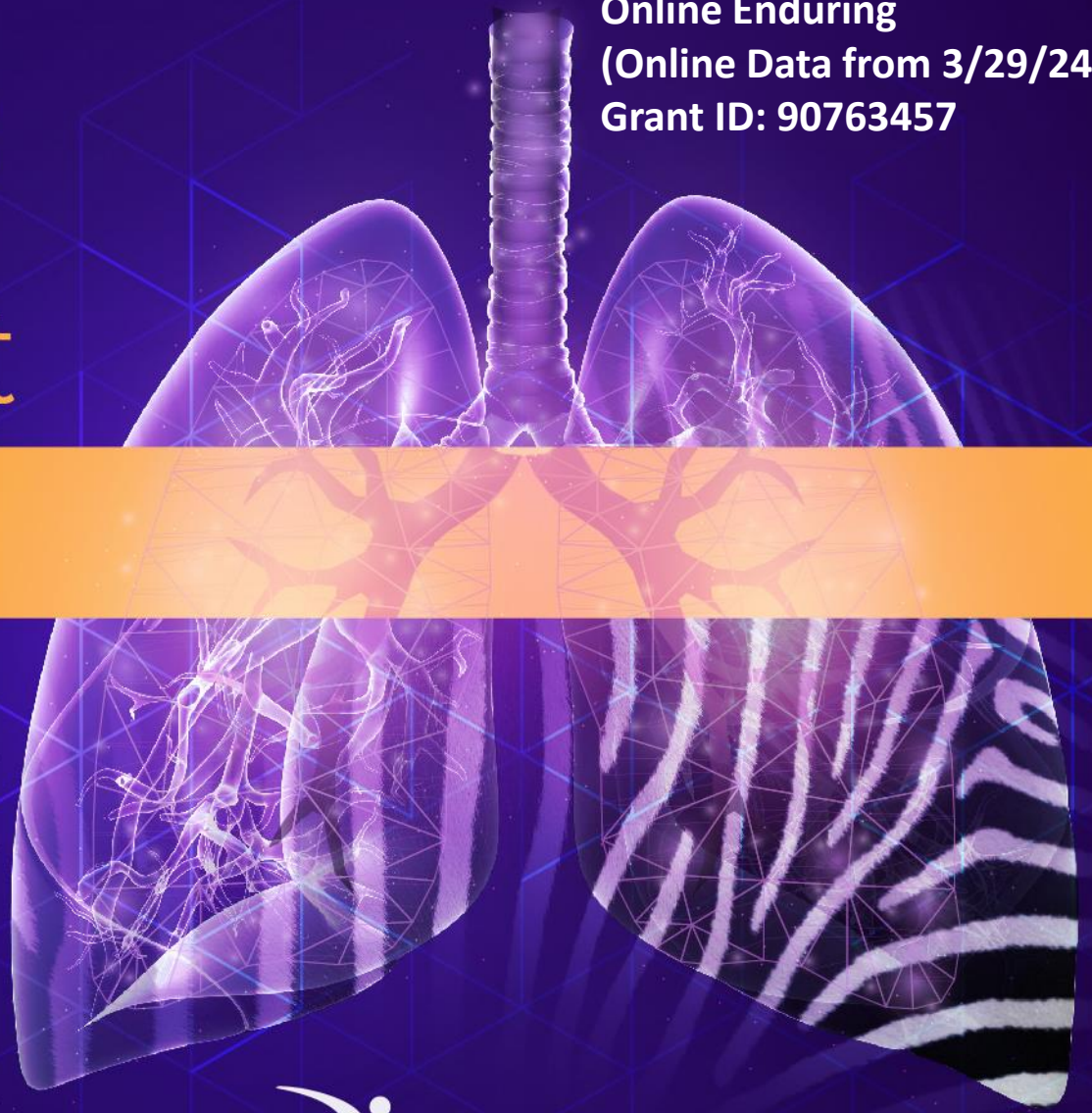
FINAL Outcomes Summary
Online Enduring
(Online Data from 3/29/24 – 03/29/25)
Grant ID: 90763457

Spotting a Zebra:

When to Suspect Cystic Fibrosis and What to Do Next



This activity is supported by an independent educational grant from Vertex Pharmaceuticals.

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Executive Summary
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Program Overview

This 60-minute online activity was designed to engage specialty health care practitioners in infectious disease, pulmonology, and gastroenterology on the ongoing impact of misdiagnosing Cystic Fibrosis (CF). In this activity, leading experts will increase awareness about missed diagnoses; examine factors that lead to missed diagnoses including race, rare mutations and pancreatic sufficiency; and analyze options for patient testing and treatment of suspected CF. The activity features 4 chapters, a patient perspective video, expert panel discussion, and interactive polling on key concepts related to evaluation and treatment of Cystic Fibrosis.

Learning Objectives

1. Identify why diagnoses of cystic fibrosis continue to be missed both in infancy and later into adolescence and adulthood.
2. Examine the patterns of disease that people with CF and CFTR-related disorders may exhibit in order to refer patients for additional testing.
3. Develop a plan of treatment for patients suspected of having CFTR-related disorders or CF.

Target Audience & Accreditation

Target Audience: Infectious Disease Physicians, Pulmonologists, Gastroenterologists, NPs, PAs, nurses and other health care providers who care for patients with CF

National Jewish Health designates this enduring material for a maximum of 1.0 *AMA PRA Category 1 Credit*™ and 1.0 nursing contact hours.

Enduring activity on Healio:
March 29, 2024 – March 29, 2025

Link: https://cme.healio.com/infectious-disease/20240325/spotting-a-zebra-when-to-suspect-cystic-fibrosis-and-what-to-do-next

Program Features
Final Outcomes Summary

Patient Perspective Video

88%

evaluation respondents reported the patient video improved their understanding of patient needs, challenges, and barriers

