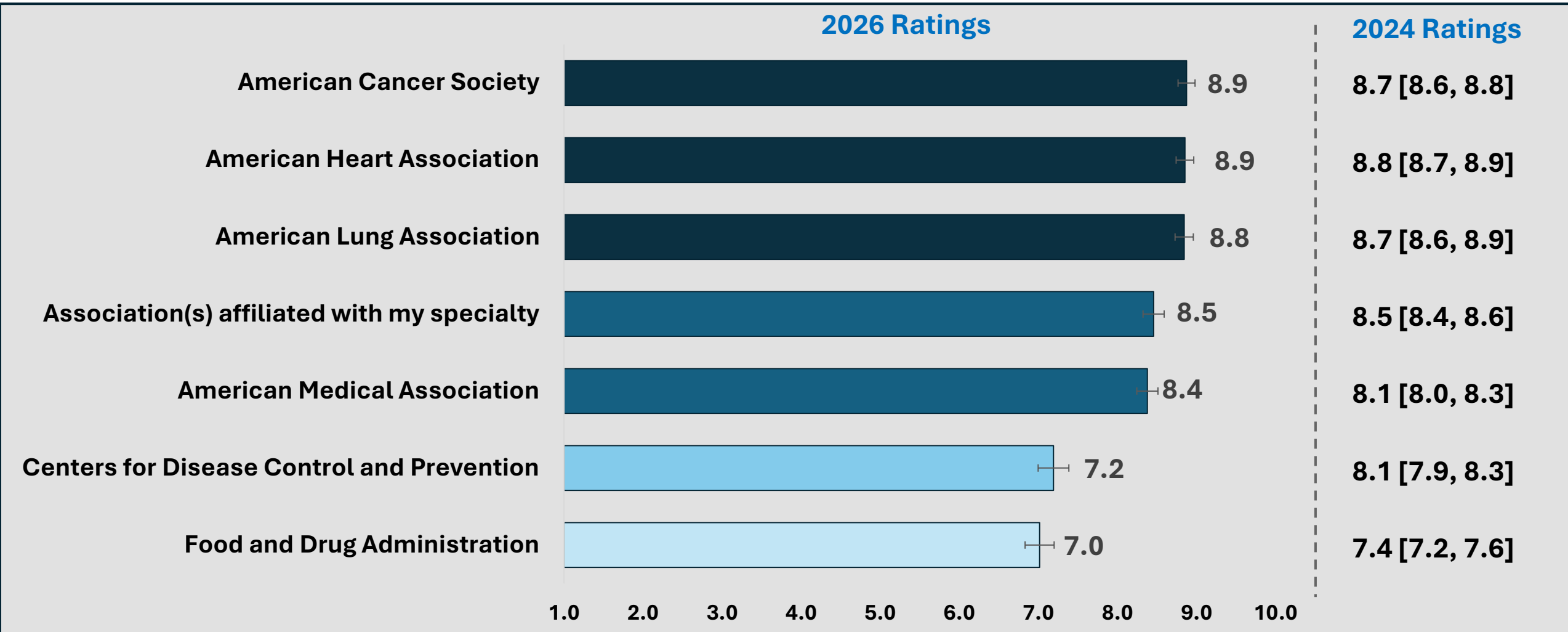
Only Half of HCPs Recognize FDA as Tobacco Product Regulator

Proportion of HCPs



Only 52% of HCPs identified FDA as regulating TNPs

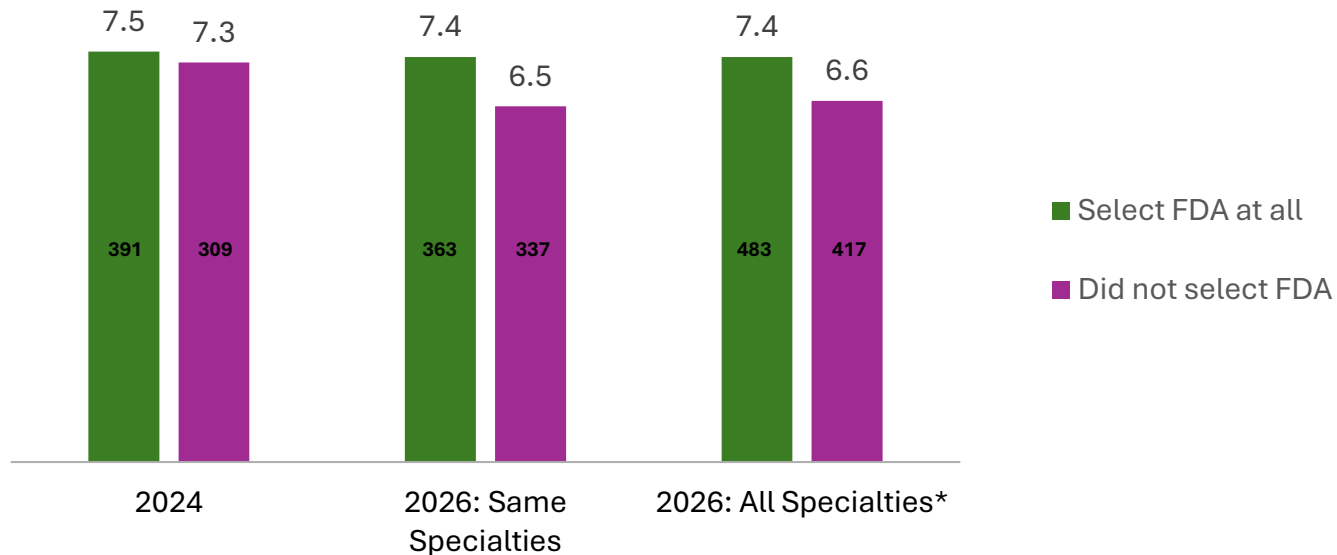
HCPs Trust Federal Health Agencies Less Than Medical and Specialty Organizations



All organizations were trusted above the midpoint of the scale, but FDA and CDC received the lowest ratings

Awareness of FDA's Tobacco Regulatory Role is Associated with Higher Trust in FDA in 2026

Mean Rating of Trust in FDA by Awareness of Regulation



Unlike 2024, awareness of FDA's tobacco regulatory role was associated with significantly higher trust in FDA in 2026

