Can You Identify Patients with NTM?

Diagnosis, Treatment Selection, and Monitoring of Nontuberculous Mycobacterial Lung Disease

Insmed
Grant ID: NGC41154
Final Live and Online Outcomes Summary
Date Range 4/27/21-5/13/22

National Jewish Health
Breathing Science is Life.
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Executive Summary

Final Outcomes Summary

Program Overview

**Summary:** This program was a blended series of 2 national live webinars and 4 Grand Round presentations at institutions across the country. The activity was also endured on myCME. The multimedia activity featured animated video clips on the processes involved in NTM, case-based review of HRCT imaging by a radiologist, and Q&A with expert faculty in pulmonology and infectious disease.

Learning Objectives

- Apply best practices to the diagnosis of NTM-LD.
- Implement treatment based on the updated NTM guidelines and individual patient response and considerations.
- Incorporate data on current and emerging therapies into treatment strategies for NTM-LD.

Target Audience & Accreditation

**Target Audience:** Pulmonologists and Infectious Disease Physicians, Primary Care/Family Medicine Physicians, Advanced Practice Nurses and Physician Assistants who treat patients with NTM.

**Live activities:** April – November, 2021

**Enduring Activity:** May 13, 2021 - May 13, 2022


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National Jewish Health
University of Colorado Denver
Denver, Colorado
Program Features
Final Outcomes Summary

Features included:
✓ Whiteboard animation clips
✓ Interpretation of HRCT Imaging
✓ Cases
✓ Q&A discussions

HRCT Imaging

Nodular Bronchiectatic Type

NTM whiteboard animations
**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).

- **Personalized emails and e-newsletters:** myCME, CHEST physicians & NJH database
- **Social media ads and posts**
- **Search engine optimization on myCME Platform**
- **Promoted on VuMedi**
- **Dedicated landing page on NJH website and myCME platform**

**Personalized + Customized Intelligent Marketing Platform**
Overall Program Impact
Final Outcomes Summary – Live Broadcasts and Online Enduring

2,733 total learners across entire program
221 learners from live broadcasts
2,512 learners from online enduring

Potential Impact to 88,192 patients visits this year

“Just about the best CME lecture I have heard - nicely summarized the initial part of the talk and applied that info to case presentations.”
- Online enduring learner

Pie chart does not include unidentified online learners

MD/DO=662
NP=161
PA=219
RN=125
PharmD=23
Other=277
Unidentified*=1266

Total learners = 2,733

*Unidentified learners are clinicians who view at least two pages of the enduring activity on myCME but do not proceed further for the platform to collect their demographic information.

Exceeded total guaranteed learners by 553!
Can You Identify Patients with NTM? Diagnosis, Treatment & Monitoring

CME 1.00 Credit

Nontuberculous Mycobacterial lung disease (NTM-LD)

Quantitative Educational Impact Summary
Final Outcomes Summary: Online Enduring Activity

**Participation**

- MD/DO: 40%
- NP: 12%
- PA: 17%
- RN: 9%
- PharmD: 2%
- Other: 20%

Pie chart does not include unidentified online learners

**N=1246**

- MD/DO=495
- PA=210
- NP=146
- RN=118
- PharmD=21
- Other=256
- Unidentified* =1266
- Total=2512

**Patient Impact**

- 73,372

**Learning Gain Across Objectives**

- **Apply best practices to diagnosis of NTM**
  - Relative Gain: 144%
  - Absolute Gain: 49%

- **Incorporate data on current and emerging therapies**
  - Relative Gain: 139%
  - Absolute Gain: 46%

- **Implement treatment based on updated NTM guidelines**
  - Relative Gain: 78%
  - Absolute Gain: 39%  

- Pre (AVG N = 391)
- Post (AVG N = 316)

**Persistent Learning Gaps/Needs**

- 21% of learners were unable to apply best practices to the diagnosis of NTM at post-test

**Competency Gap**

- Improved 46%
- Reinforced 34%
- Competency Gap 21%

- 17% of learners were unable to implement treatment based on the updated NTM guidelines at post-test

**Confidence @ Post-Test**

- Very confident: 34%
- Confident: 42%
- Neutral: 22%
- Not confident: 2%

- Reinforced 34%
- Improved 49%

- Competency Gap 17%
Qualitative Educational Impact Summary
Final Outcomes Summary: Online Enduring Activity