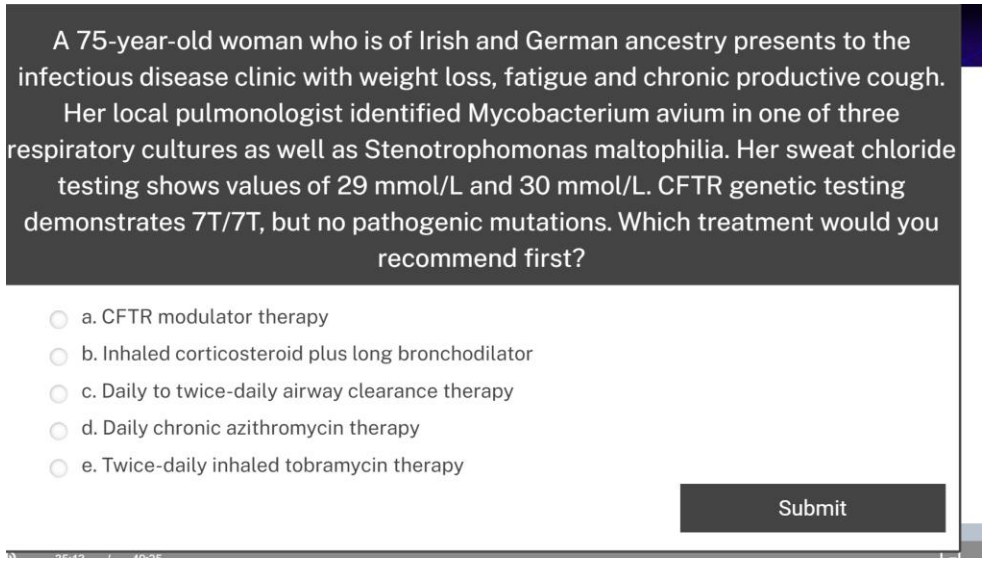
N=421

88%

evaluation respondents reported the activity improved knowledge of cystic fibrosis diagnosis and management

N=421

Interactive Polling and Faculty Discussion



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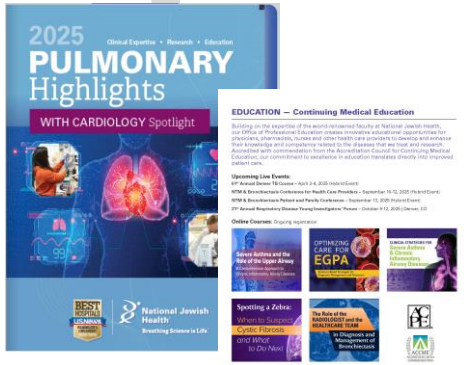
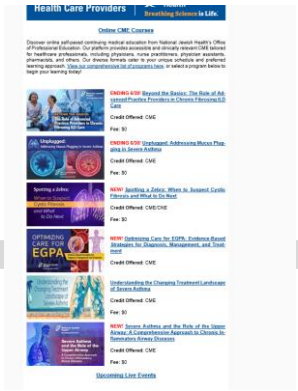
Audience Generation
Final Outcomes Summary

Personalized targeting tools across numerous tactics reach HCPs by leveraging demographic data (such as location, profession, specialty) and behavioral data (such as learner participation history, areas of interest).

Emails and e-newsletters sent to specialty lists & National Jewish Health database



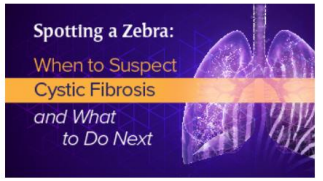
Featured in Pulmonary Highlights publication



Promotion at live conferences

Social media ads and posts

Dedicated landing page on NJH website



Spotting a Zebra: When to Suspect Cystic Fibrosis and What to Do Next
CME Expires 03/29/2025

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Online Enduring Program

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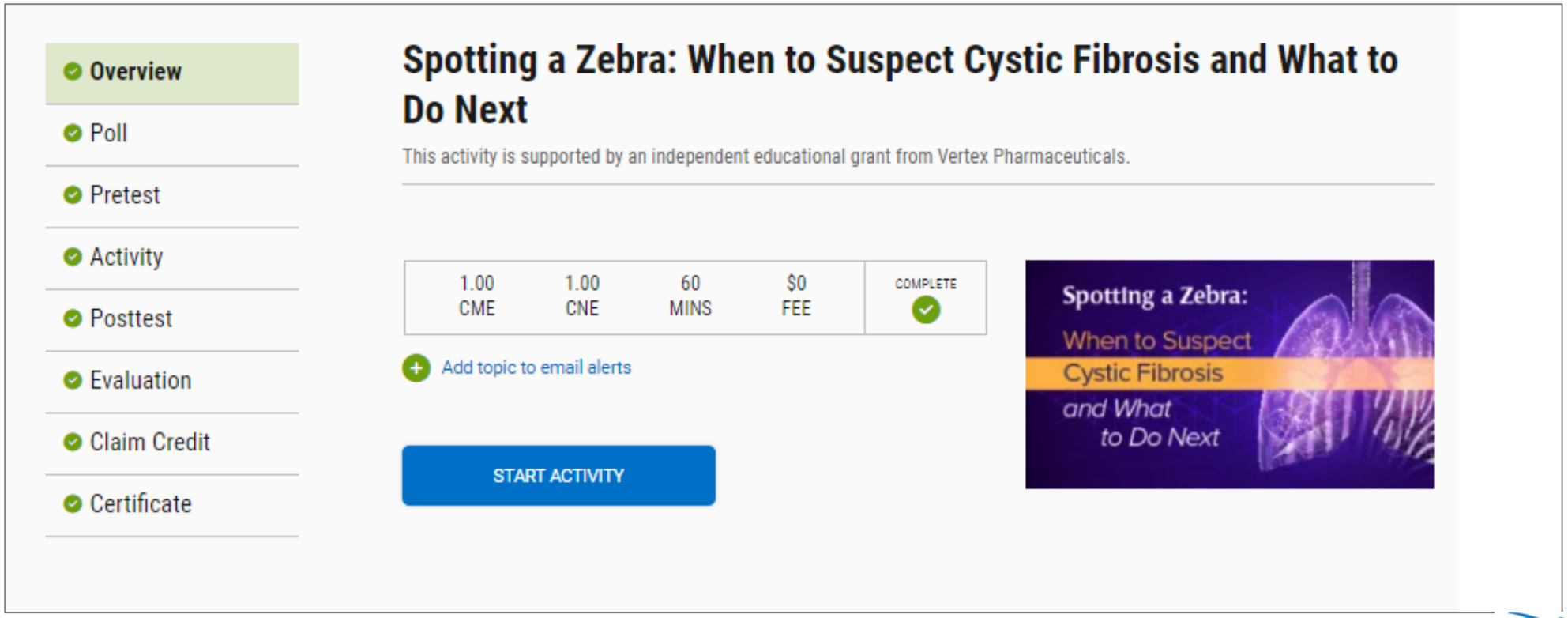
https://www.healio.com/cme/infectious-disease/20240325/spotting-a-zebra-when-to-suspect-cystic-fibrosis-and-what-to-do-next/overview -