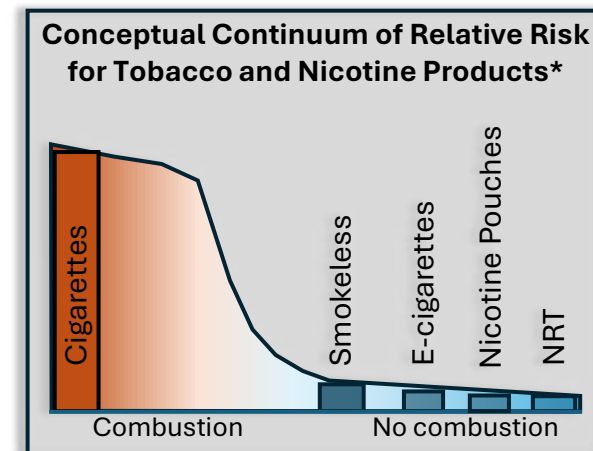
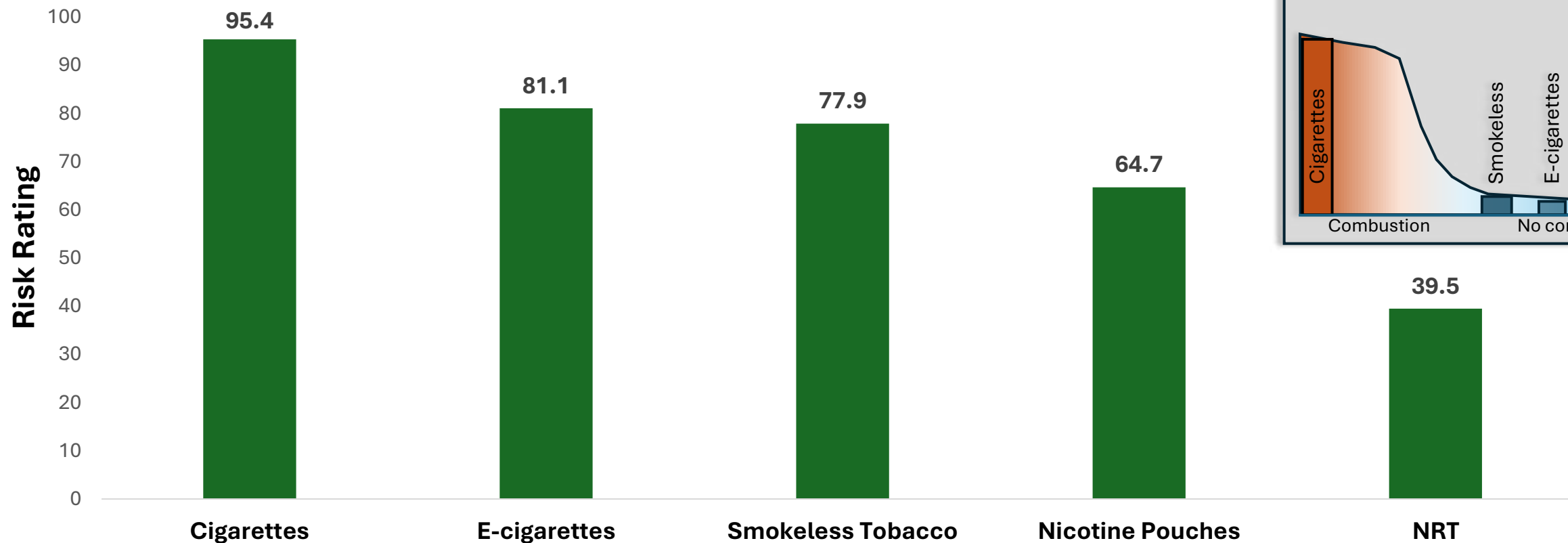
* Added PSYCH and PHARM

Q. Which of the following government agencies regulate tobacco and nicotine-containing products in the United States? Select all that apply.

Q. Please rate how much you trust each of the following organizations to provide accurate information about the risks of tobacco and nicotine-containing products, using a 10-point scale where "1" means "do not trust at all" and "10" means "trust completely."

HCPs Recognize a Continuum of Risk

Mean Overall Health Risk Ratings



HCPs recognized cigarettes as the highest-risk product and NRT as the lowest-risk product, but perceived substantially limited differentiation among noncombustible products

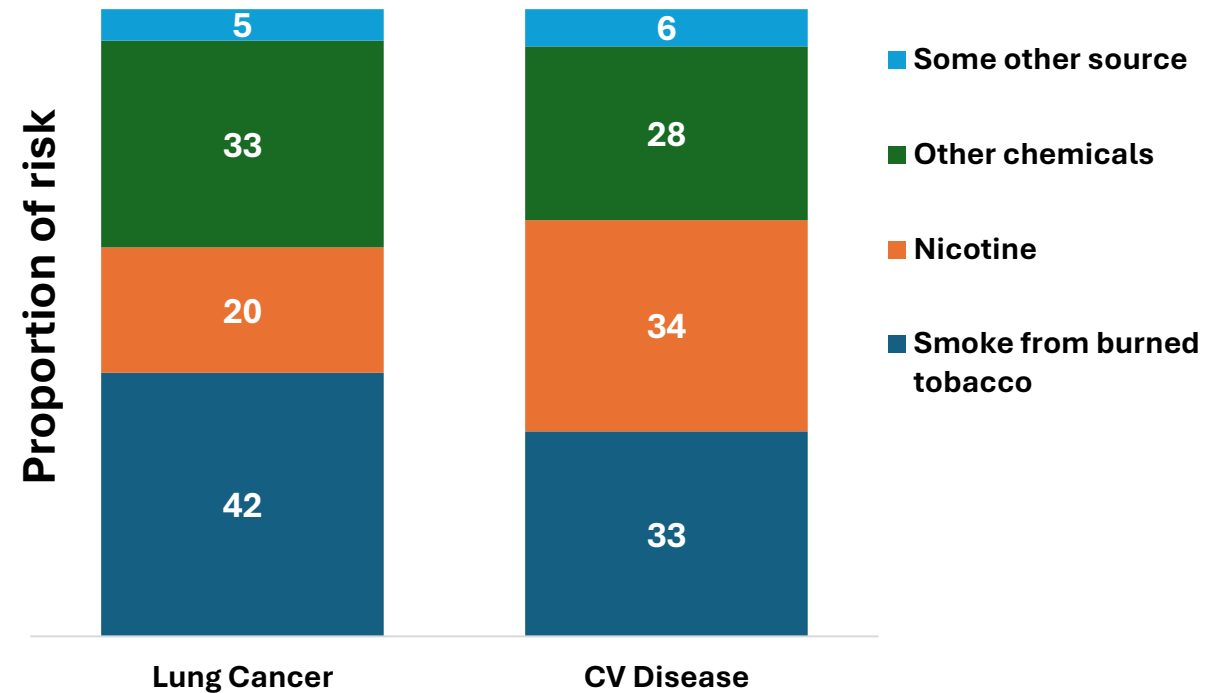
*Adapted from FDA continuum-of-risk concepts and published tobacco harm reduction literature. Product placement is illustrative and intended to reflect the relative ordering of product categories rather than quantitative differences in risk.