### Patient Impact
- **310** Evaluation respondents
- Who see **1,411** NTM Patients Weekly
- Which translates to **73,372** Patient Visits Annually

### Educational Impact

#### Knowledge and Competence Change by Learning Objective
- Applying best practices to the diagnosis of NTM-LD increased by **139%** [N=297]
- **144%** increase shown by learners in incorporating data on current and emerging therapies into treatment strategies for NTM-LD [N=326]
- Implementing treatments based on the updated NTM guidelines and individual patient response and considerations increased by **78%** [N=326]

### Practice Change
- **91%** Reported intent to change their practice [N=310]
- **105%** Overall relative confidence gain [N=310]
- **75%** Indicated the activity addressed strategies for overcoming barriers to optimal patient care [N=310]
Level (1) Outcomes: Participation (Degree)

Final Outcomes Summary: Online Enduring Activity

Pie chart does not include unidentified online learners

<table>
<thead>
<tr>
<th>Degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD/DO</td>
<td>495</td>
</tr>
<tr>
<td>PA</td>
<td>210</td>
</tr>
<tr>
<td>NP</td>
<td>146</td>
</tr>
<tr>
<td>RN</td>
<td>118</td>
</tr>
<tr>
<td>PharmD</td>
<td>21</td>
</tr>
<tr>
<td>Other</td>
<td>256</td>
</tr>
<tr>
<td>Unidentified*</td>
<td>1266</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2512</strong></td>
</tr>
</tbody>
</table>

*Unidentified learners are clinicians who view at least two pages of the enduring activity on myCME but do not proceed further for the platform to collect their demographic information.
Level (1) Outcomes: Participation (Specialty)
Final Outcomes Summary: Online Enduring Activity

- Pulmonary: 268
- Family/General/Adult: 199
- Infectious Disease: 119
- Internal Medicine: 77
- Surgery: 30
- Pediatrics: 22
- Orthopedics: 11
- Cardiology: 43
- Hospitalist: 8
- Emergency: 39
- Critical Care: 26
- Other (radiology, allergy, pathology, geriatric medicine, etc): 404
- Unidentified*: 1266

Total: 2512

*Unidentified learners are clinicians who view at least two pages of the enduring activity on myCME but do not proceed further for the platform to collect their demographic information.
**Level (2) Outcomes: Satisfaction**

### Final Outcomes Summary: Online Enduring Activity

Evaluation respondents report the activity was “Excellent” to “Good” at:

<table>
<thead>
<tr>
<th>Objective</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting your educational needs</td>
<td>97%</td>
</tr>
<tr>
<td>Meeting the learning objectives</td>
<td>97%</td>
</tr>
<tr>
<td>Reinforcing and/or improving your current skills</td>
<td>96%</td>
</tr>
<tr>
<td>Improving your ability to treat or manage your patients</td>
<td>95%</td>
</tr>
<tr>
<td>Providing tools and strategies you can apply to practice</td>
<td>96%</td>
</tr>
</tbody>
</table>

- Reported the material was presented without commercial bias: **98%**  
  \[N=310\]

- Reported the content was evidence-based and clinically relevant: **99%**  
  \[N=310\]
Level (3 & 4) Outcomes: Knowledge & Competence

Final Outcomes Summary: Online Enduring Activity

Overall Knowledge Gain across Learning Objectives

39% 84%

Pre-test (AVG N=391) Post-test (AVG N=316)

115% Overall Relative Knowledge Gain
45% Overall Absolute Knowledge Gain
Learning Objective: Apply best practices to the diagnosis of NTM-LD

Question 1: A 67-year-old patient is referred to you with a long history of frequent bouts of bronchitis requiring antibiotic therapy. Between episodes of bronchitis she has persistent cough with mild sputum production and fatigue. Her sputum is culture positive for Mycobacterium avium which is recovered on 2 sputum specimens that are AFB smear negative and culture positive on broth medium only. Her chest CT scan shows mild bilateral bronchiectasis with scattered tree-in-bud opacities. The initial management of this patient should include:

- Amikacin liposomal inhalation suspension (ALIS) as monotherapy
- Moxifloxacin, rifampin, ethambutol three times weekly
- Airway clearance with a positive expiratory pressure (PEP) device and 7% inhaled hypertonic saline
- Azithromycin, rifampin, ethambutol, intravenous amikacin daily

Clinical Rationale: The patient should begin airway clearance efforts with close follow-up including symptom assessment, sputum AFB analysis and chest imaging. Persistence of symptoms, persistent positive sputum cultures for MAC and radiographic progression are all individually and collectively indications to begin guidelines based MAC therapy. In this case, airway clearance with a positive expiratory pressure (PEP) device and 7% inhaled hypertonic saline.
Level (3 & 4) Outcomes: Knowledge & Competence
Final Outcomes Summary: Online Enduring Activity

**Learning Objective:** *Incorporate data on current and emerging therapies into treatment strategies for NTM-LD*

**Question 2:** In vitro susceptibility testing for MAC is recommended for which 2 antibiotics?

**Clinical Rationale:**
In vitro susceptibility for MAC isolates has been shown to predict treatment response (success and failure) for macrolides (azithromycin) and amikacin. No other antibiotics used for treating MAC have been shown to have that correlation.
**Learning Objective:** Implement treatment based on the updated NTM guidelines and individual patient response and considerations

**Question 3:** In patients with refractory MAC lung disease defined as persistently positive sputum cultures for MAC after at least 6 months of guidelines based therapy, what is the FDA approved recommendation for augmenting therapy according to the 2020 multi-society NTM treatment guidelines?

**Clinical Rationale:** The new NTM treatment guidelines strongly recommend adding ALIS to the treatment regimens of MAC patients who meet the definition of treatment refractory disease. This recommendation is consistent with the approval guidance from the FDA for ALIS.
Learners reported their confidence as it relates to the learning objectives before and after the activity (Very confident – confident)

- Incorporate data on current and emerging therapies into treatment strategies for NTM-LD
  - Before Presentation (N=412): 35%
  - After Presentation (N=310): 76%

- Implement treatment based on the updated NTM guidelines and individual patient response and considerations
  - Before Presentation (N=412): 37%
  - After Presentation (N=310): 77%

- Apply best practices to the diagnosis of NTM-LD
  - Before Presentation (N=412): 39%
  - After Presentation (N=310): 76%
Level (4) Outcomes: Competence
Final Outcomes Summary: Online Enduring Activity

What change will you incorporate in your practice?

- Improve patient education and communication (13 responses)
- Continue improving knowledge and awareness of NTM (26 responses)
- Consider new treatments and improve overall treatment plan (29 responses)
- Improve long-term management of NTM (21 responses)
- Apply guidelines for diagnosis and management of NTM (19 responses)
- Improve diagnostic workup for NTM (21 responses)

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

91% (N=310)

N=129
Evaluation Survey Results
Final Outcomes Summary: Online Enduring Activity

N=190

**Most Important Take-away**

- Long-term nature of treatment and monitoring (79 responses)
- Use of medication and managing adverse reactions (14 responses)
- Knowledge of NTM and its prevalence (29 responses)
- Updated NTM guidelines (29 responses)
- Patient communication and support (13 responses)
- The importance of early and accurate diagnosis (26 responses)

**Quotes**

- "Enjoyed the course, it opened my eyes to lab side and sputum testing frequency."
  - Online enduring learner
- "The visuals were very helpful and the radiology review was excellent."
  - Online enduring learner
What barriers will the education provided help to address?

- Access to care
- Evidence-based practice
- Knowledge of disease process and treatment
- Knowledge of guidelines
- Knowledge of the radiological findings
- Discussing expectations and monitoring early on
- Patient compliance with treatment
- Patient education and treatment options
- Patient resistance to therapy
- Starting treatment before referral
- What medications to use and when to use them
- Cost and insurance issues

Evaluation respondents indicated the activity addressed strategies for overcoming barriers to optimal patient care.
<table>
<thead>
<tr>
<th>What topics would you like more information about in future educational activities?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Drug susceptibility testing of NTM isolates</td>
</tr>
<tr>
<td>• Differential diagnosis of NTM</td>
</tr>
<tr>
<td>• Indications for surgery</td>
</tr>
<tr>
<td>• More complex management issues</td>
</tr>
<tr>
<td>• How to use alternative agents</td>
</tr>
<tr>
<td>• Nutrition for patients with NTM and supplements to enhance treatment</td>
</tr>
<tr>
<td>• Prognosis</td>
</tr>
<tr>
<td>• Radiological aspects in detail</td>
</tr>
<tr>
<td>• Surgical procedures</td>
</tr>
<tr>
<td>• Treatment and workup of NTM</td>
</tr>
</tbody>
</table>
Activity Format: Live Broadcasts

