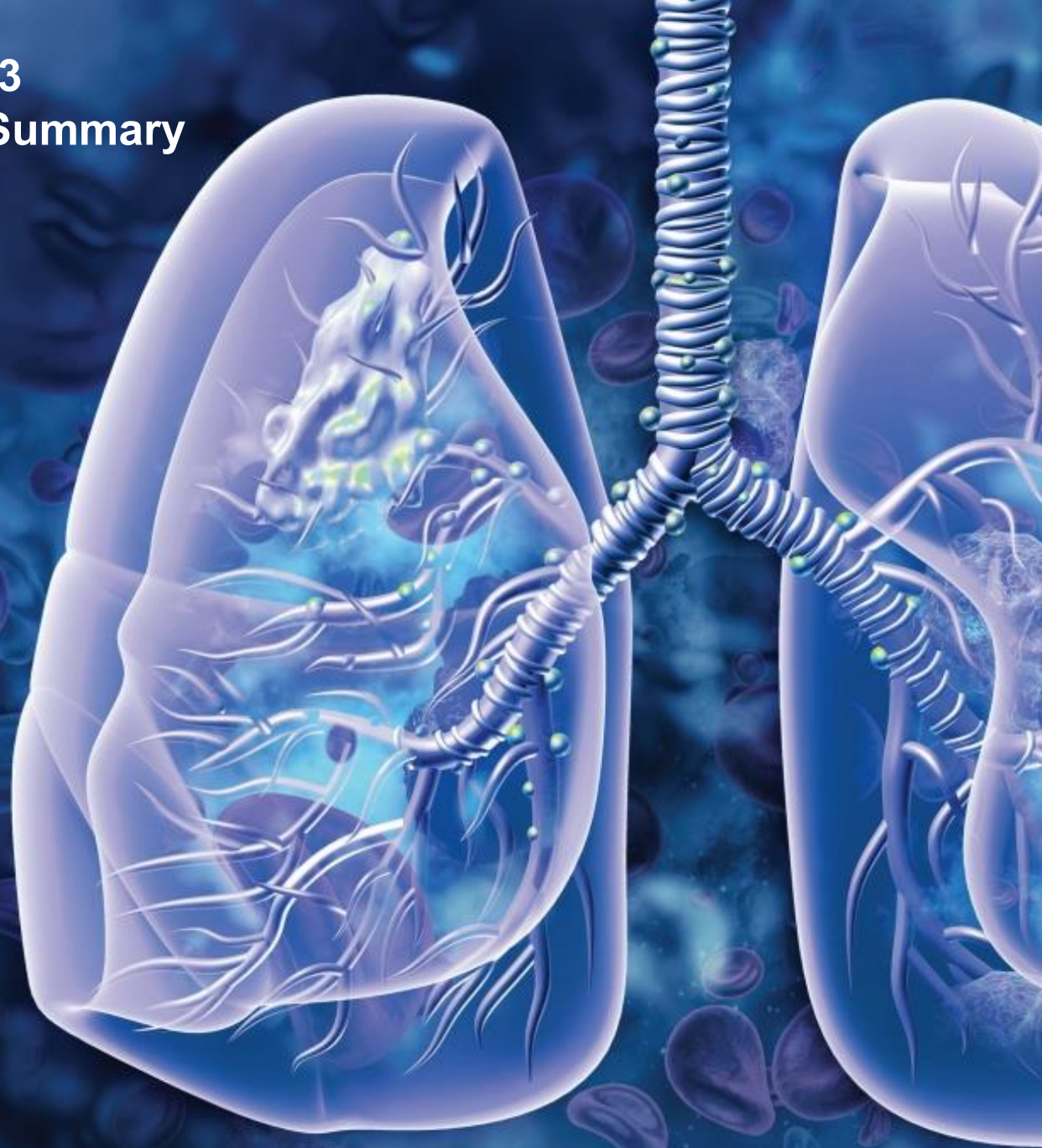


# NTM & Bronchiectasis Conference for Healthcare Providers

SEPTEMBER 10-12, 2025



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# Executive Summary: Activity Details

## Final Live Outcomes Summary

### Learning Objectives: Provider Course

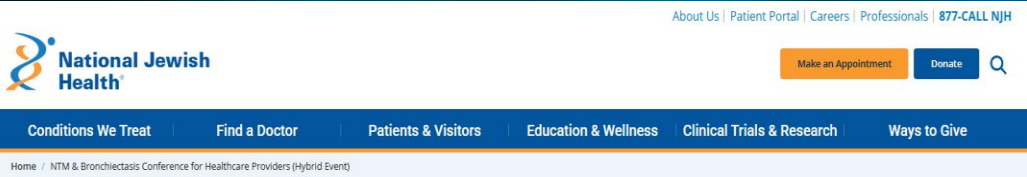
1. Recognize the incidence and distribution for both NTM disease and bronchiectasis
2. Identify the clinical features and unique manifestations of NTM disease
3. Identify clinical features and underlying risk factors for development of bronchiectasis
4. Differentiate between the various types of NTM infections
5. Summarize the spectrum of bronchiectasis presentations and clinical evaluation
6. Describe current guidelines for the diagnosis and management of NTM disease and bronchiectasis
7. Apply the latest evidence to inform pharmacologic and non-pharmacologic management strategies for NTM disease and bronchiectasis

The **2025 Annual NTM Lecture Series for Providers and Patients** was held both in-person and virtually September 10-13, 2025. The first three days of the conference was focused on education for providers, and the final day educated patients and their families. Faculty included key opinion leaders from National Jewish Health and institutions across the U.S. who delivered lectures with an opportunity for question and answer after each presentation. Both components of the conference were recorded and endured online for registrants.

**Target Audience:** Pulmonologists, infectious disease physicians, family and internal medicine physicians, physician assistants, advanced practice nurses, registered nurses, and other health care professionals who diagnose and treat patients with NTM and bronchiectasis

# Marketing Strategies

## Final Live Outcomes Summary



### NTM & Bronchiectasis Conference for Healthcare Providers (Hybrid Event)



### NTM & Bronchiectasis: Patient & Family Conference (Hybrid Event)

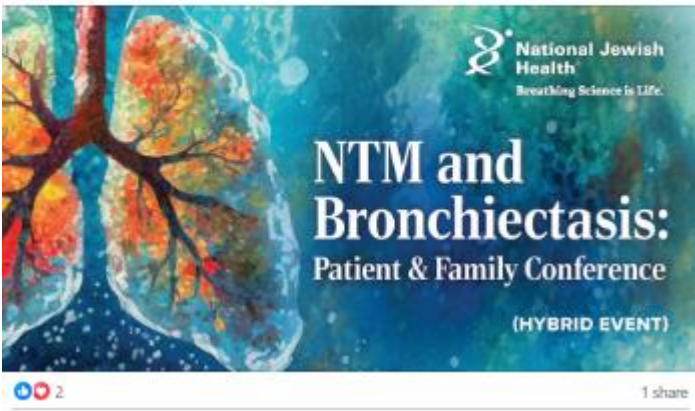
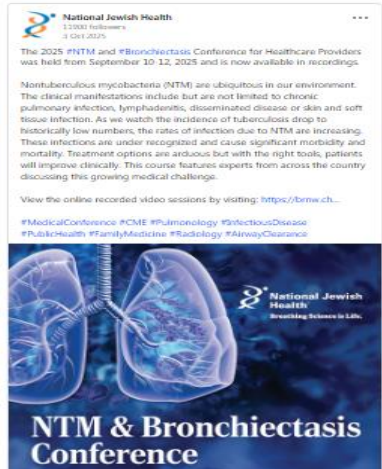


If you are registered for the event please find the zoom link below

Zoom Link: <https://njuh.zoom.us/j/93558641315>  
This conference has been designed for those currently diagnosed with Nontuberculous Mycobacterial (NTM) infections and/or bronchiectasis (including their families) and those interested in hearing more about topics relating to medical and quality of life issues. The 2025 meeting will be offered as a hybrid, with the option to attend in-person or online. All attendees will receive access to the online video content and slides after the conference.

#### Patient Conference Objectives

1. Summarize the incidence, prevalence and clinical manifestations of NTM and bronchiectasis



Targeted emails to NJH database and purchased specialty lists



As the clinical burden of NTM and bronchiectasis becomes increasingly recognized, there is an urgent need to better understand the underlying mechanisms of inflammation, alongside efforts to improve early diagnosis and explore both current and emerging treatment options.

### NTM & Bronchiectasis Conference for Healthcare Providers

September 10-12, 2025

Up to 18.25 CME  
Offered in-person and Zoom  
CME videos and slides on demand after the conference

National Jewish Health | Molly Blank Conference Center | Denver, Colorado

Provider Registration: [NJHealth.org/NTMBronchiectasisProvider2025](https://NJHealth.org/NTMBronchiectasisProvider2025)

VIEW AGENDA

REGISTER NOW



# Thank you to all the faculty who make this program possible!

## Final Live Outcomes Summary

### **Michelle Haas, MD (Program Co-Chair)**

Associate Professor  
Division of Mycobacterial & Respiratory Infections  
Department of Medicine  
National Jewish Health

### **David E. Griffith, MD**

Professor of Medicine  
Division of Mycobacterial & Respiratory Infections  
National Jewish Health

### **Jared J. Eddy, MD**

Assistant Professor of Medicine  
Director of Infection Prevention & Antimicrobial  
Stewardship  
Division of Mycobacterial & Respiratory Infections  
National Jewish Health

### **Charles Daley, MD (Program Co-Director)**

Chief, Division of Mycobacterial and  
Respiratory Infections  
Professor of Medicine  
National Jewish Health

### **John Torrence**

Bronchiectasis and NTM Ambassador  
COPD Foundation

### **Jennifer Honda, PhD, ATSF**

Associate Professor  
Director, NTM Center at Tyler  
University of Texas Health Science Center  
at Tyler

*"This was a great conference, I am eager to go back and share my experience and hopefully convince some more of my colleagues and our Fellows to attend."*

*- Live in-person provider conference attendee*



# Thank you to all the faculty who make this program possible!

## Final Live Outcomes Summary

### **Emily Henkle, PhD, MPH**

Associate Professor of Medicine  
Program Coordinator for PhD Epidemiology  
Oregon Health & Science University

### **Edward D. Chan, MD**

Staff Physician  
National Jewish Health  
Pulmonologist, Rocky Mountain Regional VA  
Medical Center

### **Reeti Khare, PhD**

Director, Infectious Disease Laboratory  
Associate Professor  
Advanced Diagnostic Laboratories  
National Jewish Health

### **Nir Goldstein, MD, FCCP**

Professor of Medicine Division of Pulmonary, Critical  
Care and Sleep Medicine  
National Jewish Health

### **Cheryl Torres, RRT**

Respiratory Therapist  
National Jewish Health

### **Steven E. Lommatzsch, MD**

Associate Professor of Medicine  
Adult Site Co-Director, PCD Foundation  
Division of Pulmonary, Critical Care & Sleep Medicine  
Department of Medicine  
National Jewish Health

*"It was a wonderful  
conference. I learned  
so much and there  
was so much new info  
for me that will change  
my practice."*

*- Live in-person  
provider conference  
attendee*

# Thank you to all the faculty who make this program possible!

## Final Live Outcomes Summary

### **Tilman Koelsch, MD**

Associate Professor of Radiology  
New York University

### **Sherstin T. Lommatzsch, MD**

Associate Professor  
Department of Medicine  
Division of Pulmonary, Critical Care, & Sleep Medicine  
Section of Critical Care Medicine  
National Jewish Health