Launched March 29, 2024



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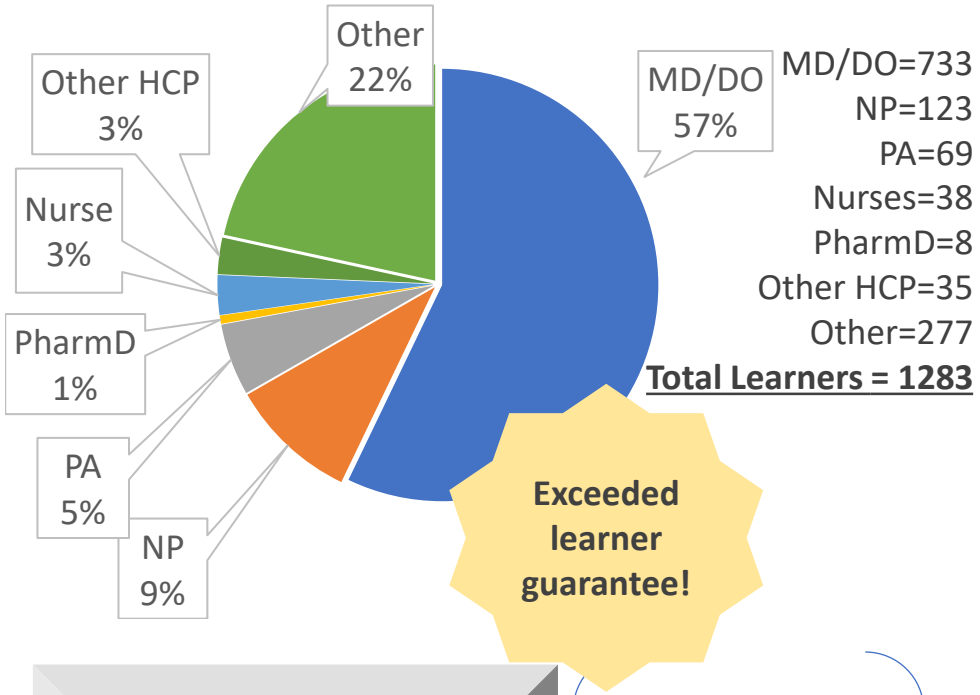
Educational Impact Summary

Final Outcomes Summary

Participation



MD/DO=733
NP=123
PA=69
Nurses=38
PharmD=8
Other HCP=35
Other=277

Total Learners = 1283

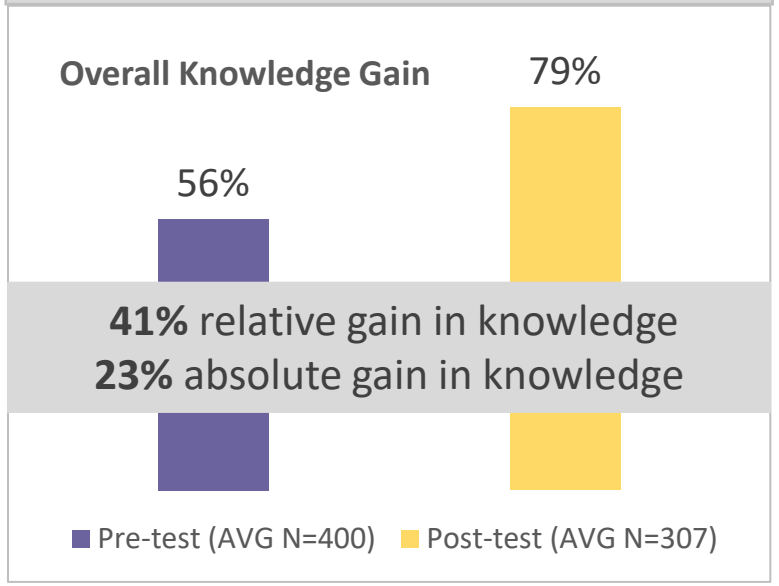
Exceeded learner guarantee!

Potential Impact To
63,768
Patient Visits This Year*

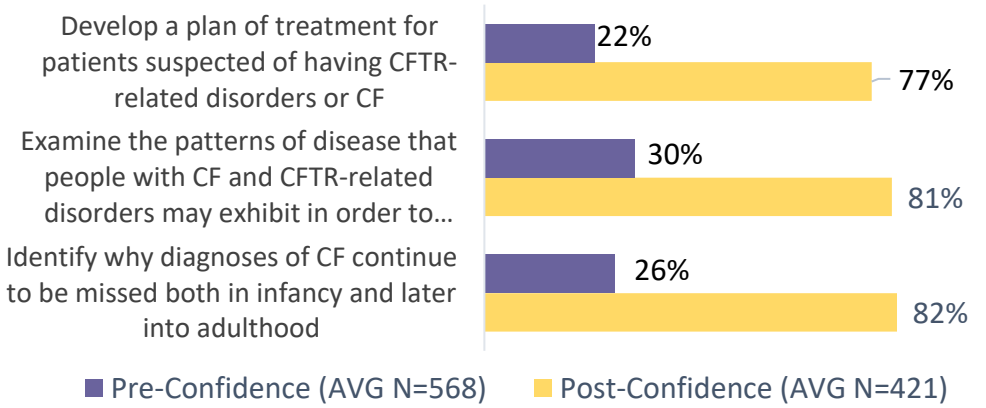
**Note: this represents potential patient visits impacted, not unique patients.*

"It spotlighted that healthcare disparities are common and can affect different populations in ways that may not be immediately clear.. "
- Online Learner