Final Outcomes Summary: Live Webinars and Grand Rounds

National Jewish Health Hosted National Webinars
April 27, 2021
July 29, 2021

Presentations at Grand Rounds - Locations and Dates

<table>
<thead>
<tr>
<th>Location</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jefferson Health in Philadelphia, PA</td>
<td>June 29, 2021</td>
</tr>
<tr>
<td>University of California in Los Angeles, CA</td>
<td>September 7, 2021</td>
</tr>
<tr>
<td>Mount Sinai in New York, NY</td>
<td>September 10, 2021</td>
</tr>
<tr>
<td>National Jewish Health in Denver, CO*</td>
<td>October 29, 2021</td>
</tr>
<tr>
<td>University of Florida, Jacksonville, FL</td>
<td>November 1, 2021</td>
</tr>
</tbody>
</table>

*NJH Grand Rounds offered as an additional session.
Quantitative Educational Impact Summary

Final Outcomes Summary: Live Webinars and Grand Rounds

**Participation**

- **MD/DO**: 76%
- **NP**: 7%
- **PA**: 4%
- **RN**: 3%
- **PharmD**: 1%
- **Other**: 9%

**Patient Impact**: 14,820

**Total**: 221

**Starts**

- Pre-test: 221
- Post-test: 221

**Certs**

- Very confident: 42%
- Confident: 38%
- Neutral: 15%
- Not confident: 5%

**Learning Gain Across Objectives**

- **Apply best practices to diagnosis of NTM**
  - Relative Gain: 58%
  - Absolute Gain: 13%
- **Incorporate data on current and emerging therapies**
  - Relative Gain: 71%
  - Absolute Gain: 30%
- **Implement treatment based on updated NTM guidelines**
  - Relative Gain: 63%
  - Absolute Gain: 32%

**Persistent Learning Gaps/Needs**

- 29% of learners were unable to apply best practices to the diagnosis of NTM at post-test
- 28% of learners were unable to implement treatment based on the updated NTM guidelines at post-test

**Competency Gap**

- **Improved**: 13%
- **Reinforced**: 58%

**Confidence @ Post-Test**

- **Very confident**: 42%
- **Confident**: 38%
- **Neutral**: 15%
- **Not confident**: 5%

233% Relative Gain in Confidence Across LOs
Qualitative Educational Impact Summary
Final Outcomes Summary: Live Webinars and Grand Rounds

**Patient Impact**
- 78 Evaluation respondents
- Who see 285 NTM Patients Weekly
  - Which translates to 14,820 Patient Visits Annually

**Educational Impact**
- Knowledge and Competence Change by Learning Objective
  - Applying best practices to the diagnosis of NTM-LD increased by 22% [N=76]
  - Incorporating data on current and emerging therapies into treatment strategies for NTM-LD increased by 71% [N=78]
  - Implementing treatments based on the updated NTM guidelines and individual patient response and considerations increased by 51% [N=78]

**Practice Change**
- 93% Reported intent to change their practice [N=77]
- 233% Overall relative confidence gain [N=78]
- 71% Indicated the activity addressed strategies for overcoming barriers to optimal patient care [N=77]
Level (1) Outcomes: Participation (Degree)

Final Outcomes Summary: Live Webinars and Grand Rounds

76% of learners were physicians

87% of learners were physicians and advanced practice providers

<table>
<thead>
<tr>
<th>Degree</th>
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</thead>
<tbody>
<tr>
<td>MD/DO</td>
<td>167</td>
</tr>
<tr>
<td>NP</td>
<td>15</td>
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<tr>
<td>PA</td>
<td>9</td>
</tr>
<tr>
<td>RN</td>
<td>7</td>
</tr>
<tr>
<td>PharmD</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total Learners</strong></td>
<td><strong>221</strong></td>
</tr>
</tbody>
</table>
Level (1) Outcomes: Participation (Specialty)