### **Shannon Kasperbauer, MD**

Professor of Medicine  
Division of Mycobacterial and Respiratory Infections  
National Jewish Health

### **Stacy Martiniano, MD**

Associate Professor of Pediatrics  
Children's Hospital of Colorado  
University of Colorado Hospital

### **Michelle MacDonald, MS, RD, CNE**

Clinical Dietitian Supervisor  
Certified Diabetes Educator  
Clinical Nutrition Services  
Department of Medicine  
Section of Nephrology & Diabetology  
National Jewish Health

### **Amy Leitman, JD**

President  
NTM Info & Research

### **John D. Mitchell, MD**

Chief of General Thoracic Surgery  
Division of Cardiothoracic Surgery  
National Jewish Health  
University of Colorado Hospital

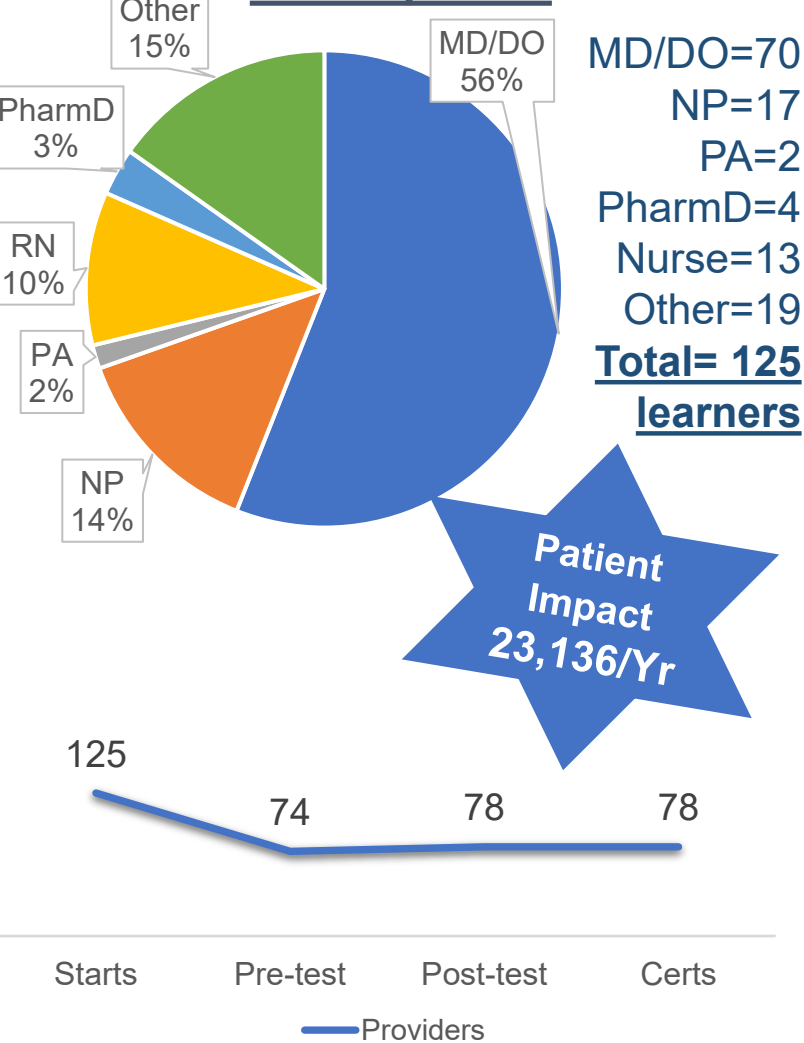
*"Thank you for hosting this conference. It was extremely relative to my practice. The information was invaluable and it was presented by articulate experts in this field. The workshops were a fantastic way to learn the material. I am inspired to improve my practice. Thank you to all who worked so hard on this event."*

*- Live in-person provider conference attendee*

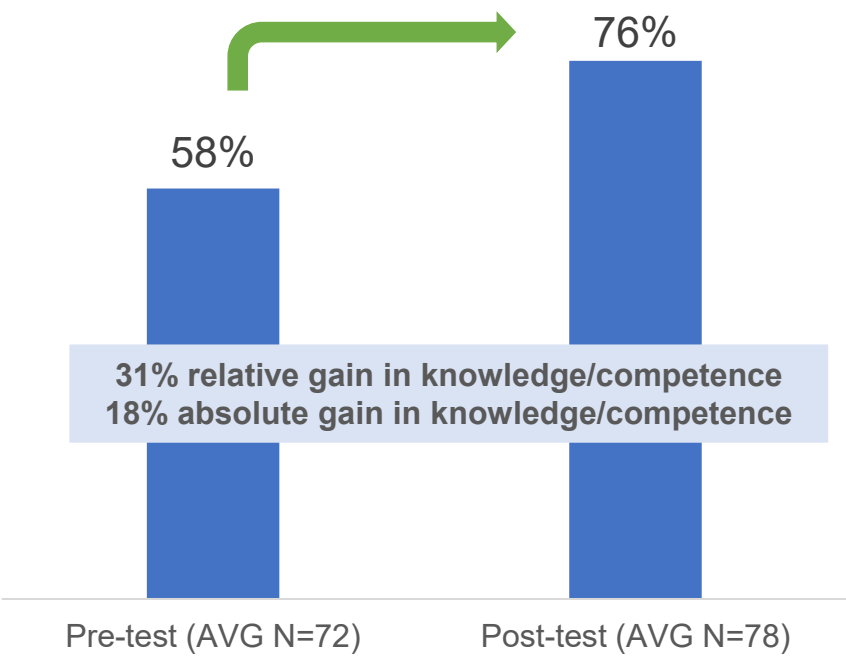
# Quantitative Educational Impact Summary

## Final Live Outcomes Summary

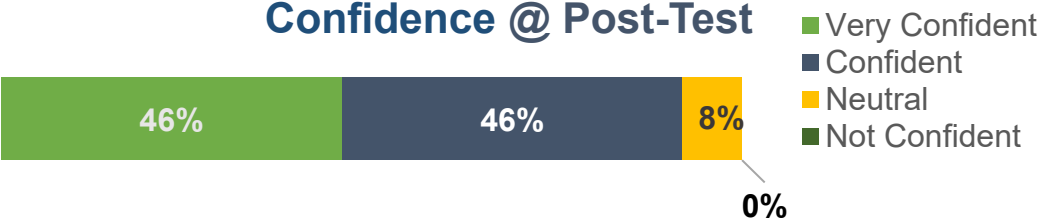
### Participation



### Overall Knowledge/Competence Gain

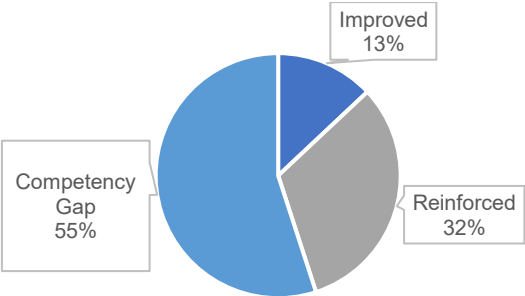


### Confidence @ Post-Test

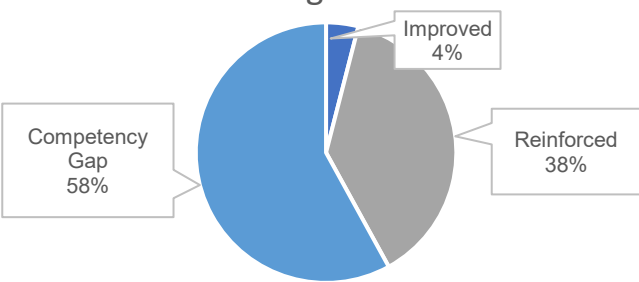


### Persistent Learning Gaps/Needs

55% of learners remained unable to recognize the incidence and distribution of NTM and bronchiectasis



58% of learners remained unable to correctly apply guidelines for NTM and bronchiectasis diagnosis and treatment





# Qualitative Educational Impact Summary

## Final Live Outcomes Summary

### Patient Impact

**79**

Evaluation  
respondents

Who see

**482**

NTM Patients Weekly

Which translates to

**23,136**

Patient Visits Annually

### Educational Impact

#### Knowledge/Competence Change by Learning Objective [AVG N=78]

- ✓ Recognition of the incidence and distribution for both NTM disease and bronchiectasis increased by **132%**
- ✓ Ability to identify the clinical features and unique manifestations of NTM disease increased by **42%**
- ✓ Ability to identify clinical features and underlying risk factors for development of bronchiectasis increased by **183%**
- ✓ Differentiate between the various types of NTM infections increased by **61%**
- ✓ Summarize the spectrum of bronchiectasis presentations and clinical evaluation increased by **9%**
- ✓ Describing the guidelines for the diagnosis and treatment of NTM disease and bronchiectasis creased by **13%**
- ✓ Application of latest evidence to make decisions about pharmacologic and non-pharmacologic management of NTM disease and bronchiectasis increased by **88%**

### Practice Change

**100%**

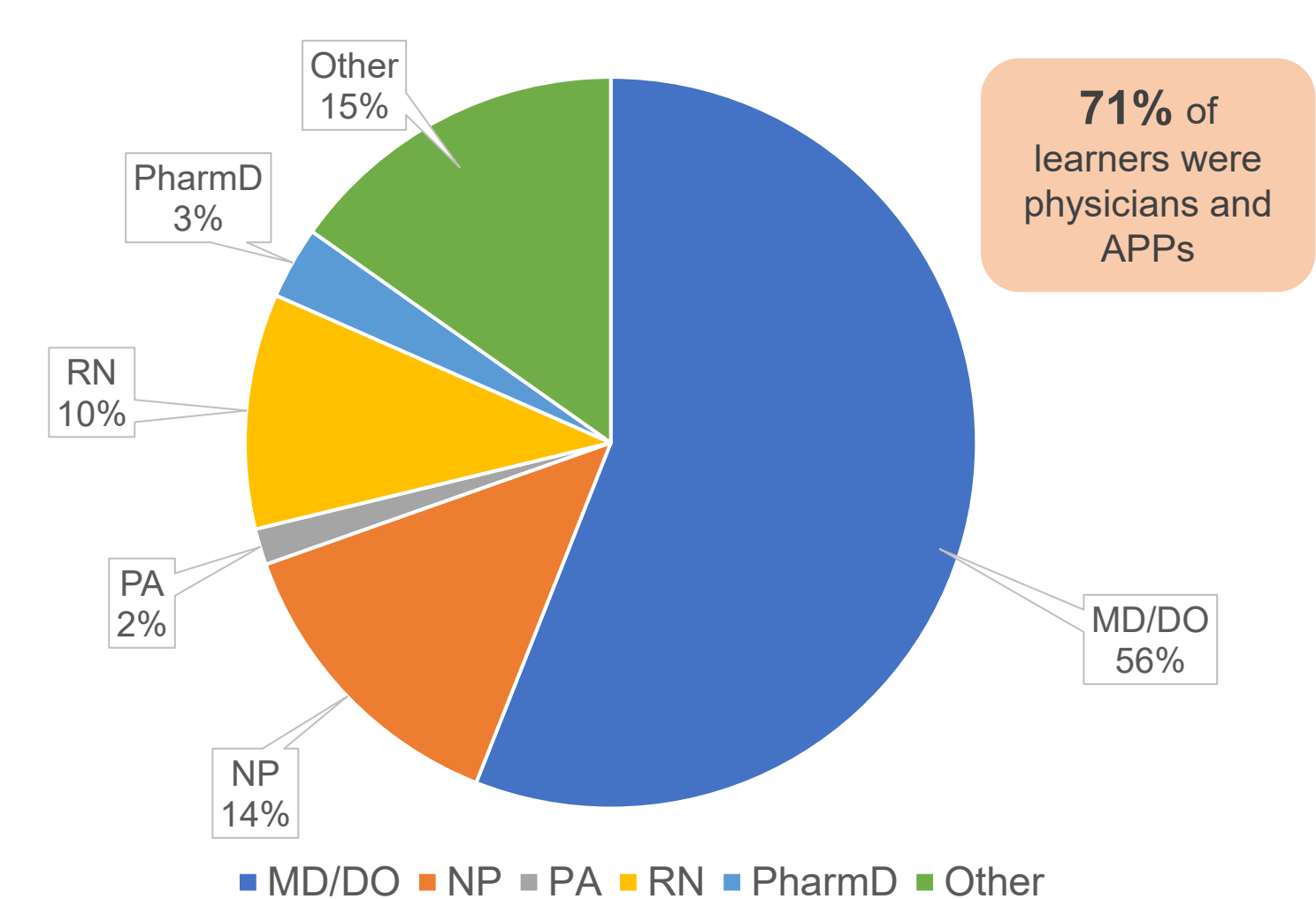
Reported they intend  
to change their  
practice [N=75]