HCPs Attribute Substantial Lung Cancer and Cardiovascular Risk to Nicotine

Consider the risk of [lung cancer / cardiovascular disease] associated with smoking cigarettes as 100%. What percent of that risk do you attribute to each of the following? The total must sum to 100%.

	% of risk
Smoke from burned tobacco	____%
Nicotine	____%
Other chemicals found in cigarettes	____%
Some other source	____%
Total =	100%

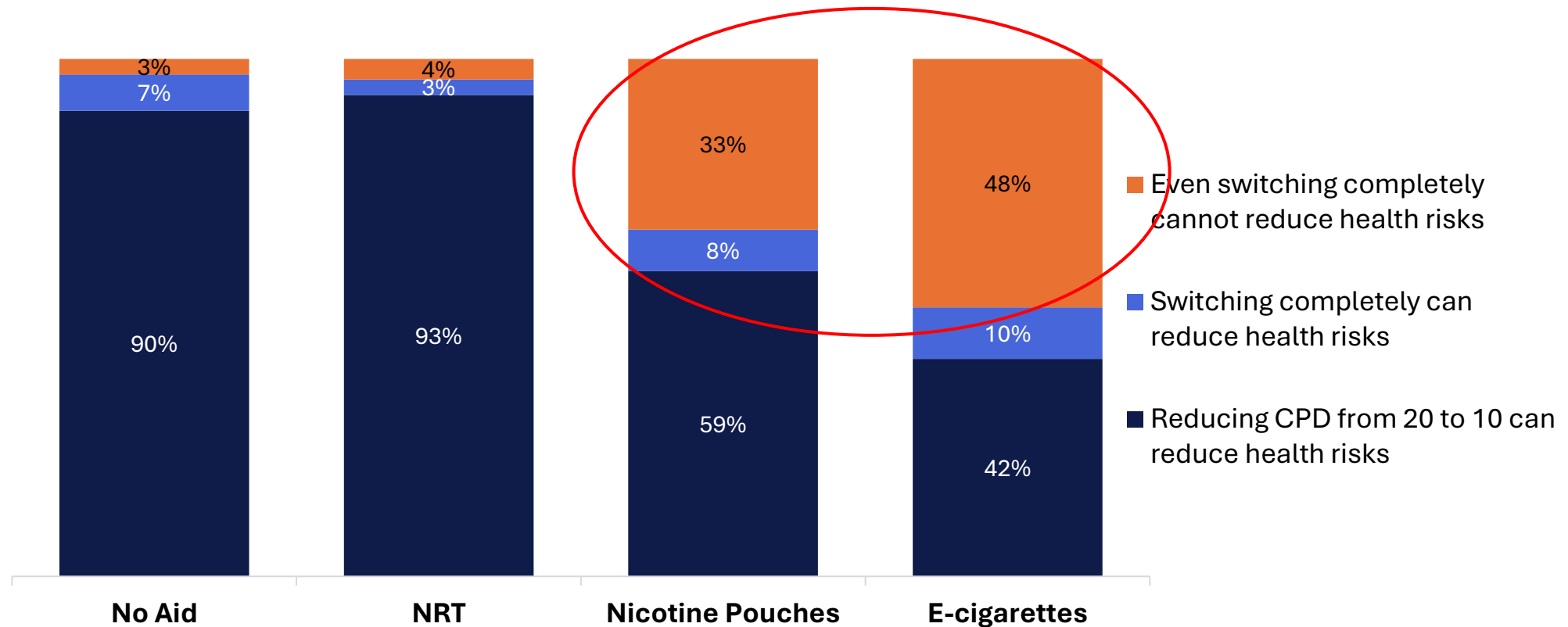
Mean Proportion of Risk from Smoking Cigarettes Attributed to Various Sources
- For Lung Cancer and CV Disease -



HCPs attribute 20% of lung cancer risk and 34% of the CVD risk associated with cigarette smoking to nicotine

Many HCPs Do Not Believe Switching to Noncombustible Products Can Reduce Health Risks

Proportion of HCPs Who Believe Partial and Complete Switching from Cigarettes Can Reduce Risk



More than 30% of HCPs believe partial or complete switching to lower-risk TNPs cannot reduce health risks

Nicotine Beliefs are Not Applied Uniformly Across Products

66%

of HCPs somewhat or strongly agreed

“Nicotine is a carcinogen”

FALSE STATEMENT

If this belief were applied consistently, recognition of benefit would be expected to decline for both nicotine-containing products.

HOW IS THE BELIEF APPLIED?



Compare the change from “strongly disagree” to “strongly agree”