Final Outcomes Summary: Live Webinars and Grand Rounds

<table>
<thead>
<tr>
<th>Degree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary</td>
<td>98</td>
</tr>
<tr>
<td>Family/Internal/Adult</td>
<td>47</td>
</tr>
<tr>
<td>Infectious Disease</td>
<td>38</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>9</td>
</tr>
<tr>
<td>Allergy</td>
<td>4</td>
</tr>
<tr>
<td>Clinical Immunology</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>23</td>
</tr>
<tr>
<td><strong>Total Learners</strong></td>
<td><strong>221</strong></td>
</tr>
</tbody>
</table>
Evaluation Respondents rated the activity “Excellent” to “Good” at:

- Meeting your educational needs: 98%
- Reinforcing and/or improving your current skills: 98%
- Meeting the learning objectives: 99%
- Improving your ability to treat or manage your patients: 96%
- Providing tools and strategies you can apply to practice: 98%

Reported the material was presented without commercial bias: 97% (N=78)
Reported the content was evidence-based and clinically relevant: 99% (N=78)
Level (3 & 4) Outcomes: Knowledge & Competence

Final Outcomes Summary: Live Webinars and Grand Rounds

Overall Knowledge Gain across Learning Objectives

Pre-test (N=85) 54%  
Post-test (N=76) 79%

46% Overall Relative Knowledge Gain

25% Overall Absolute Knowledge Gain
Learning Objective: Apply best practices to the diagnosis of NTM-LD

Question 1: A 67-year-old patient is referred to you with a long history of frequent bouts of bronchitis requiring antibiotic therapy. Between episodes of bronchitis she has persistent cough with mild sputum production and fatigue. Her sputum is culture positive for *Mycobacterium avium* which is recovered on 2 sputum specimens that are AFB smear negative and culture positive on broth medium only. Her chest CT scan shows mild bilateral bronchiectasis with scattered tree-in-bud opacities. The initial management of this patient should include:

- Airway clearance with a positive expiratory pressure (PEP) device and 7% inhaled hypertonic saline
- Amikacin liposomal inhalation suspension (ALIS) as monotherapy
- Azithromycin, rifampin, ethambutol, intravenous amikacin daily

Clinical Rationale: The patient should begin airway clearance efforts with close follow-up including symptom assessment, sputum AFB analysis and chest imaging. Persistence of symptoms, persistent positive sputum cultures for MAC and radiographic progression are all individually and collectively indications to begin guidelines based MAC therapy, in this case, azithromycin, ethambutol and rifampin.
Level (3 & 4) Outcomes: Knowledge & Competence

Final Outcomes Summary: Live Webinars and Grand Rounds

Learning Objective: *Incorporate data on current and emerging therapies into treatment strategies for NTM-LD*

**Question 2:** In vitro susceptibility testing for MAC is recommended for which 2 antibiotics?

**Clinical Rationale:**
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Question 3: In patients with refractory MAC lung disease defined as persistently positive sputum cultures for MAC after at least 6 months of guidelines based therapy, what is the FDA approved recommendation for augmenting therapy according to the 2020 multi-society NTM treatment guidelines?

Clinical Rationale: The new NTM treatment guidelines strongly recommend adding ALIS to the treatment regimens of MAC patients who meet the definition of treatment refractory disease. This recommendation is consistent with the approval guidance from the FDA for ALIS.
Learners reported their confidence as it relates to the learning objectives before and after the activity (Very confident – confident)

- Applying best practices to the diagnosis of NTM-LD: 26% before, 85% after
- Implementing treatment based on the updated NTM guidelines and individual patient response and considerations: 22% before, 78% after
- Incorporating data on current and emerging therapies into treatment strategies for NTM-LD: 23% before, 77% after

Level (4) Outcomes: Competence
Final Outcomes Summary: Live Webinars and Grand Rounds
Evaluation Survey Results
Final Outcomes Summary: Live Webinars and Grand Rounds

What changes will you incorporate in your practice?

- Follow guidelines for diagnosis of NTM-LD: 55%
- Increase frequency of sputum cultures: 35%
- Improve patient monitoring and follow-up: 34%
- Improve differential diagnosis of NTM: 32%
- Improve patient education and communication: 32%
- Follow guidelines for management of NTM: 51%

Evaluation respondents provided multiple intended practice changes.