Learning Gain Across Objectives



Confidence Across Objectives



Evaluation

Met their educational needs **(88%)**

Reinforced or improved current skills **(86%)**

Improved ability to treat patients **(82%)**

N=422

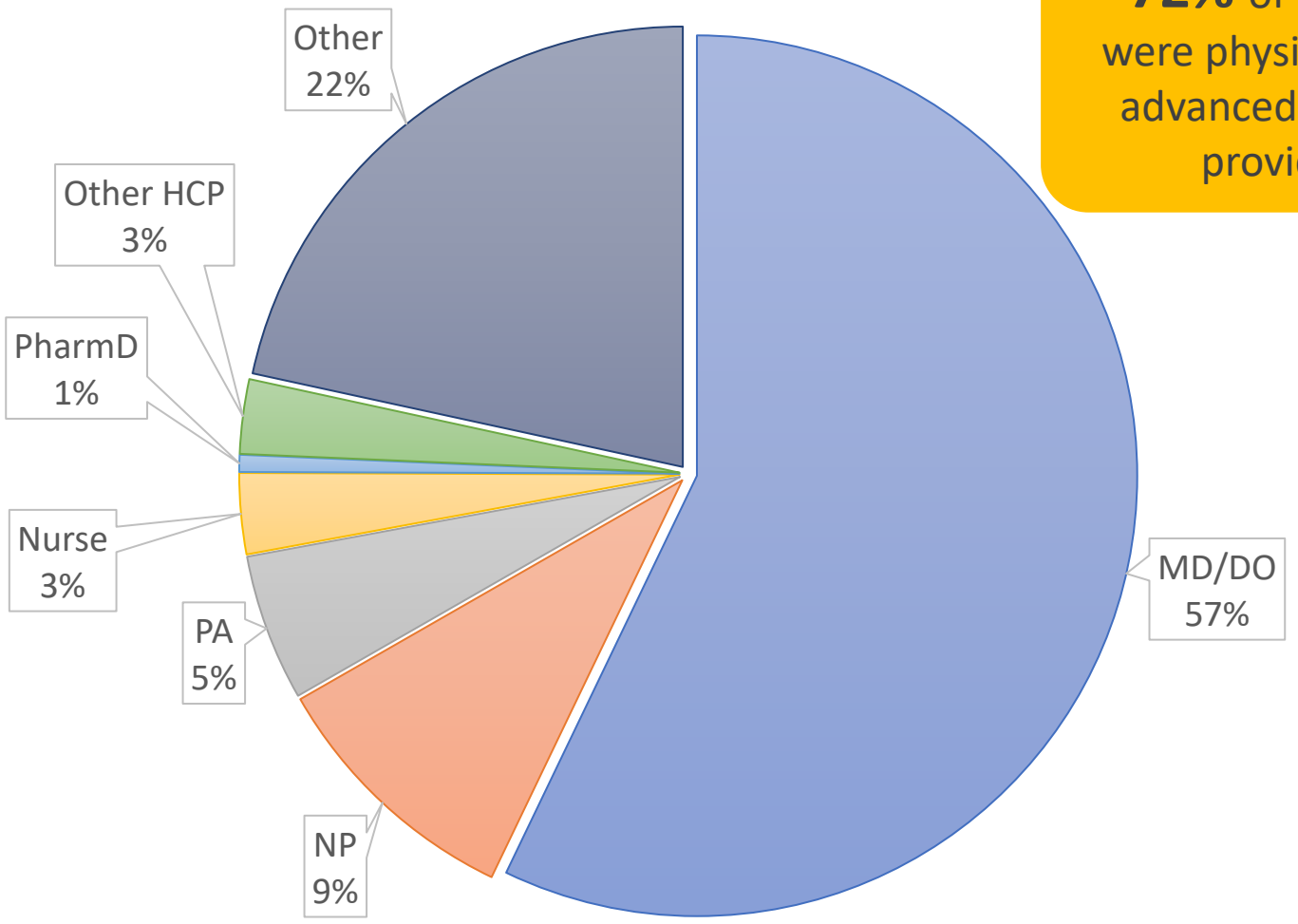
90%

Evaluation respondents intend to make changes to practice as a result of the activity

N=338

Level (1) Outcomes: Participation (Degree)

Final Outcomes Summary

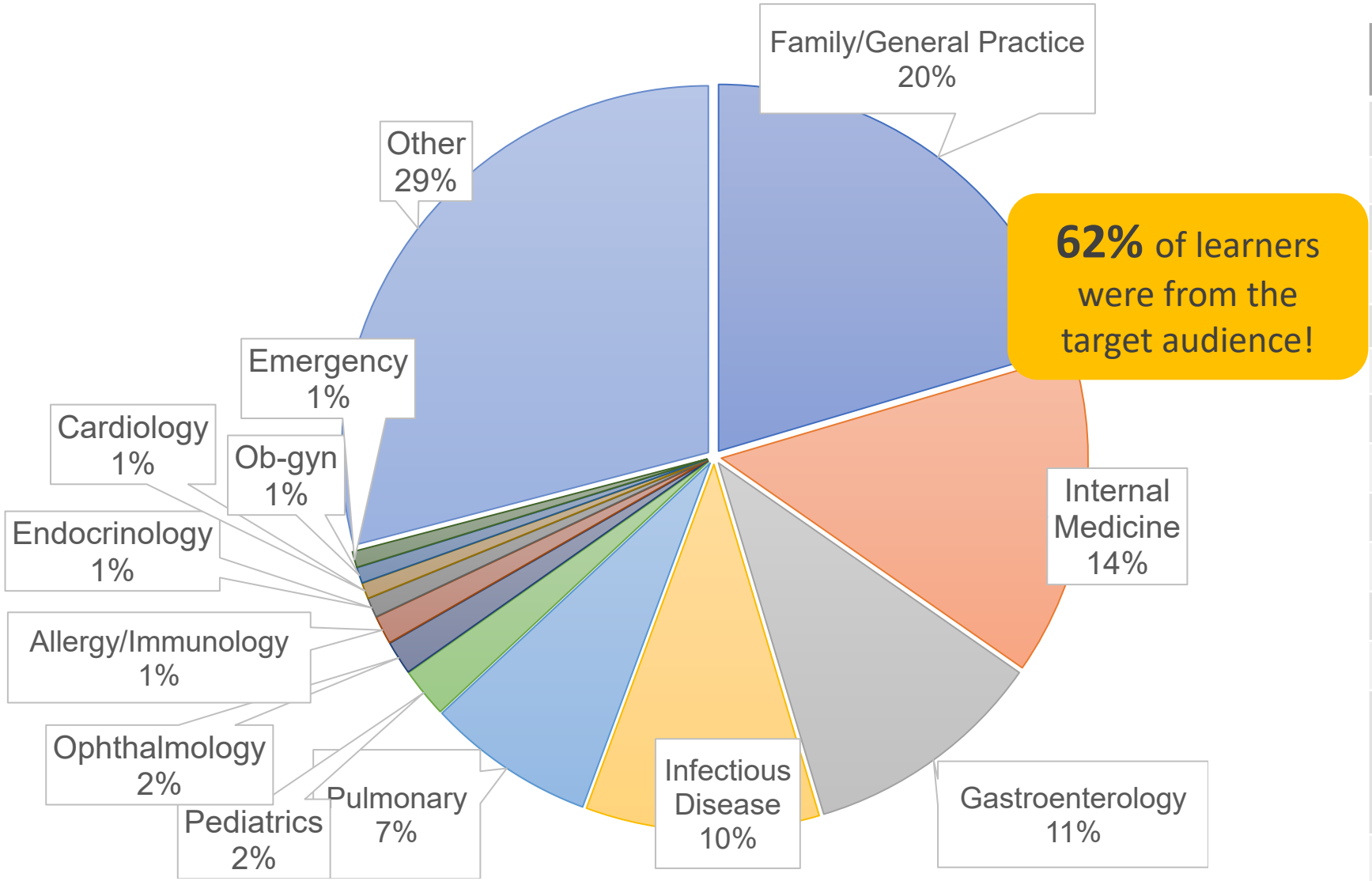


72% of learners were physicians and advanced practice providers

Degree	Total
MD/DO	733
NP	123
PA	69
Nurse	38
PharmD	8
Other Healthcare Professional	35
Other (Administrator, student, consumer, industry, not reported)	277
Total Learners	**1283**