Belief that complete switching can reduce health risks

NRT

99%

Strongly disagree

93%

Strongly agree

-6 pts

Belief remained high across nicotine-belief groups

LITTLE CHANGE

Nicotine Pouches

80%

Strongly disagree

57%

Strongly agree

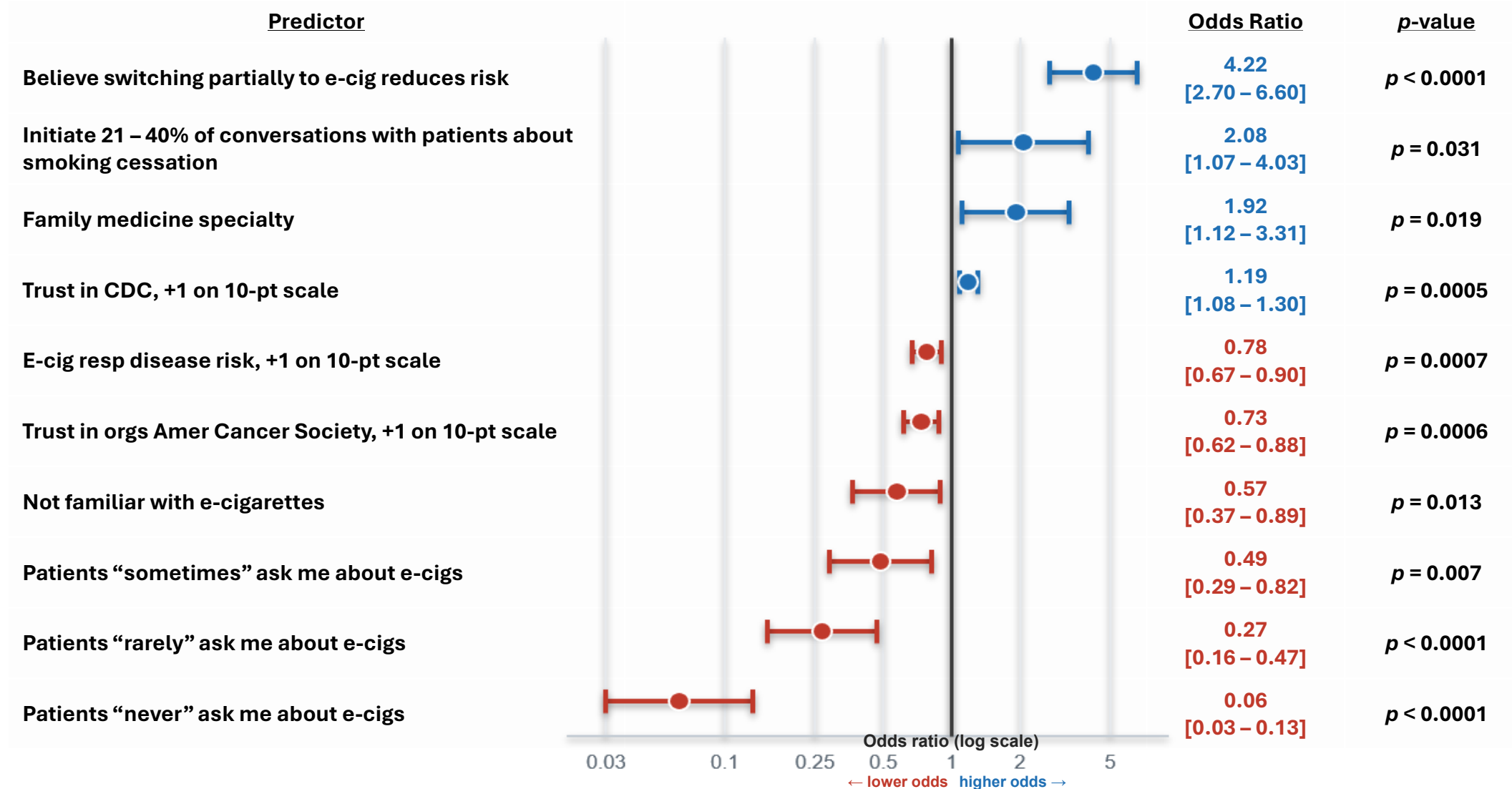
-23 pts

Recognition of potential benefit declined as agreement increased

SUBSTANTIAL DECLINE

Agreement that nicotine is a carcinogen was applied differently to beliefs about the risk reduction potential of NRT and nicotine pouches

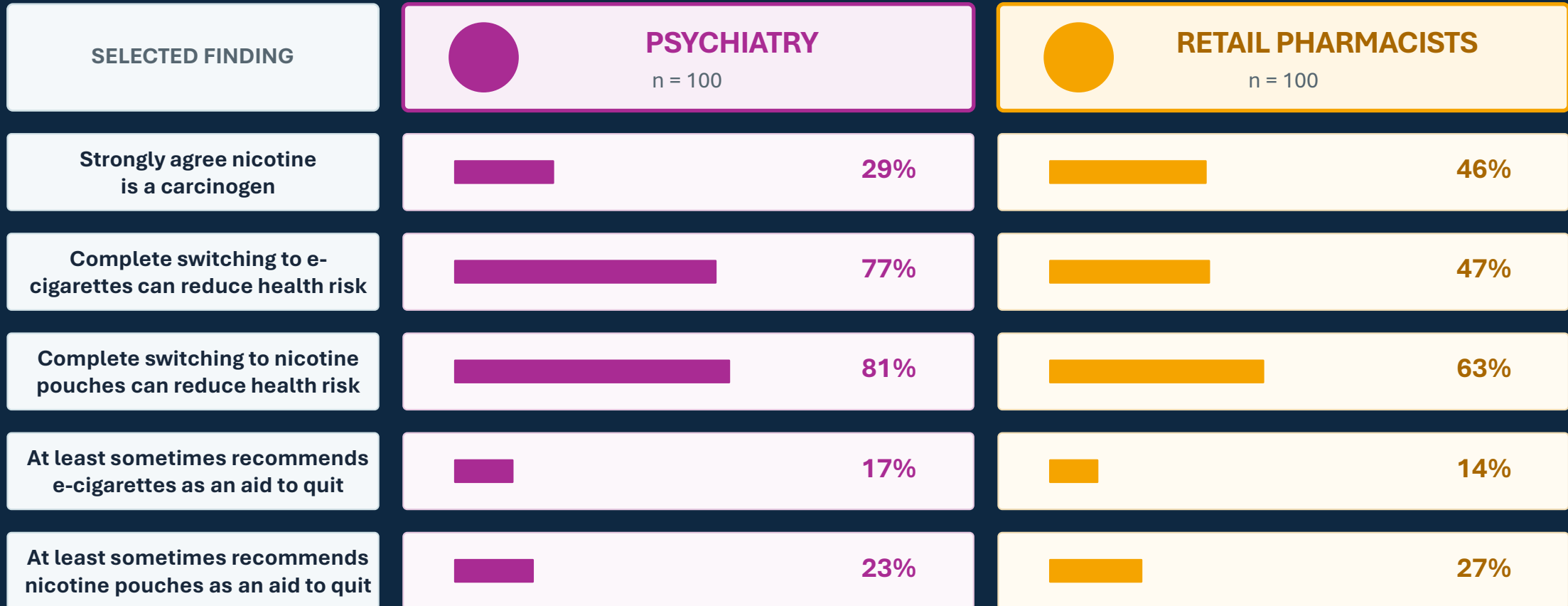
Predictors of Recommending E-Cigarettes for Smoking Cessation