**22**

patients have already  
benefited from  
improved practice  
*(estimate based on self-  
reported information from  
providers 45 days post-activity)*

# Level 1 Outcomes: Participation by Degree

Final Live Outcomes Summary

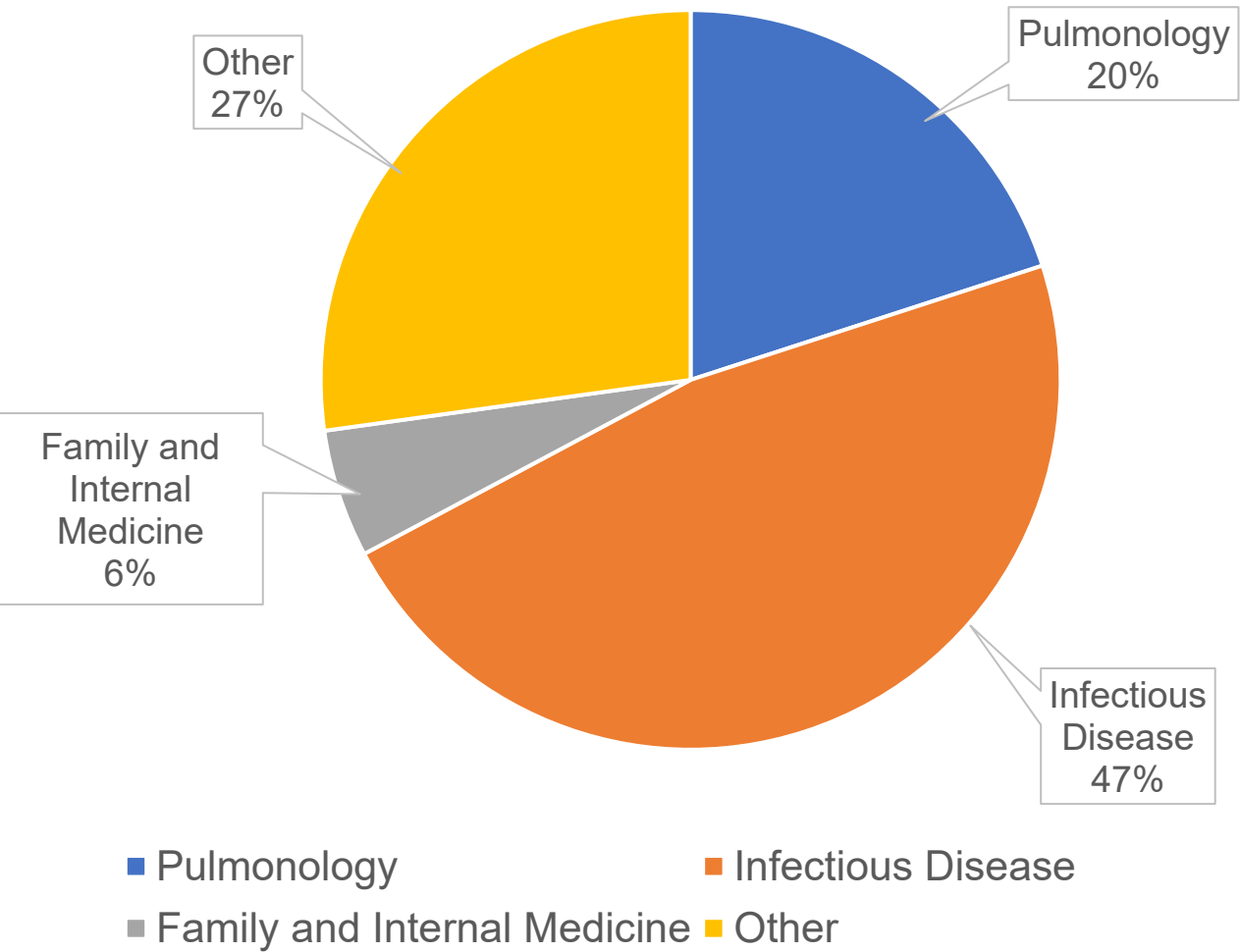


| Degree | Live and Virtual |
|--------|------------------|
| MD/DO  | 70               |
| NP     | 17               |
| PA     | 2                |
| RN     | 13               |
| PharmD | 4                |
| Other  | 19               |
| TOTAL  | 125              |

# Level 1 Outcomes: Participation by Specialty

Final Live Outcomes Summary

73% of learners were from the target audience!



| Specialty                                                      | Live and Virtual |
|----------------------------------------------------------------|------------------|
| Infectious Disease                                             | 59               |
| Pulmonology                                                    | 25               |
| Family and Internal Medicine                                   | 7                |
| Other<br>(Cardiology, critical care, pediatrics, not reported) | 34               |
| TOTAL                                                          | 125              |

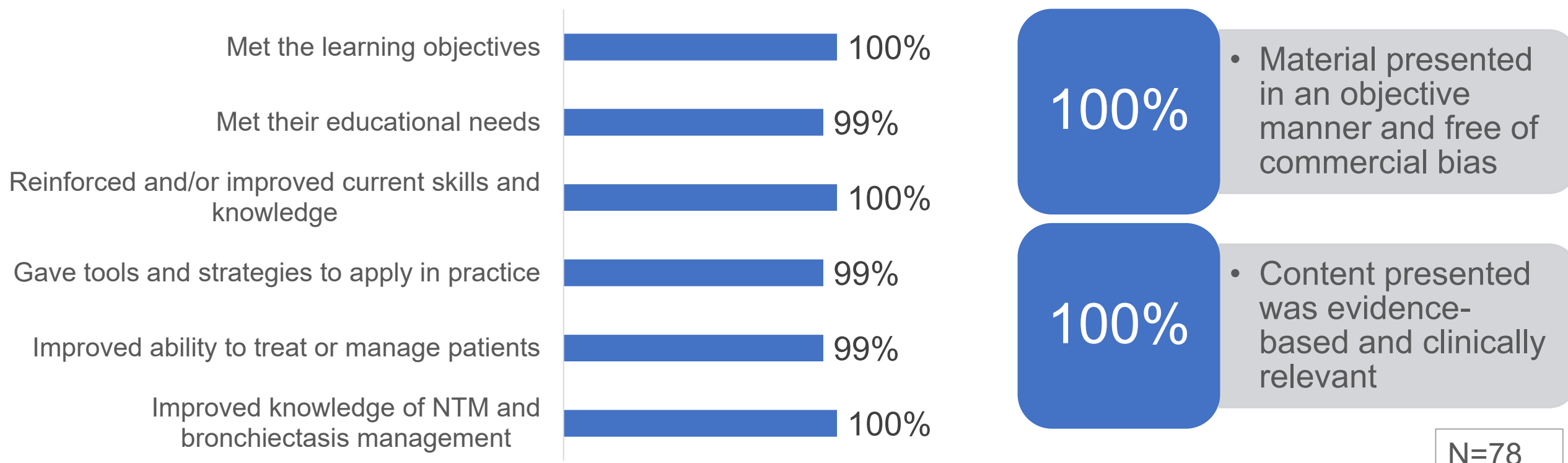


# Level 2 Outcomes: Satisfaction

Final Live Outcomes Summary

*Analysis of evaluation responses related to educational needs*

Participants reported they “strongly agree/agree” that the activity:



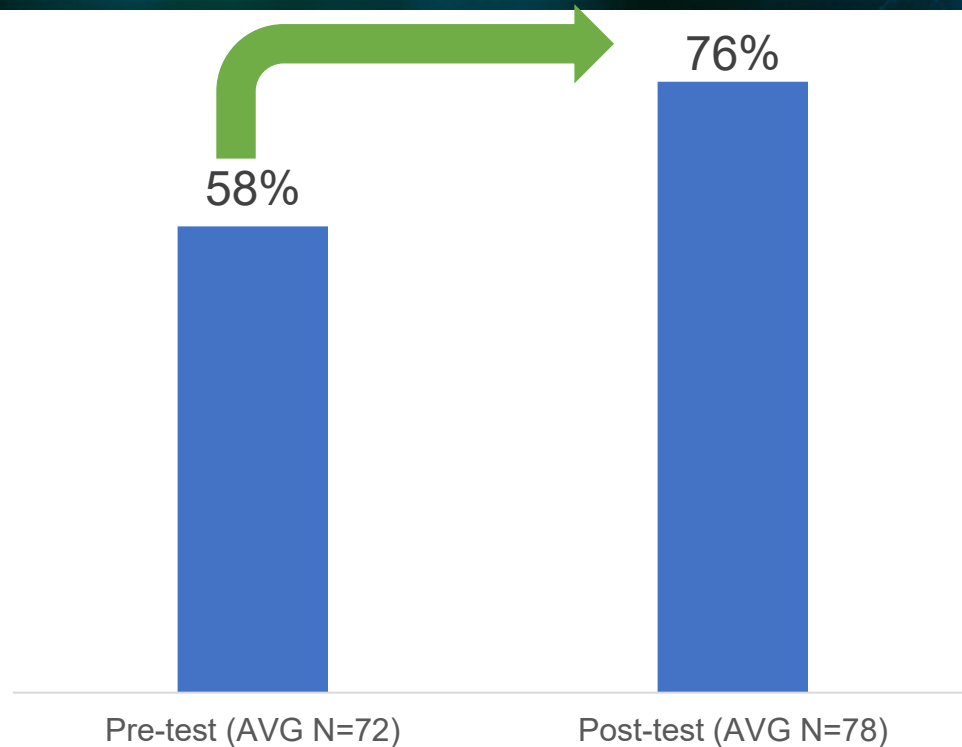
N=78

N= 79

Evaluation respondents reported high levels of satisfaction related to the ability of the activity to impact practice

# Level 3/4 Outcomes: Knowledge/Competence

## Final Live Outcomes Summary



Level 3/4 outcomes were measured by comparing participants' pre- and post-test answers. The attendees' responses to these questions demonstrated that **participants gained knowledge and competence as a result of the activity.**

Overall relative  
knowledge/competence  
gain by question from  
pre- to post-  
activity