Level (1) Outcomes: Participation (Specialty)

Final Outcomes Summary

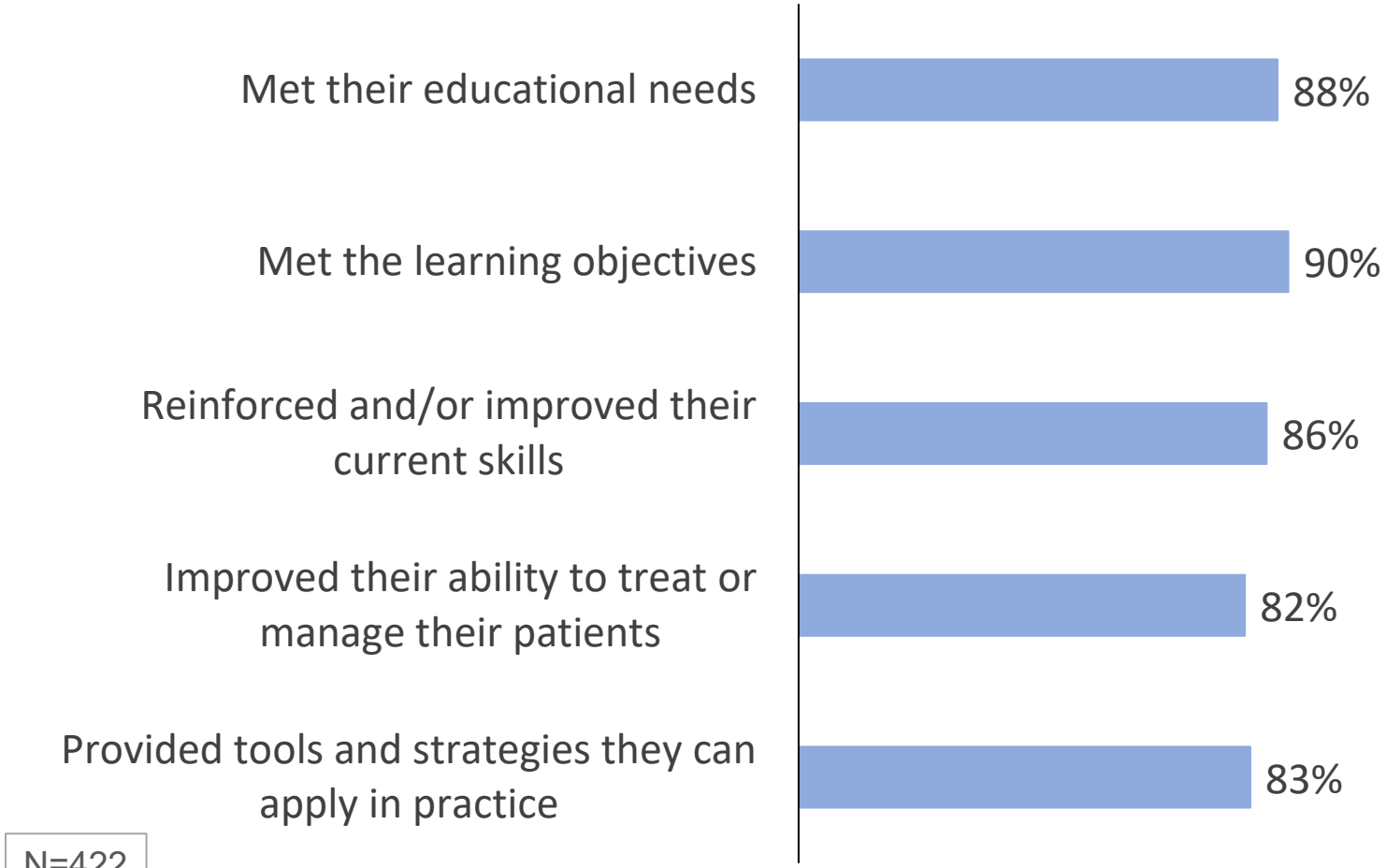


Specialty	Total
Family/General Practice	**262**
Internal Medicine	**183**
Infectious Disease	**132**
Gastroenterology	**137**
Pulmonary	**95**
Pediatrics	28
Ophthalmology	19
Allergy/Immunology	16
Endocrinology	11
Cardiology	9
Obstetrics &Gynecology	9
Emergency	9
Other (*Critical care, pain medicine, otolaryngology, psychiatry, not reported*)	373
Total Learners	**1283**

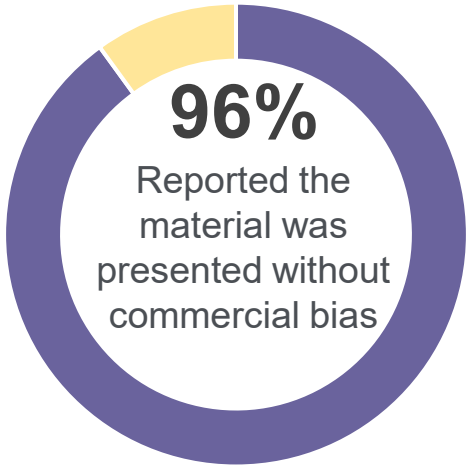
Level (2) Outcomes: Satisfaction

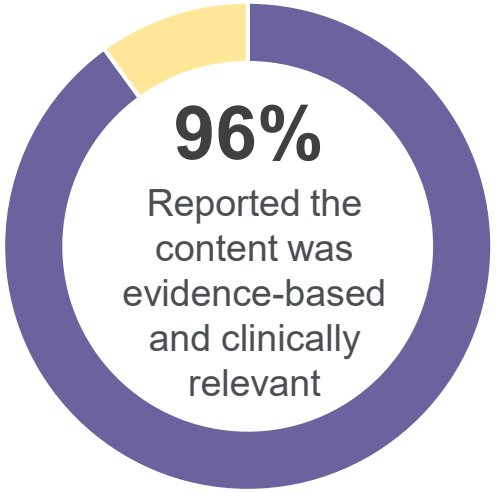
Final Outcomes Summary

Evaluation respondents reported they "Strongly Agree" or "Agree" the activity:



N=422





N=422

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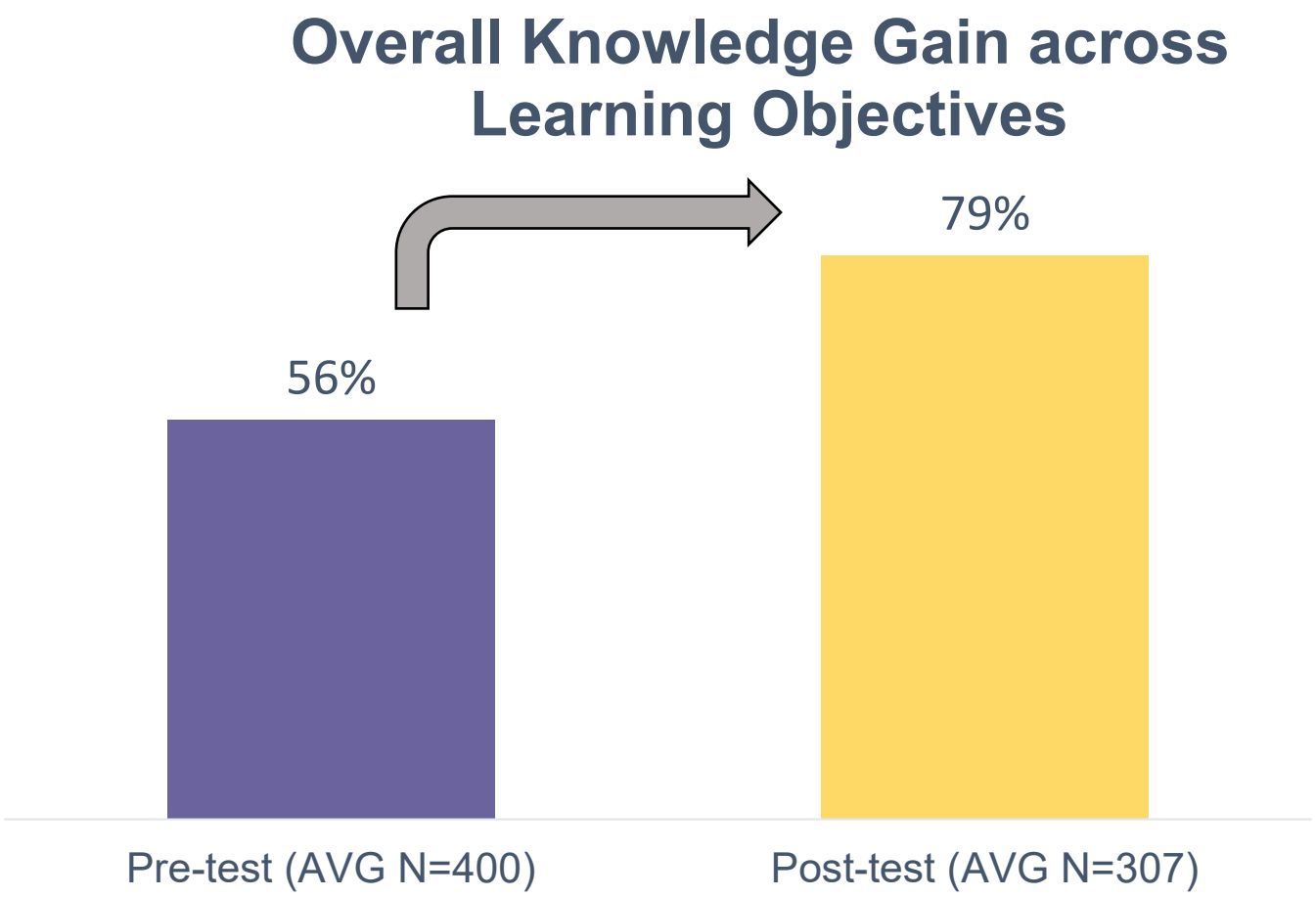
Level (3&4) Outcomes: Knowledge and Competence

Final Outcomes Summary



41% Overall Relative Knowledge Gain

23% Overall Absolute Knowledge Gain

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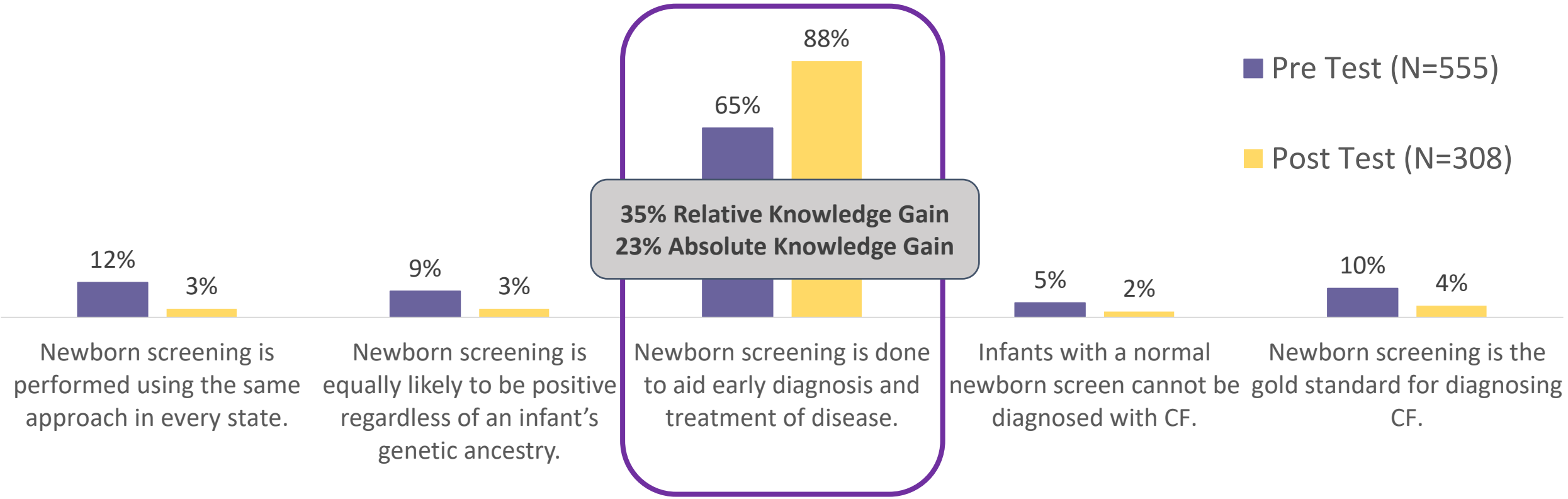
Level (3&4) Outcomes: Knowledge and Competence

Final Outcomes Summary

Learning Objective: *Identify why diagnoses of cystic fibrosis continue to be missed both in infancy and later into adolescence and adulthood.*

Question 1: An 11-month-old infant whose parents are of Southeast Asian descent presents to her general pediatrician with her third respiratory infection in 5 months. Although her newborn screen for CF was normal, she is ultimately diagnosed with CF based on sweat chloride levels of 71 and 73 mmol/L. Which of the following statements regarding newborn screening is accurate?