HCP recommendations of e-cigarettes are strongly influenced by harm reduction beliefs

Newly Added Specialties Revealed Distinct Perspectives

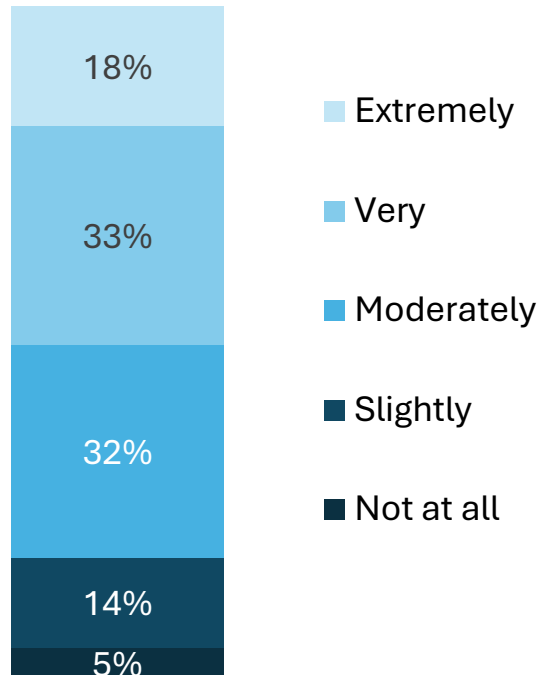
Psychiatry and retail pharmacists were added in 2026



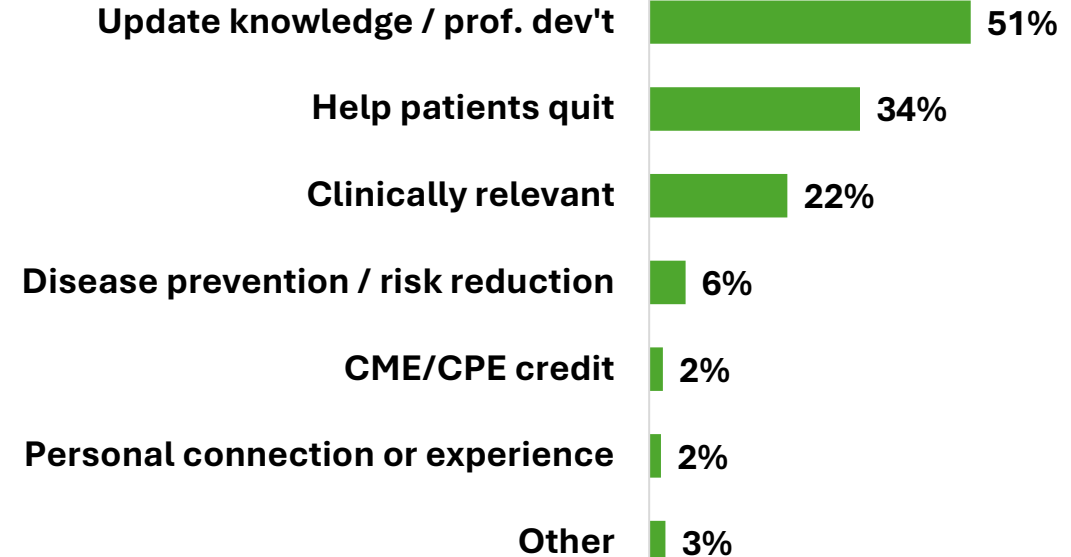
Psychiatrists and pharmacists differ substantially in their beliefs about nicotine and harm reduction, but those differences are not reflected in large differences in recommendation behavior

Half of HCPs Would Likely Participate in CME/CPE on Tobacco and Nicotine Products in the Next Year

Likelihood of Attending CME/CPE on TNPs in Next 12 Months



Thematic Analysis of Interest in Continuing Education



Updating knowledge and helping patients quit smoking were the most common reasons for interest in future education

Conclusions



Knowledge Gaps Persist

Many HCPs lack accurate knowledge about tobacco regulation, product risks, and nicotine.



Nicotine Misperceptions Persist

Two-thirds of HCPs agreed that nicotine is carcinogenic, and those beliefs were not applied consistently across products.



Many HCPs Want Additional Education

Approximately half of HCPs reported interest in future CME/CPE opportunities focused on TNPs.

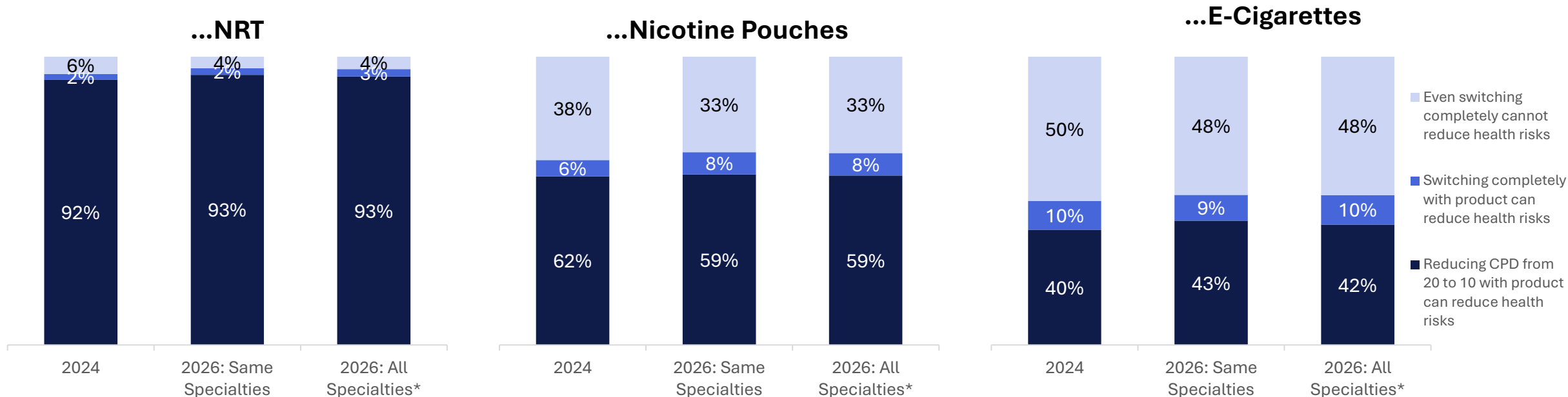


Reference Slides

Can Switching Completely from Cigarettes Reduce Health Risk?