31%

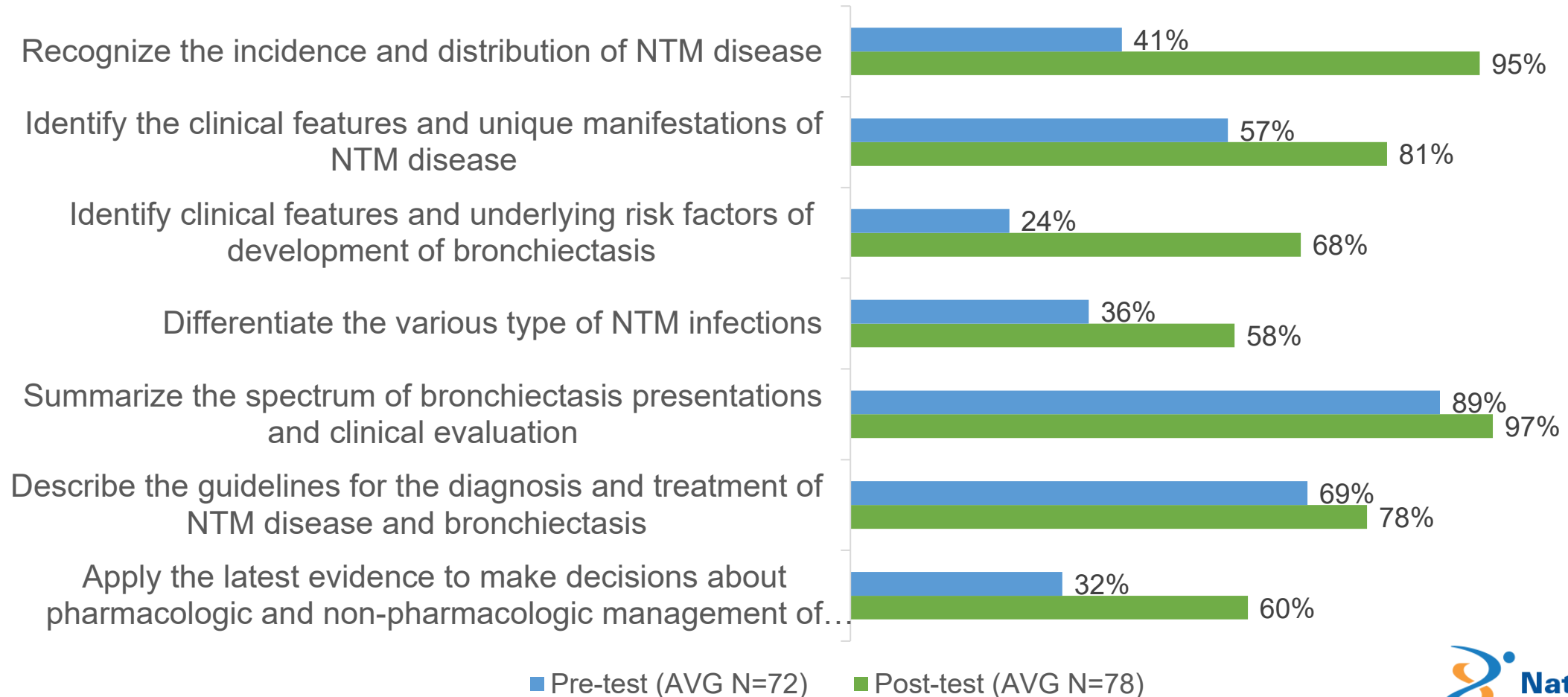
Overall absolute  
knowledge/competence  
gain by question from pre-  
to post-activity

18%

# Level 3 & 4 Outcomes: Knowledge/Competence Gains by Objective

## Final Live Outcomes Summary

### Learning Objective Knowledge Gain



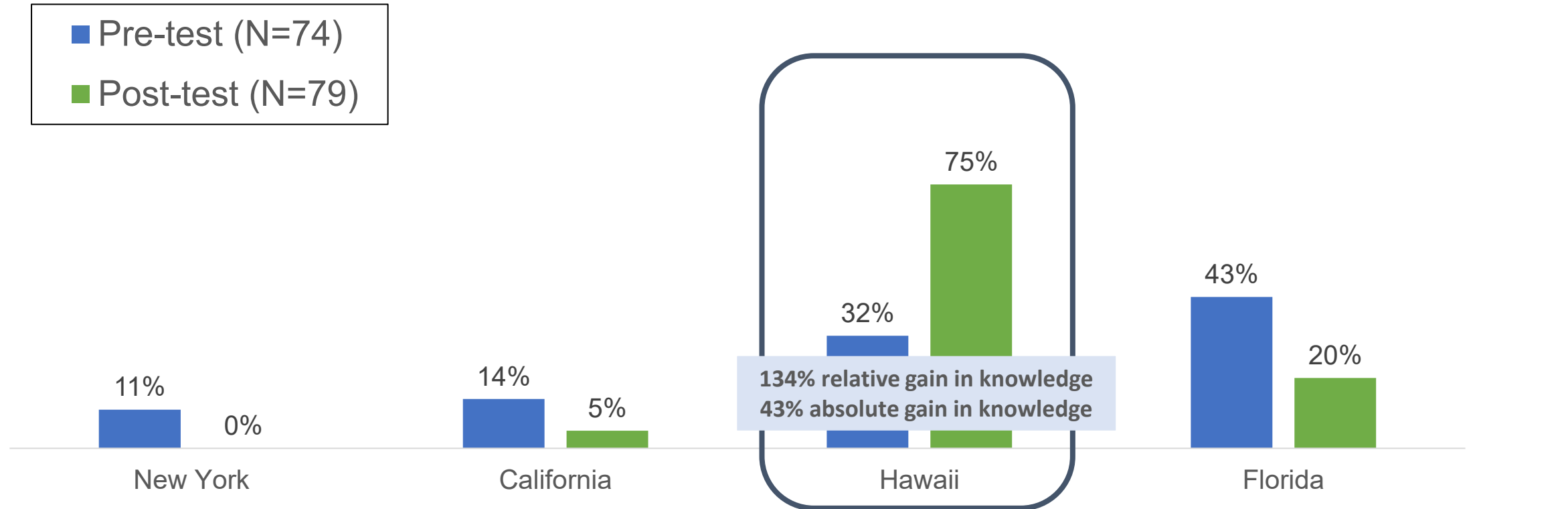


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objective:** *Recognize the incidence and distribution of NTM disease and bronchiectasis.*

**Q1:** Which state in the US has the highest rate of NTM infection?

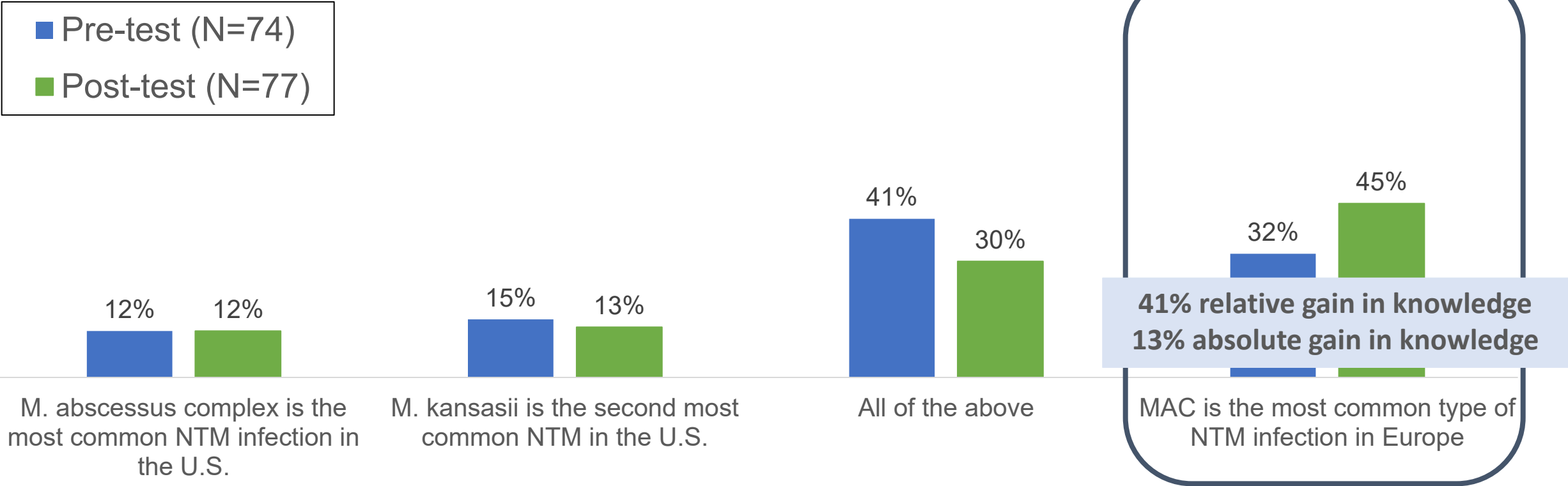


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objective:** *Recognize the incidence and distribution of NTM disease and bronchiectasis.*

**Q2:** Within the cystic fibrosis population, which of the following is true:

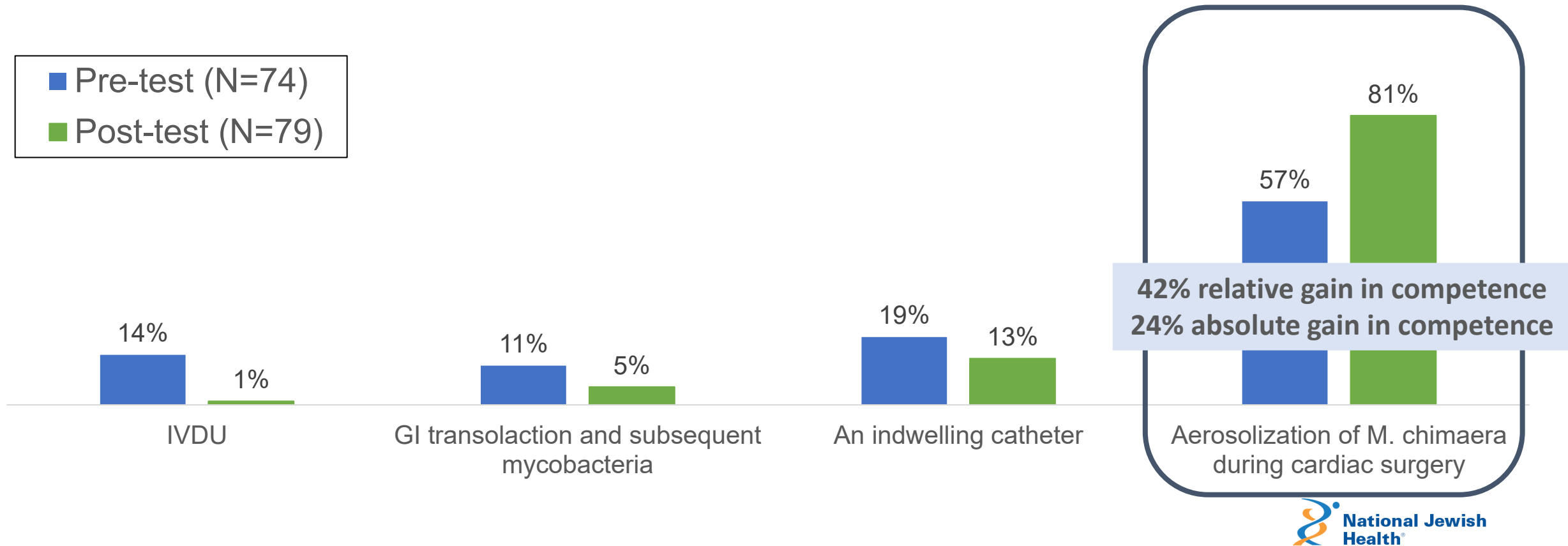


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objective:** *Identify the clinical features and unique manifestations of NTM disease.*