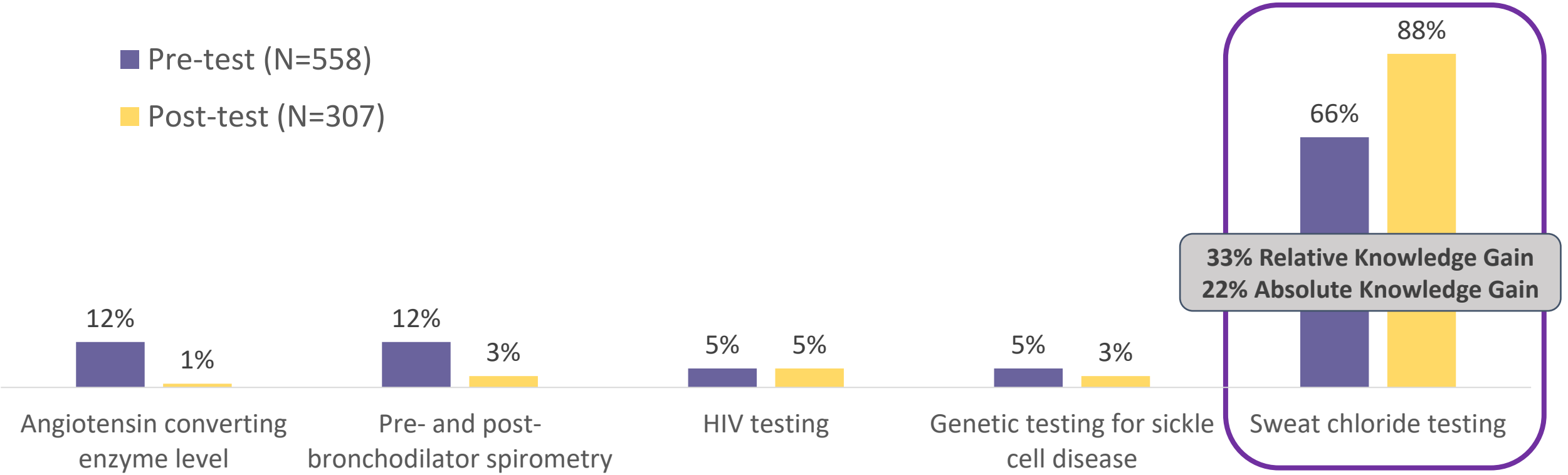


Level (3&4) Outcomes: Knowledge and Competence

Final Outcomes Summary

Learning Objective: *Examine the patterns of disease that people with CF and CFTR-related disorders may exhibit in order to refer patients for additional testing.*

Question 2: A 37-year-old male patient who identifies as African-American presents to pulmonary clinic with recurrent upper and lower respiratory tract infections associated with Pseudomonas aeruginosa infection. He has never had children in spite of the fact that he and his wife tried to conceive for several years. Which test would be most appropriate in his initial evaluation?:

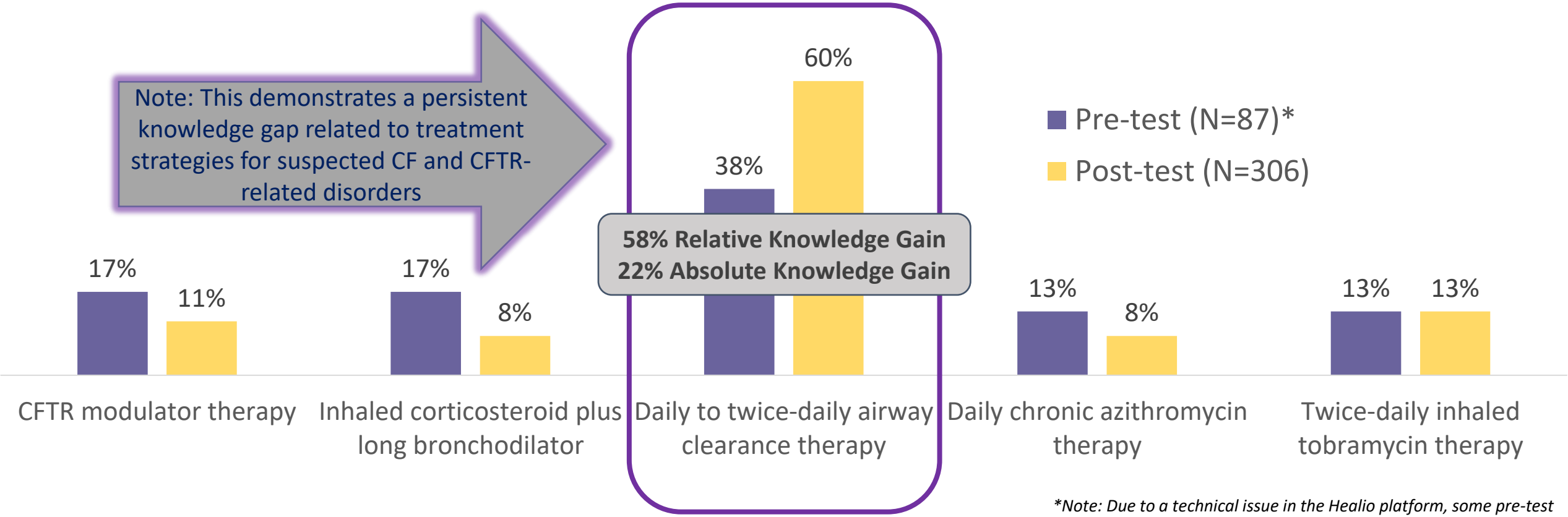


Level (3&4) Outcomes: Knowledge and Competence

Final Outcomes Summary

Learning Objective: *Develop a plan of treatment for patients suspected of having CFTR-related disorders or CF.*

Question 3: A 75-year-old woman who is of Irish and German ancestry presents to the infectious disease clinic with weight loss, fatigue and chronic productive cough. Her local pulmonologist identified Mycobacterium avium in one of three respiratory cultures as well as Stenotrophomonas maltophilia. Her sweat chloride testing shows values of 29 mmol/L and 30 mmol/L. CFTR genetic testing demonstrates 7T/7T, but no pathogenic mutations. Which treatment would you recommend first?