- Respondents were asked if partial or complete switching from cigarettes can reduce health risk when accomplished in various ways
- Roughly half of HCPs believe that patients *cannot* reduce health risk by switching completely from cigarettes to e-cigarettes; one-third of HCPs believe that switching completely using nicotine pouches *cannot* reduce health risks

Proportion of HCPs Who Believe Partial and Complete Switching from Cigarettes Can Reduce Health Risks by Using...



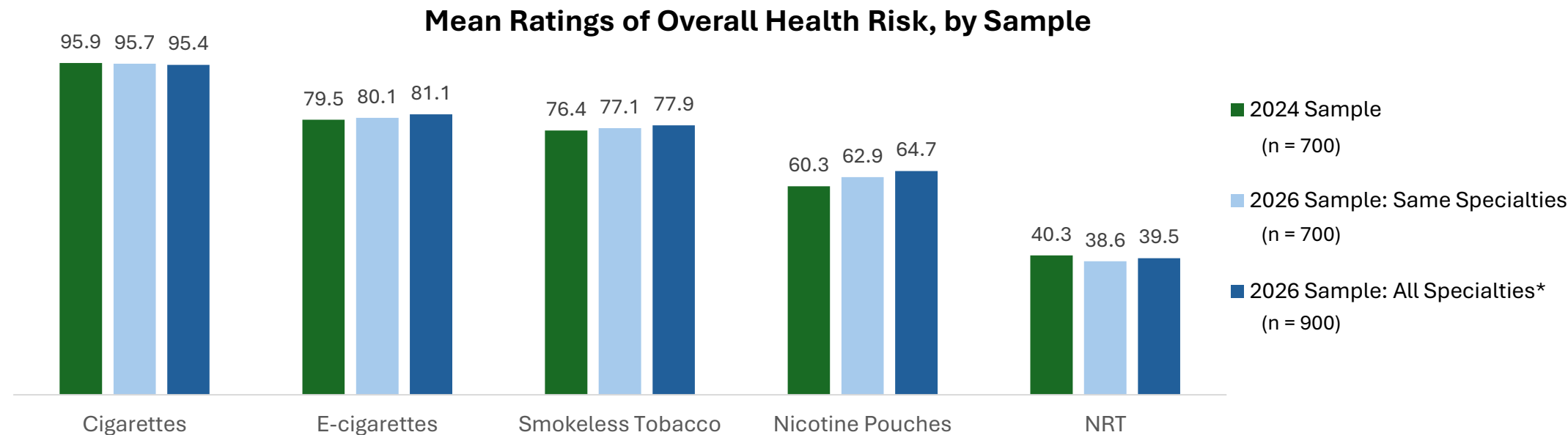
* Added PSYCH and PHARM

Q8. Do you believe the following changes in cigarette smoking behavior can reduce the health risks of smoking?

Reducing cigarettes per day from 20 to 10 by using... Reducing cigarettes per day from 20 to 0 by switching completely to...

Perceptions of Overall Health Risk for TNPs

- Overall health risk ratings are very similar for the two samples
 - The slightly higher ratings in the entire 2026 sample reflect higher ratings from retail pharmacists



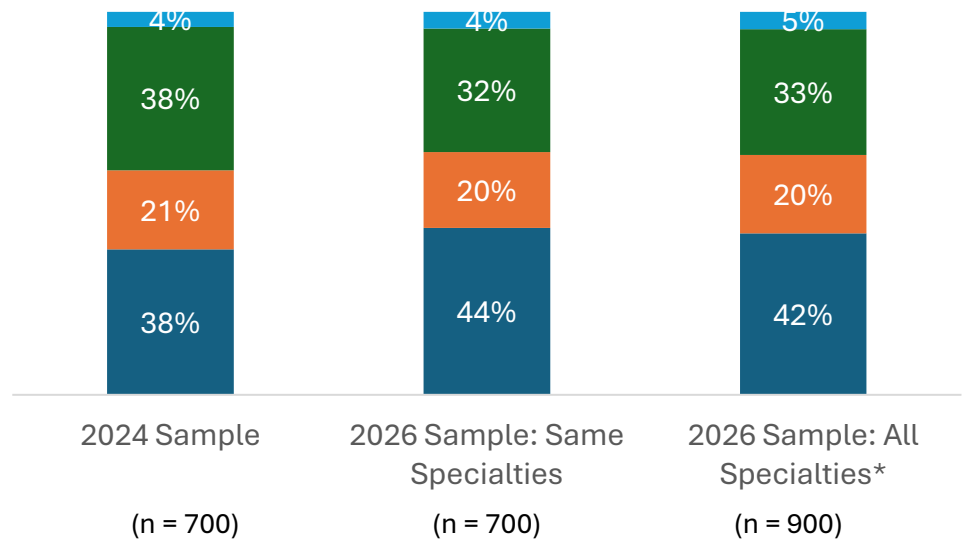
**Added PSYCH and PHARM*

Q4. Now we want to understand your perceptions of the overall health-related risks of different types of products. Please place each of the following products on a scale where “0” means “No Risk” and “100” means “Substantial Risk”.