**Q3:** A patient with *M. chimaera* endocarditis most likely acquired infection from:

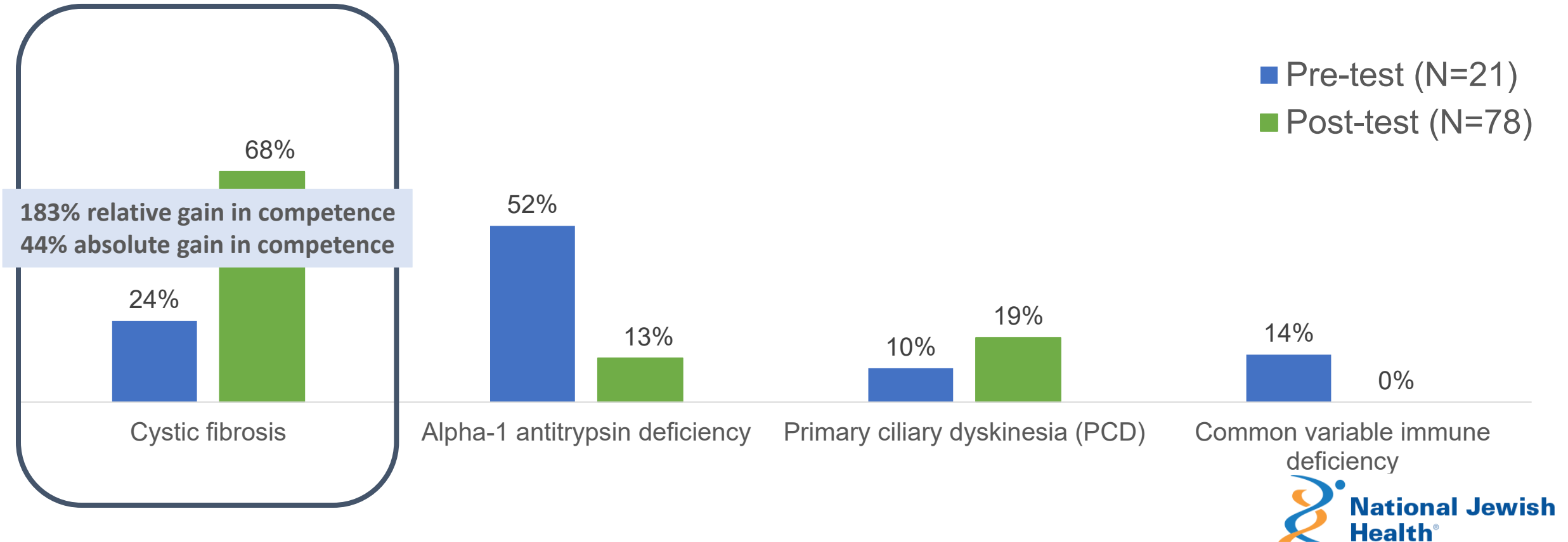


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objectives:** *Identify clinical features and underlying risk factors for development of bronchiectasis*

**Q4:** Which of the following typically leads to an upper lobe predominant bronchiectasis disorder?



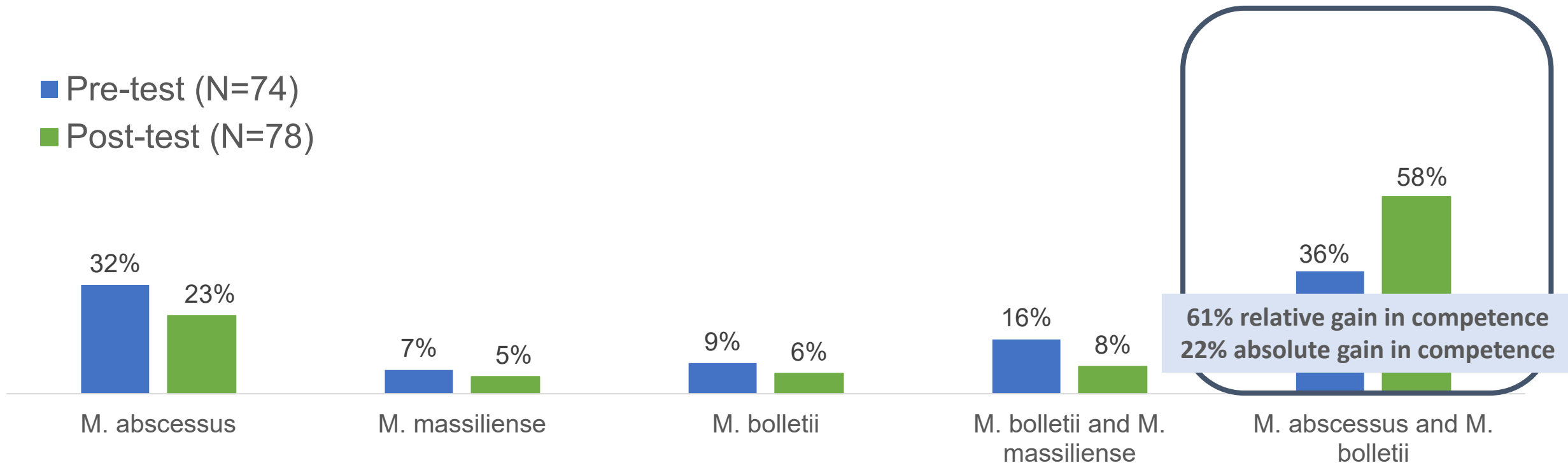


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objective:** *Differentiate between the various types of NTM infections*

**Q5:** In which subspecies of the *M. abscessus* complex is the *erm41* gene usually functional?

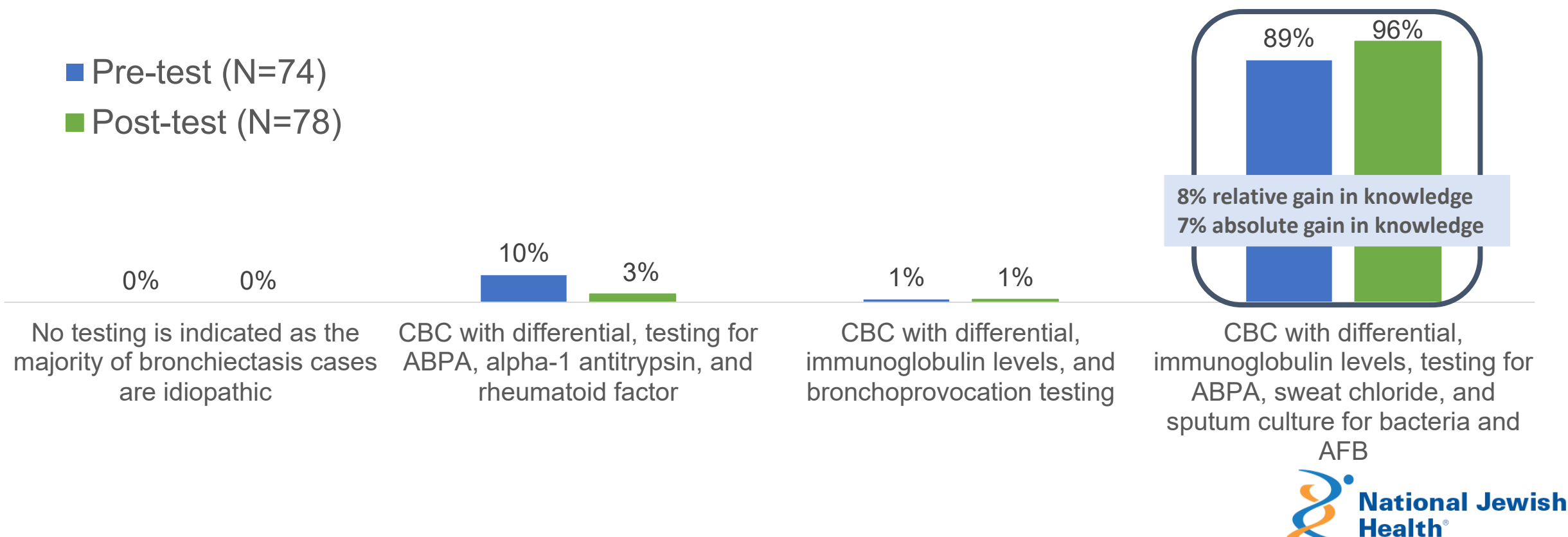


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objective:** *Summarize the spectrum of bronchiectasis presentations and clinical evaluation*

**Q6:** A 35-year-old patient presents for the evaluation of a chronic productive cough and frequent sinopulmonary infections. She has been prescribed various antibiotics for her infections but as soon as she finishes the antibiotics, her symptoms return. High-resolution CT reveals upper-lobe predominant bronchiectasis. Which of the following tests should be performed to determine the etiology of her bronchiectasis?

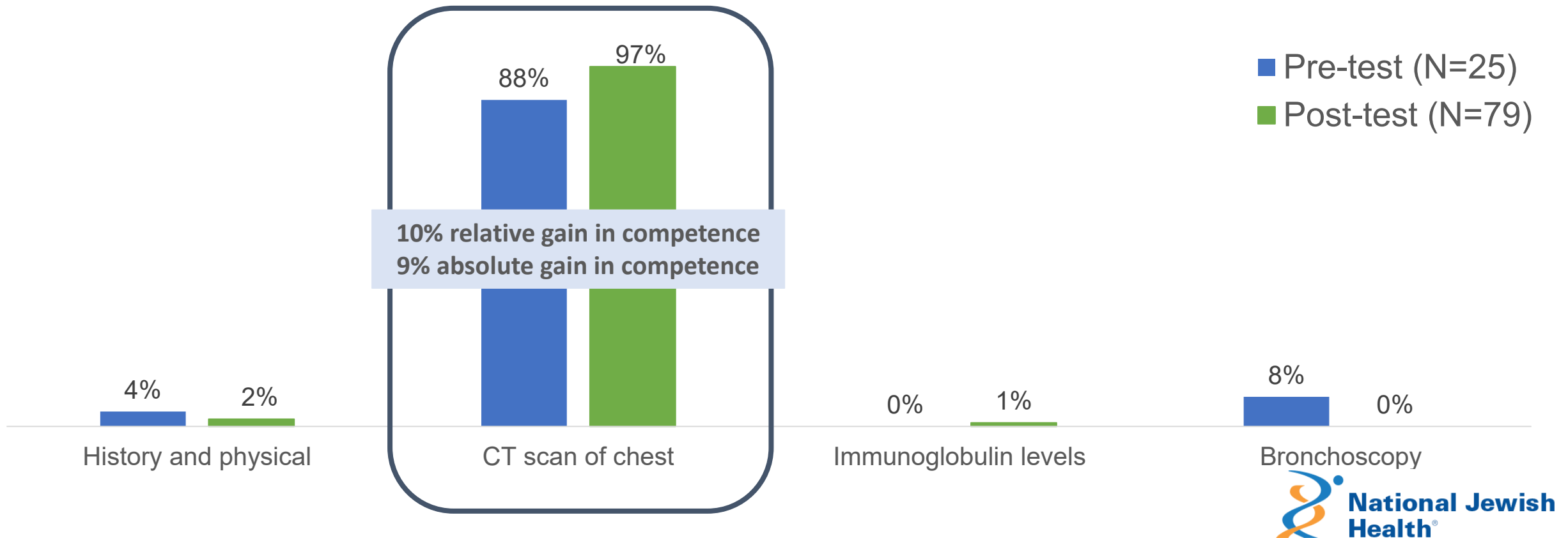


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objectives:** Summarize the spectrum of bronchiectasis presentations and clinical evaluation;  
Describe current guidelines for the diagnosis and management of NTM disease and bronchiectasis