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

93% N=77
Evaluation Survey Results
Final Outcomes Summary: Live Webinars and Grand Rounds

N=67

Diagnosis, treatment, and management of NTM (31 responses)

Use of medication and managing adverse reactions (13 responses)

Knowledge of NTM and its prevalence (8 responses)

Most Important Take-away

Updated NTM guidelines (15 responses)

"Grateful that we were able to learn from such excellent qualified professors who have clinical expertise.”
- Grand Rounds attendee

“I really like the whiteboard videos.”
- Grand Rounds attendee
What barriers will the education provided help to address?

- Access to specialists to help with management
- Accessing a newly approved drug
- Cost issues
- Adherence to guideline recommendations
- Capacity to communicate goals to patients
- Informed choices when advocating for treatment
- Knowledge of treatment
- Reluctance of general infectious disease specialists to start treatment for NTM
- Treatment guidelines
- What to do when patient cough improves to a point where sputum production would be hard to test

Evaluation respondents indicated the activity addressed strategies for overcoming barriers to optimal patient care.
<table>
<thead>
<tr>
<th>What topics would you like more information about in future educational activities?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug-resistant MAC and <em>M. abscessus</em></td>
</tr>
<tr>
<td>Emerging therapies</td>
</tr>
<tr>
<td>How the body's immune system reacts to mycobacteria (i.e. macrophages, nature of granulomas...)</td>
</tr>
<tr>
<td>Optimal management of other NTM infections</td>
</tr>
<tr>
<td>Microbiology and lab diagnosis</td>
</tr>
<tr>
<td>Rapid growing NTM</td>
</tr>
<tr>
<td>Case-based studies of complicated patients</td>
</tr>
<tr>
<td>Treatment of non-MAC NTM</td>
</tr>
<tr>
<td>NTM in survivors of severe COVID with chronic lung scarring</td>
</tr>
</tbody>
</table>
56% of respondents indicated that they have incorporated changes into their practice as a result of this activity. [N=16]

25% indicated they had not yet made changes but remain committed to making changes in practice. [N=16]

What changes have you incorporated into practice as a result of this activity?

- Improved patient education and communication: 29%
- Followed guidelines for management of NTM: 29%
- Initiated new drug regimens for patients with NTM: 29%
- Initiated treatment earlier: 29%
- Assessed conversion of cultures: 29%
- Increased frequency of sputum cultures: 29%
- Ordered new labs and testing to assess patients for NTM: 29%
- Initiated early radiographic assessment of patients: 29%
- Followed guidelines for diagnosis of NTM: 57%
- Improved differential diagnosis of NTM: 57%
- Utilized shared decision making with patients when identifying treatment options: 29%
- Referred to a specialist or subspecialist: 14%
- Improved patient monitoring and follow-up: 14%
- Improved patient education and communication: 14%
- Improved differential diagnosis of NTM: 14%
- Increased frequency of sputum cultures: 14%
- Ordered new labs and testing to assess patients for NTM: 14%
- Initiated early radiographic assessment of patients: 14%
- Followed guidelines for diagnosis of NTM: 14%
- Improved differential diagnosis of NTM: 14%

N=9

56% of respondents indicated that they have incorporated changes into their practice as a result of this activity. [N=16]

25% indicated they had not yet made changes but remain committed to making changes in practice. [N=16]
### What barriers have you experienced since this activity that may impact patient outcomes or optimal patient care?

<table>
<thead>
<tr>
<th>Barriers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None were identified</td>
<td>50%</td>
</tr>
<tr>
<td>Access to equipment</td>
<td>21%</td>
</tr>
<tr>
<td>Cost of therapy</td>
<td>14%</td>
</tr>
<tr>
<td>Treatment-related adverse events</td>
<td>7%</td>
</tr>
<tr>
<td>Patient adherence</td>
<td>7%</td>
</tr>
<tr>
<td>Organizational or institutional</td>
<td>14%</td>
</tr>
<tr>
<td>Other</td>
<td>21%</td>
</tr>
</tbody>
</table>
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 each live activity for a maximum of 1.0 AMA PRA Category 1 Credit™.

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