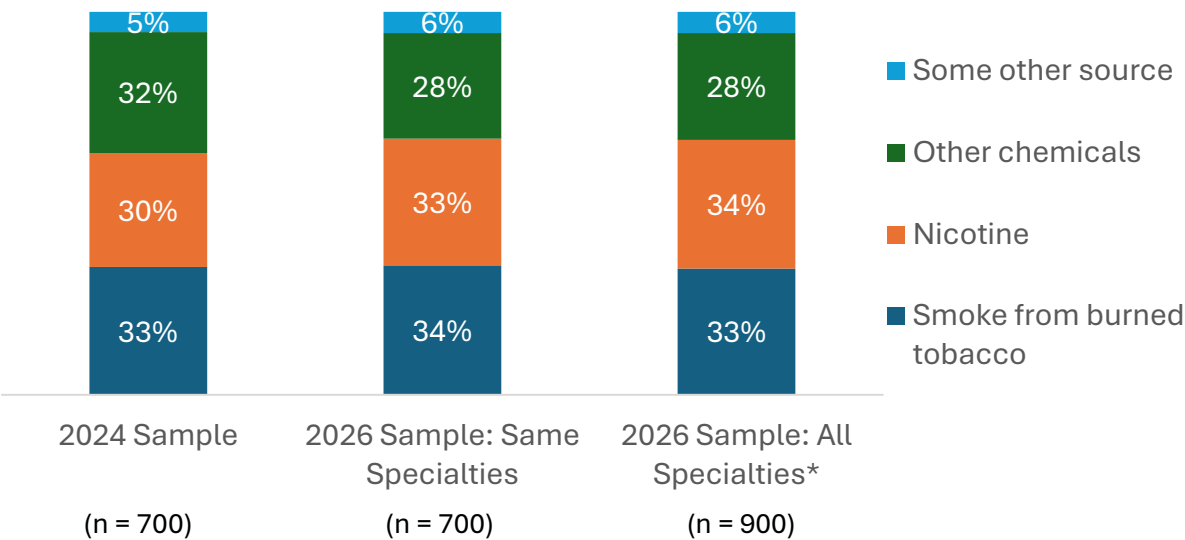
Beliefs About Sources of Risk from Smoking Cigarettes

- Respondents were asked the proportion of lung cancer risk and of cardiovascular disease risk that they attribute to different sources from cigarette smoking
- The data show that HCPs in the second sample correctly attribute more of the risk of lung cancer to combustion of tobacco; however, they also attribute more CV risk to nicotine

**Proportion of Lung Cancer Risk From Smoking Cigarettes
Attributed to Various Sources, by Sample**



**Proportion of Cardiovascular Risk From Smoking Cigarettes
Attributed to Various Sources, by Sample**



* Added PSYCH and PHARM

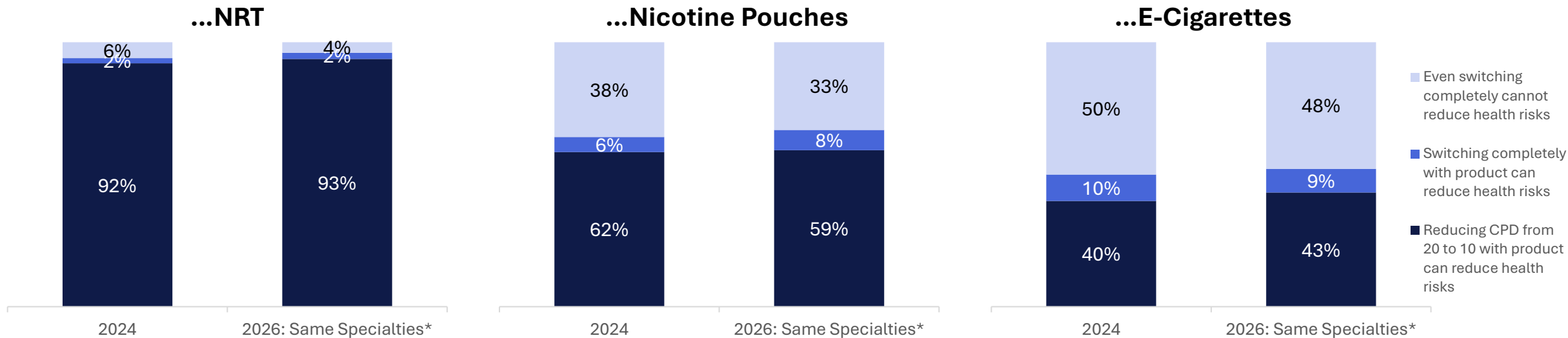
Q3a. Consider the risk of lung cancer associated with smoking cigarettes as 100%. What percent of that risk do you attribute to each of the following?

Q3b. Consider the risk of cardiovascular disease associated with smoking cigarettes as 100%. What percent of that risk do you attribute to each of the following?

Can Switching Completely from Cigarettes Reduce Health Risk?

- Respondents were asked whether partial or complete switching from cigarettes can reduce health risk if accomplished in various ways
- Roughly half of HCPs believe that patients cannot reduce health risk by switching completely from cigarettes to e-cigarettes
- One-third of HCPs believe that switching completely using nicotine pouches cannot reduce health risks; by contrast, fewer than one in ten HCPs believes the same about NRT

Proportion of HCPs (n = 700) Who Believe Partial and Complete Switching from Cigarettes Can Reduce Risk by Using...