**Q7:** What is the best way to make a diagnosis of bronchiectasis?

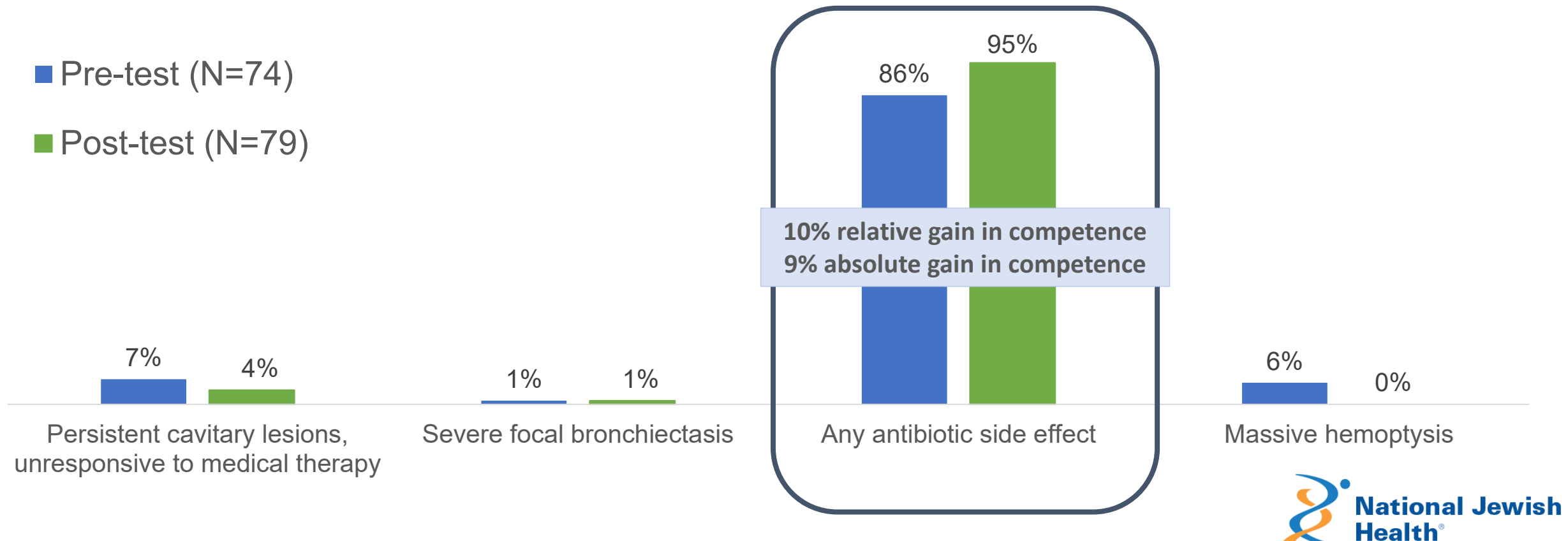


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objective:** *Describe current guidelines for the diagnosis and management of NTM disease and bronchiectasis.*

**Q8:** All of the following are indications for pulmonary resection in a patient with pulmonary NTM infection EXCEPT:

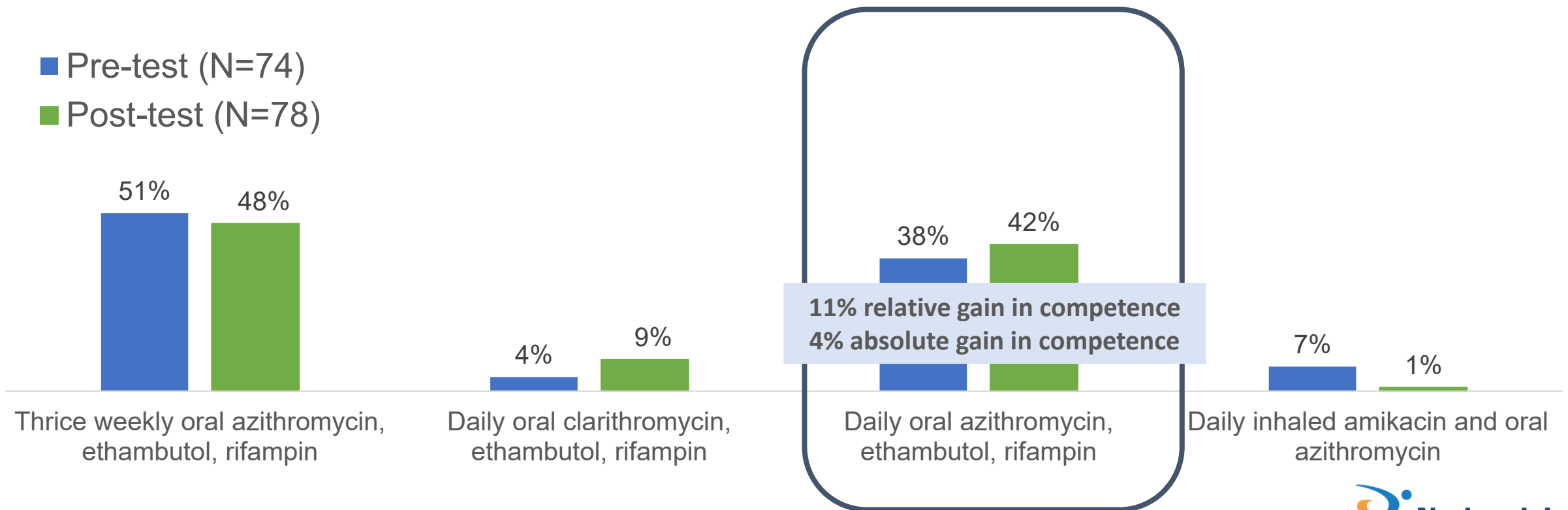


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objective:** *Describe current guidelines for the diagnosis and management of NTM disease and bronchiectasis*

**Q9:** What do the CFF/ECFS consensus guidelines recommend for first-line treatment for macrolide-susceptible, non-cavitary MAC in patients with cystic fibrosis?



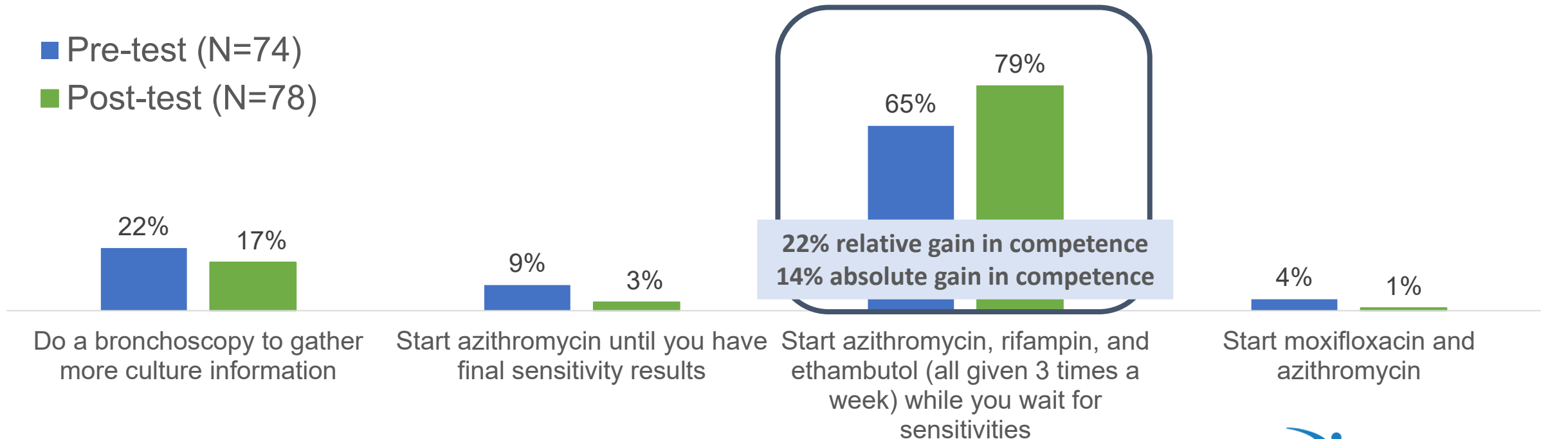


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objective:** *Describe current guidelines for the diagnosis and management of NTM disease and bronchiectasis*

**Q10:** You have an 80-year-old patient on diltiazem, insulin, and pantoprazole with newly diagnosed pulmonary non-cavitary *M. avium* infection based on 2 smear negative/ culture positive sputums with moderate cough and fatigue. The CT scan shows only tree-in-bud changes. What diagnosis/treatment is most appropriate at this time?

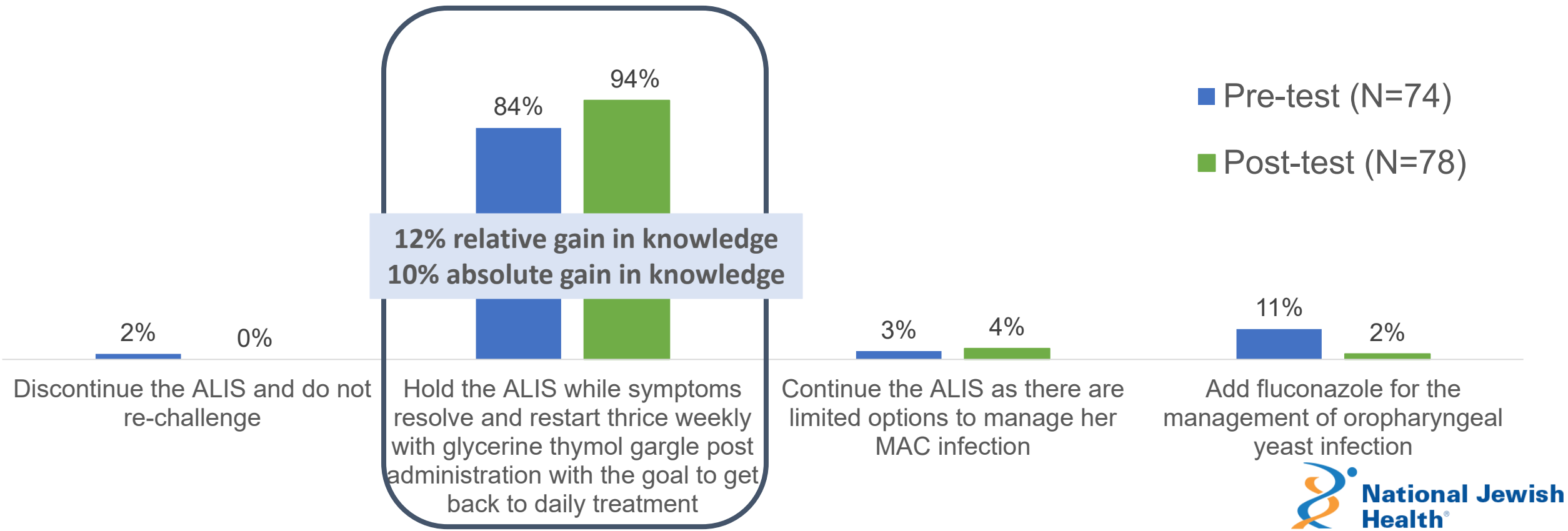


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objective:** Apply the latest evidence to inform pharmacologic and non-pharmacologic management strategies for NTM disease and bronchiectasis

**Q11:** A patient is started on amikacin liposomal inhalation suspension (ALIS) in addition to her azithromycin and ethambutol that she has been taking for a year. She is allergic to rifampin and rifabutin. After 2 weeks she calls complaining of hoarseness and sore throat. What is the appropriate next step?

