

Table 1. Interpretation of Strong and Conditional (Weak) Recommendations

	Recommendations	
	Strong	Conditional
Patients	Most individuals in this situation would want the recommended course of action, and only a small proportion would not.	The majority of individuals in this situation would want the suggested course of action, but many would not.
Clinicians	- Most individuals should receive the intervention. - Adherence to the recommendation according to the guideline could be used as a quality criterion or performance indicator. - Formal decision aids are not likely to be needed to help individuals make decisions consistent with their values and preferences.	Recognize that different choices will be appropriate for individual patients and that you must help each patient arrive at a management decision consistent with his or her values and preferences. Decision aids may be useful in helping individuals to make decisions consistent with their values and preferences.
Policy makers	The recommendation can be adopted as policy in most situations.	Policy making will require substantial debate and involvement of various stakeholders.

Source: Grading of Recommendations Assessment, Development and Evaluation Working Group [1, 2].

NTM and *Mycobacterium abscessus* among the rapidly growing NTM. Twenty-two PICO (Population, Intervention, Comparators, Outcomes) questions and associated recommendations are included in the Guideline. A panel of experts was carefully selected and screened for conflicts of interest and included specialists in pulmonary medicine, infectious diseases and clinical microbiology, laboratory medicine, and patient advocacy. The recommendations were developed based on the evidence that was appraised using GRADE (Grading of Recommendations Assessment, Development, and Evaluation) and are summarized below [1, 2]. Recommendations were either “strong” or “conditional” (Table 1), and as suggested by GRADE, the phrase “we recommend” was used for strong recommendations and “we suggest” for conditional recommendations [3].

This executive summary is a condensed version of the panel’s recommendations for the 22 PICO questions. A detailed description of background, methods, evidence summary, and rationale that support each recommendation can be found online in the full text and accompanying supplementary material.

DIAGNOSTIC CRITERIA FOR NTM PULMONARY DISEASE

The 2007 guideline included clinical, radiographic, and microbiologic criteria for diagnosing NTM pulmonary disease [4]. The current guideline also recommends use of these criteria to classify patients as having NTM pulmonary disease (Table 2). The significance of NTM isolated from the sputum of individuals who meet the clinical and radiographic criteria in Table 2 must be interpreted in the context of the number of positive cultures and specific species isolated. Because NTM can be isolated from respiratory specimens due to environmental contamination and because some patients who have an NTM isolated from their respiratory tract do not show evidence of progressive disease, >1 positive sputum culture is recommended for diagnostic purposes, and the same NTM species (or subspecies in the case of *M. abscessus*) should be isolated in ≥2 sputum cultures. Clinically significant MAC pulmonary disease is unlikely in patients who have a single positive sputum culture during the initial evaluation [5–7] but can be as high as 98% in those with ≥2 positive cultures [5].

Table 2. Clinical and Microbiologic Criteria for Diagnosis of Nontuberculous Mycobacterial Pulmonary Disease^a

Clinical	Pulmonary or Systemic Symptoms	
Radiologic	Nodular or cavitary opacities on chest radiograph, or a high-resolution computed tomography scan that shows bronchiectasis with multiple small nodules	Both Required
and	Appropriate exclusion of other diagnoses	
Microbiologic ^b	1. Positive culture results from at least two separate expectorated sputum samples. If the results are nondiagnostic, consider repeat sputum AFB smears and cultures or 2. Positive culture results from at least one bronchial wash or lavage or 3. Transbronchial or other lung biopsy with mycobacterial histologic features (granulomatous inflammation or AFB) and positive culture for NTM or biopsy showing mycobacterial histologic features (granulomatous inflammation or AFB) and one or more sputum or bronchial washings that are culture positive for NTM	

Source: Official ATS/IDSA statement [4].

Abbreviation: AFB, acid-fast bacilli; NTM, Nontuberculous mycobacteria.

^aExpert consultation should be obtained when NTM are recovered that are either infrequently encountered or that usually represent environmental contamination. Patients who are suspected of having NTM pulmonary disease but do not meet the diagnostic criteria should be followed until the diagnosis is firmly established or excluded. Making the diagnosis of NTM pulmonary disease does not per se, necessitate the institution of therapy, which is a decision based on the potential risks and benefits of therapy for individual patients.

^bWhen 2 positive cultures are obtained, the isolates should be the same NTM species (or subspecies in the case of *M. abscessus*) in order to meet disease criteria.