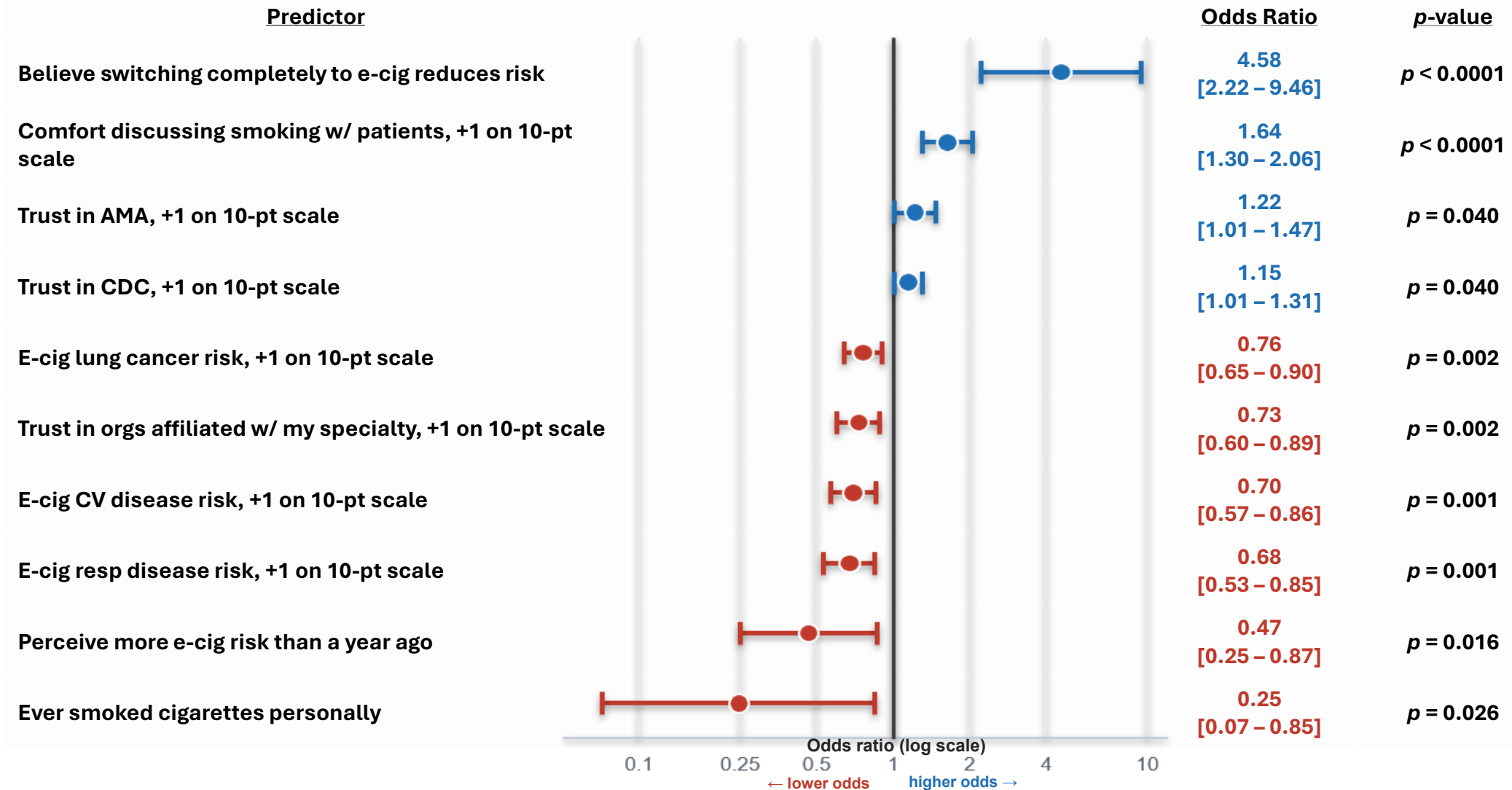


* Results for 2026 sample with and without inclusion of PSYCH and PHARM were extremely similar.

Q8. Do you believe the following changes in cigarette smoking behavior can reduce the health risks of smoking?

Reducing cigarettes per day from 20 to 10 by using... Reducing cigarettes per day from 20 to 0 by switching completely to...

Predictors of More Accurate Relative Risk Perceptions of E-cigarettes to Cigarettes



HCP accuracy of e-cigarettes risk perceptions were strongly linked to harm reduction beliefs

Table 22: Regression Results for Frequency of Recommending Nicotine Pouches

Independent Variable	Parameter/ Coefficient	Std. Err.	Wald Chi-Square	p-value
HCP Specialty				
FP/GP (reference)				
NP/PA Primary Care	0.000	0.263	0.000	1.000
NP/PA Specialty	-0.176	0.266	0.439	0.508
IM	0.261	0.262	0.992	0.319
OB/GYN*	-0.760	0.280	7.350	0.007
CARD	0.139	0.262	0.282	0.595
PULM	-0.101	0.264	0.146	0.702
PSYCH	-0.387	0.271	2.038	0.153
PHARM	-0.268	0.269	0.994	0.319
Age	-0.002	0.006	0.092	0.761
Gender				
Male (reference)				
Female*	-0.391	0.153	6.531	0.011
Non-binary	Insufficient sample			
Tobacco History				
None (reference)				
Used cigarettes	-0.098	0.222	0.193	0.660
Used e-cigarettes	Insufficient sample			
Used smokeless	Insufficient sample			
Used nicotine pouches	Insufficient sample			
Time Since Last Training				
None (reference)				
More than 5 years ago	0.054	0.168	0.103	0.749
3-5 years ago*	0.564	0.209	7.299	0.007
1-2 years ago*	0.722	0.216	11.130	0.001
Within the last year	0.450	0.269	2.794	0.095
Overall Risk Rating				
Cigarettes*	-0.042	0.007	34.733	<0.001
Nicotine pouches*	-0.010	0.003	14.434	<0.001
Difference in Overall Risk Rating				
Cigarettes minus nicotine pouches	0.004	0.002	2.428	0.119
Nicotine is a carcinogen	0.044	0.049	0.809	0.369

* Indicates statistical significance.

Table 21: Regression Results for Frequency of Recommending E-Cigarettes

Independent Variable	Parameter/ Coefficient	Std. Err.	Wald Chi-Square	p-value
HCP Specialty				
FP/GP (reference)				
NP/PA Primary Care*	-0.762	0.277	7.586	0.006
NP/PA Specialty*	-0.981	0.284	11.919	0.001
IM	-0.341	0.268	1.617	0.204
OB/GYN*	-0.996	0.286	12.151	0.001
CARD	-0.335	0.267	1.579	0.209
PULM	-0.252	0.265	0.907	0.341
PSYCH*	-0.571	0.273	4.372	0.037
PHARM*	-0.845	0.281	9.038	0.003
Age	0.011	0.007	2.825	0.093
Gender				
Male (reference)				
Female	-0.278	0.160	3.017	0.082
Non-binary	Insufficient sample			
Tobacco History				
None (reference)				
Used cigarettes	-0.375	0.248	2.294	0.130
Used e-cigarettes	Insufficient sample			
Used smokeless	Insufficient sample			
Used nicotine pouches	Insufficient sample			
Time Since Last Training				
None (reference)				
More than 5 years ago	-0.109	0.178	0.374	0.541
3–5 years ago*	0.494	0.221	5.017	0.025
1–2 years ago*	0.615	0.228	7.303	0.007
Within the last year*	0.566	0.278	4.158	0.041
Overall Risk Rating				
Cigarettes*	-0.051	0.007	47.797	<0.001
E-cigarettes*	-0.023	0.004	37.728	<0.001
Difference in Overall Risk Rating				
Cigarettes minus e-cigarettes*	0.012	0.004	9.844	0.002
Nicotine is a carcinogen	0.051	0.052	0.983	0.321

* Indicates statistical significance.