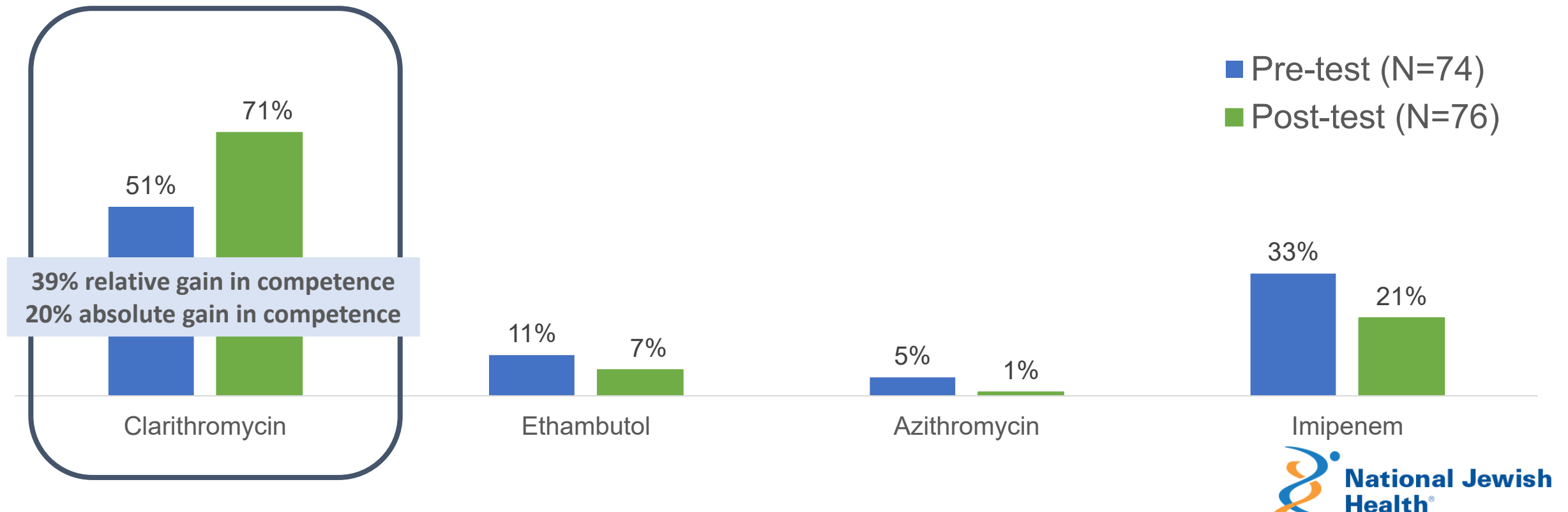


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objective:** *Apply the latest evidence to inform pharmacologic and non-pharmacologic management strategies for NTM disease and bronchiectasis*

**Q12:** Which medication can cause significant accumulation of rifabutin if given as part of a multidrug regimen for M. avium infection?

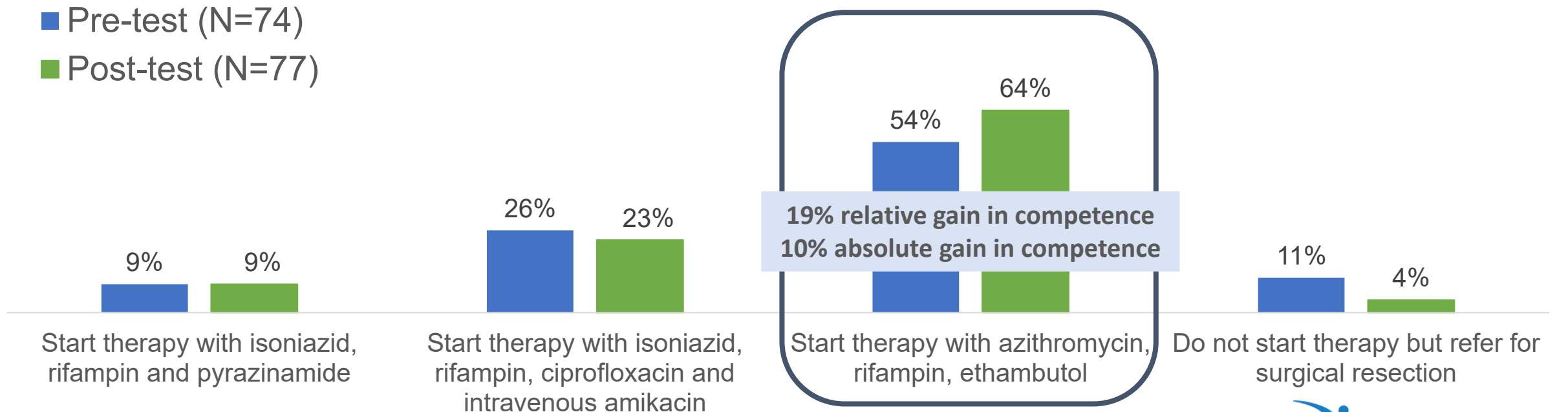


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objective:** *Apply the latest evidence to inform pharmacologic and non-pharmacologic management strategies for NTM disease and bronchiectasis*

**Q13:** A 70-year-old man grows *Mycobacterium kansasii* from three out of three sputum specimens. Chest CT scan shows evidence of fibrocavitary changes in the left upper lobe and areas of emphysema. The patient complains of shortness of breath and some weight loss but minimal cough. Which of the following is the most appropriate next step?

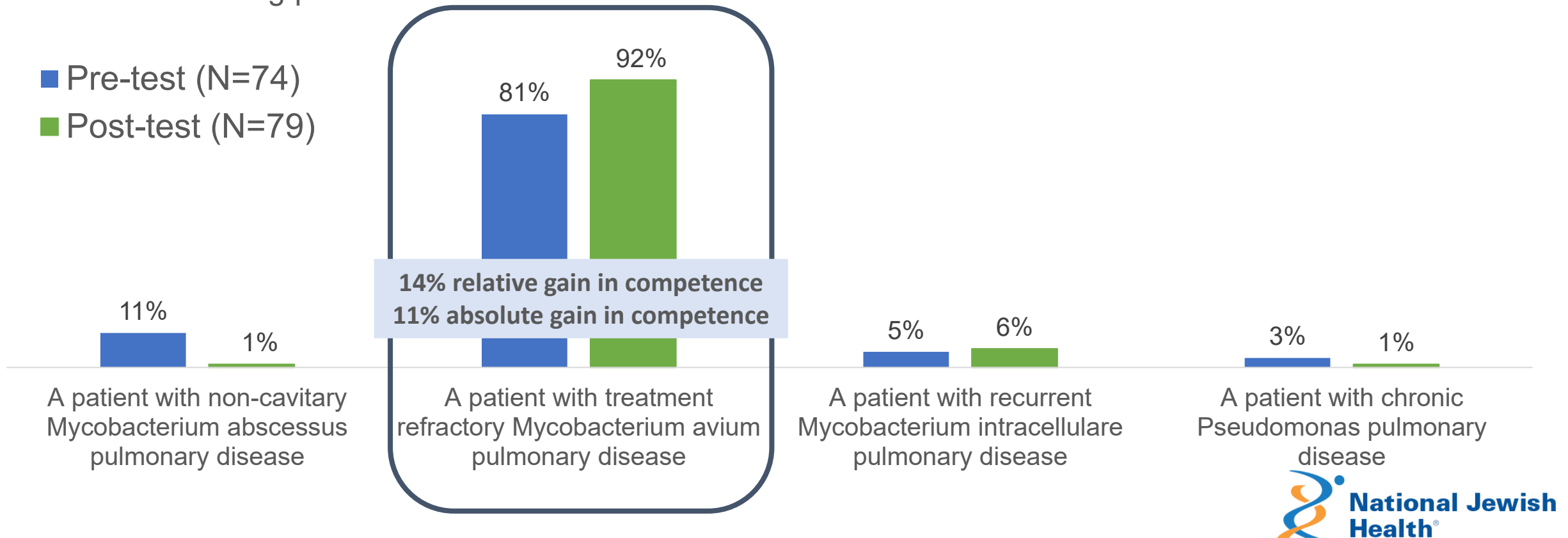


# Level 3/4 Outcomes: Pre/Post-Test

## Final Live Outcomes Summary

**Learning Objectives:** *Apply the latest evidence to inform pharmacologic and non-pharmacologic management strategies for NTM disease and bronchiectasis*

**Q14:** Amikacin liposome inhalation suspension is approved by the Federal Drug Administration (FDA) for treatment of which of the following patients?

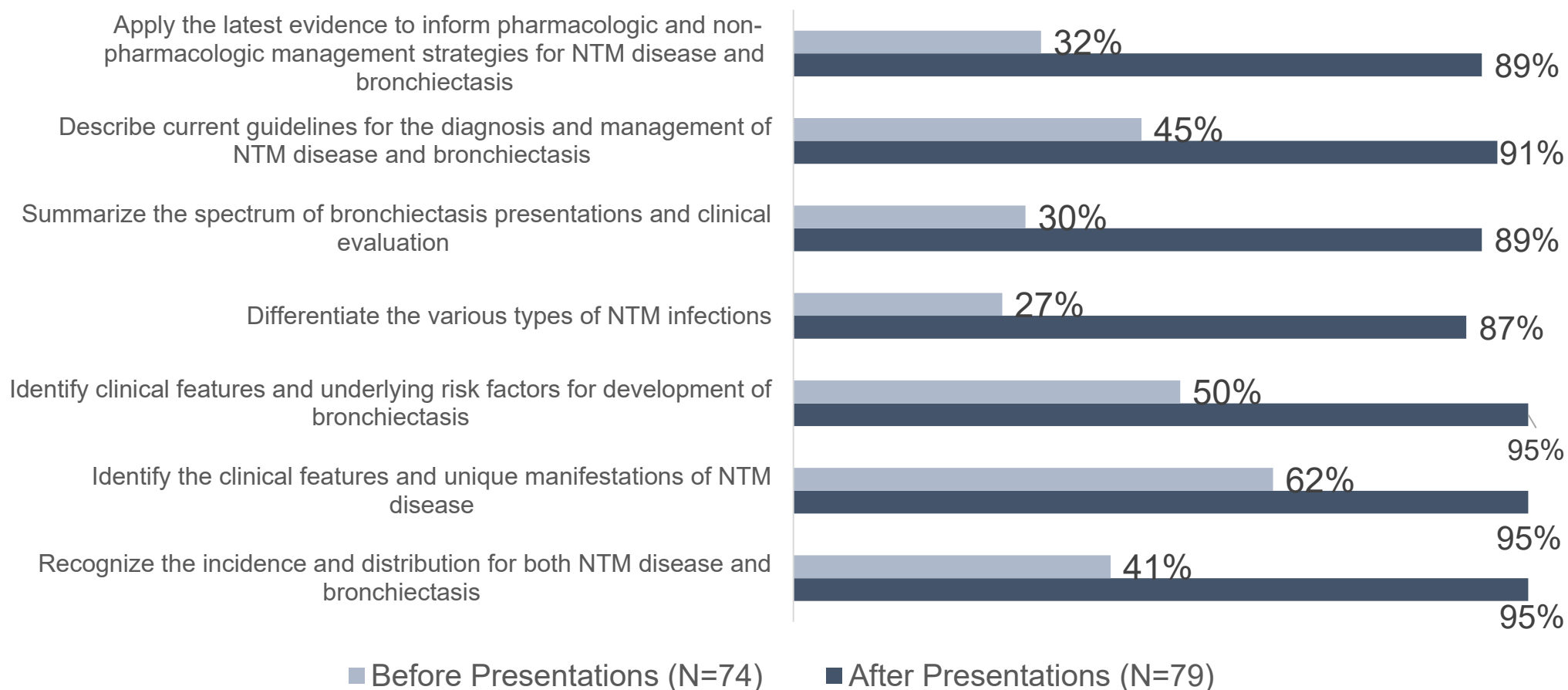




# Level 4 Outcomes: Competence

## Final Live Outcomes Summary

Learners reported their confidence on the learning objectives before and after the program  
(somewhat confident – very confident)