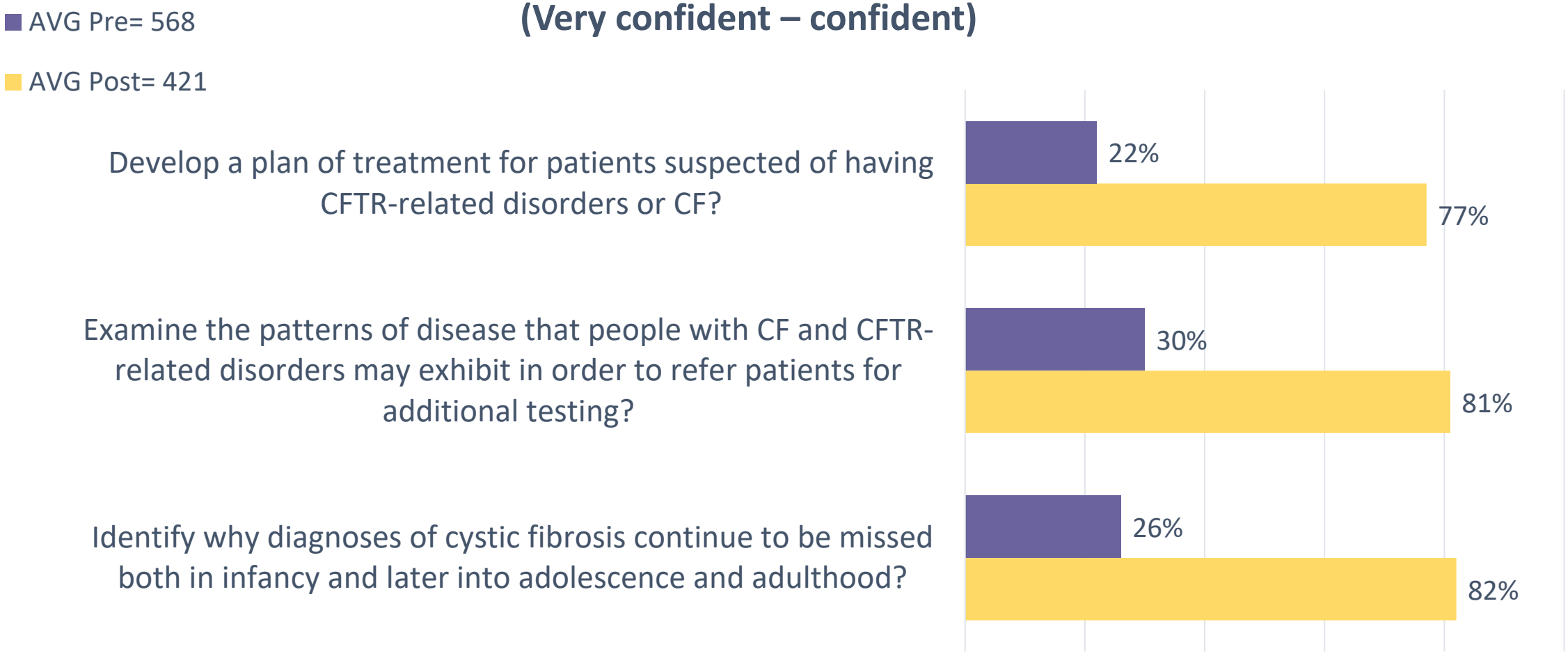


**Note: Due to a technical issue in the Healio platform, some pre-test data for this question was not captured.*

Level (4) Outcomes: Competence

Final Outcomes Summary

Evaluation respondents reported their confidence as it relates to the learning objectives before and after the activity (Very confident – confident)



Level (4) Outcomes: Competence

Final Outcomes Summary

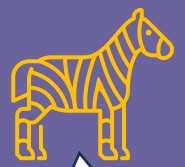
These changes reflect a focus on improving patient communication, eliminating biases, and enhancing diagnostic evaluation.

Disassociate race from Cystic Fibrosis for further testing

Listen to patients more carefully and be more empathetic

Testing patients of all ethnic backgrounds if they have disease manifestations, suggestive of cystic fibrosis. Making sure to ask patients about prior history of pneumonia, recurrent pneumonia, and types of bacteria, isolated

What changes will you incorporate in your practice?



CF is not a white disease. Think of CF even if patient is an adult but if he has recurrent upper and lower respiratory infections and digestive diseases (liver, pancreas, small bowels) then order tests to confirm diagnosis of CF, then refer to CF experts.

More sweat chloride testing in adults. Knowing the triggers to order genetic testing. Multifaceted treatment options and less reluctance to refer to a CF expert.

90%

N=338

Evaluation respondents intend to make changes in practice as a result of the activity

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Evaluation Survey Results

Final Outcomes Summary

Key Takeaways

Increased awareness about conditions such as Cystic Fibrosis

Patients may be missed in diagnosis, emphasizing the need for thorough screening.

Symptoms of CF should prompt further testing without relying on assumptions related to ethnicity

CF can affect individuals of all ethnic backgrounds, conditions do not always present as taught in textbooks.

There are limitations to diagnostic tests like the sweat chloride test

These points highlight the importance of awareness, proper diagnosis, and treatment strategies.

Recurring chest infections can be a sign of underlying conditions such as CF

Targeted therapeutic approaches are essential for better treatment outcomes

Greater knowledge is needed to improve care for these patients

Understanding the pathophysiology of CF is critical for effective management

"It has allowed me to better understand the best tests for the patient population at hand in order to increase optimal outcomes"

- Online Learner

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Evaluation Survey Results

Final Outcomes Summary

What topics related to Cystic Fibrosis would you like to learn more about in future activities?

- Use of biologics and their adverse effects
- Vaccinations
- New therapies
- CFTR related therapy issues
- Updates on current research of pharmacologic treatments
- Research on new modulators
- Nonpharmacologic treatment
- Overlap with NTM-LD and CF
- Treatment with the newer agents mentioned
- Pharmacotherapies that are useful to assist in mucous clearance
- Genetic markers used to diagnose CF patients

84%

evaluation respondents indicated the activity prepared them to address health disparities among their patients

N=422

95%

evaluation respondents indicated the activity addressed strategies for overcoming barriers to optimal patient care

N=419

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Accreditation Information

Final Outcomes Summary

National Jewish Health is accredited with Commendation by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. The NJH Office of Professional Education produced and accredited this program and adhered to the updated ACCME guidelines.

National Jewish Health designates this enduring material for a maximum of 1.0 *AMA PRA Category 1 Credit*™.

Provider approved by the California Board of Registered Nursing, Provider Number 12724, for 1.0 contact hour.

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