**Relative Gain  
in  
Confidence:  
124%**



**Absolute  
Gain in  
Confidence:  
46%**

# Level 4 Outcomes: Competence

## Final Live Outcomes Summary

An analysis of open-ended comments demonstrates the following changes learners intend to make:

- Pulmonary referral and ID referral sooner
- More aggressive involvement of IV antibiotics up front for NTM infection
- This conference has reinforced the need to apply updated evidence in managing difficult infections. I will be more systematic about using current guidelines for non-tuberculous mycobacterial disease and bronchiectasis, including appropriate diagnostic pathways and newer therapies such as inhaled amikacin. I also plan to strengthen collaboration with colleagues and regional networks to improve care for complex patients.
- Patient education

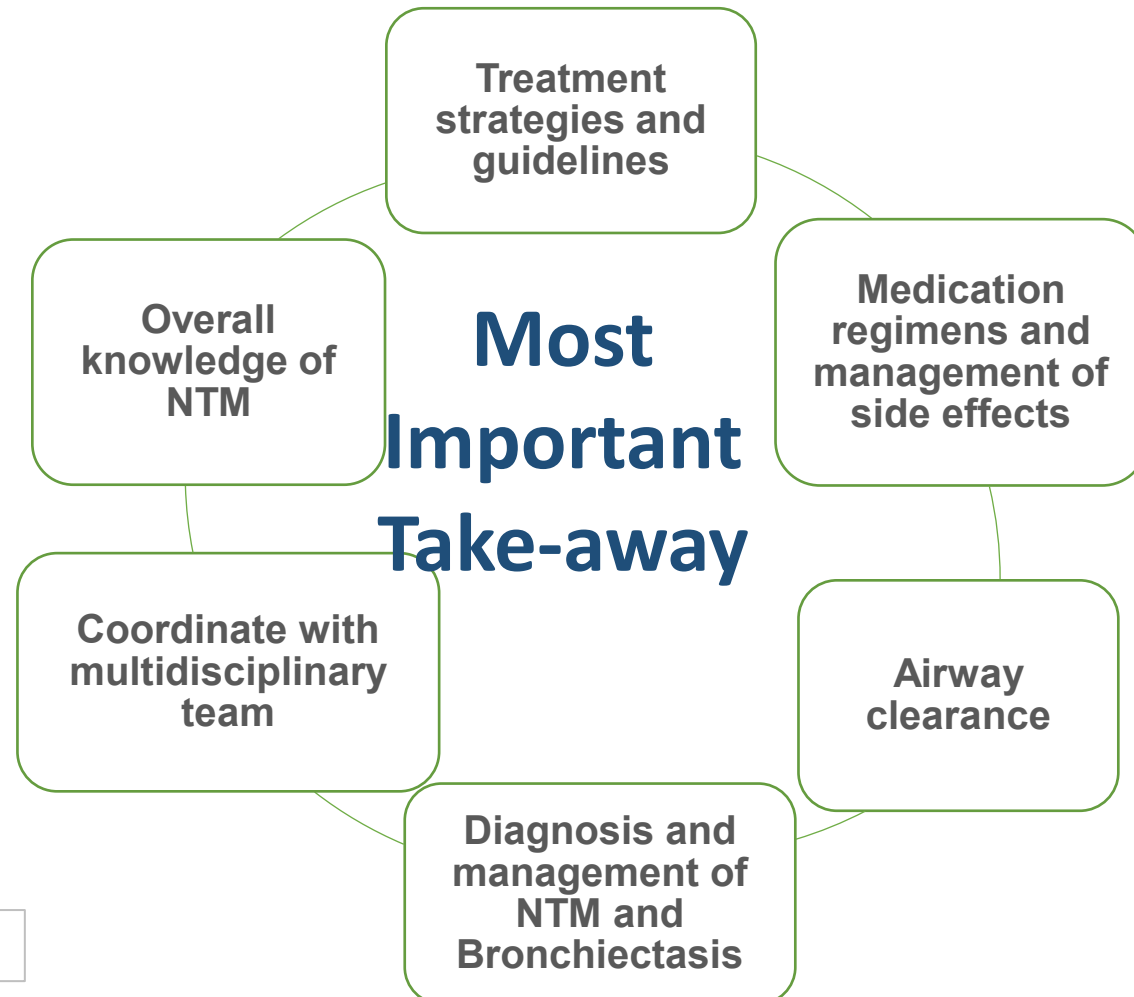
100%

N=75

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

# Program Evaluation

## Final Live Outcomes Summary



N=44

**“The overall approach in this conference covered all the important topics related to NTM and bronchiectasis. Updates regarding new treatments were useful.”**

*- Provider Conference Attendee*

# Program Evaluation

## Final Live Outcomes Summary

### What barriers will the education provided help to address?

- Aid in obtaining coverage of therapy for patients
- The conference did bring up the barriers such as cost, compliance and access and offered strategies such as support groups, foundations, and being mindful when assessing and treating these patients.
- Barriers to medication access, specialty access, airway clearance modalities
- Improved understanding of sources of infection and prevention of infection when traveling.
- Medication side effects
- I feel better equipped to help patients optimize airway clearance, nutrition, community support.

95%

N=79

Evaluation  
respondents reported  
the activity addressed  
strategies for  
overcoming barriers to  
optimal patient care

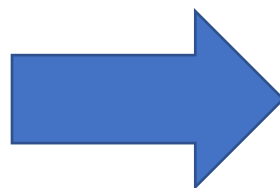
### What topics would you like more information about in future educational activities?

- Antibiotic treatment regimen for pulmonologists
- Continued updates about new treatments and long-term management strategies
- New emerging therapies
- More clinical case studies
- Mycobacterial specific immunodeficiencies
- Extrapulmonary NTM
- Management of NTM or bronchiectasis in asthma patients
- Approach to NTM treatment in a lung transplant candidate or post lung transplant
- Use of airway clearance techniques
- Management of chronic pseudomonas in bronchiectasis

# Level 5 Outcomes: Performance

## Final Live Outcomes Summary

**100%** of follow-up survey respondents stated that they have already made changes in practice based on what they learned in the activity.  
[N=3]



**100%** of follow-up survey respondents stated that their patients have benefited from information they learned in the activity.  
[N=3]

### Examples of changes made in practice include:

- “Systematic evaluation of airway clearance techniques in patients with NTM infections (and referral to pulmonary medicine specialist with expertise in bronchiectasis management, including consideration for brensocatib therapy.”
- “Implementation of measures to eradicate *P.aeruginosa* in patients with bronchiectasis.”
- “The issues of emphasizing airway clearance, nutrition (BMI >18.5), amikacin levels (2-3 x above MIC), linezolid trough levels (changing to TIW dosing) are just some of the changes I have made!”
- “Diagnostic considerations for rapid growers (compared with slow growers). Using imaging for follow up of extrapulmonary NTM.”

**100%**

N=3

Follow-up survey respondents reported the activity helped them address barriers they have recently encountered in practice

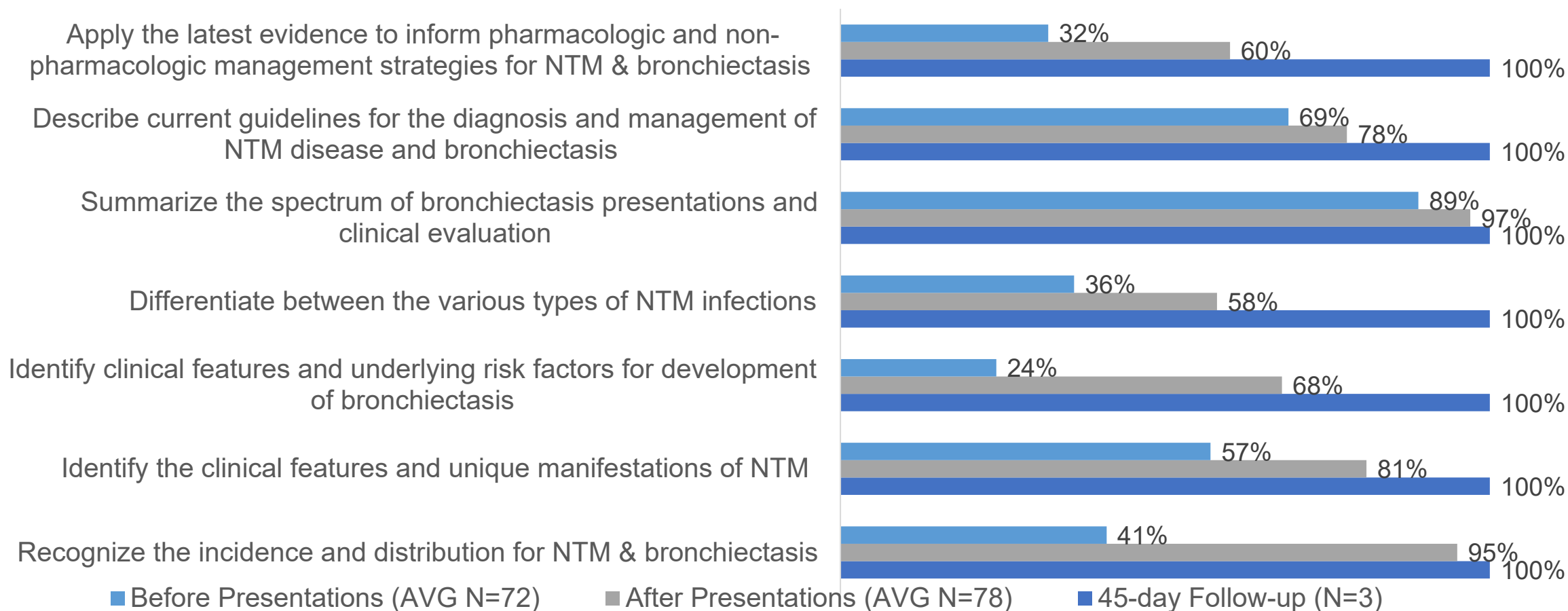


# Level 5 Outcomes: Performance

## Final Live Outcomes Summary

Learners reported their confidence on the learning objectives before and after the program, and again at 45-days following the program  
**(somewhat confident – very confident)**

Overall, confidence in recognizing and managing NTM and bronchiectasis remained high/ continued to increase among survey respondents 45 days after the program.



# Accreditation

## Final Live 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.

NJH designates this live activity for a maximum of 18.5 *AMA PRA Category 1 Credits™*.

Provider approved by the California Board of Registered Nursing, Provider Number 12724, for 18.5 contact hours.

