

Operational Guidance for Position Statement 17 ID 07:

Standardized Case Definition for Extrapulmonary Nontuberculous Mycobacteria Infections

Submission Date: April 28, 2017**Committee:** [Infectious Disease](#)

This document provides supplementary information for the proposed extrapulmonary nontuberculous Mycobacteria (NTM) infection standardized case definition. The following pages contain guidance meant to help interested counties implement the case definition and put into practice NTM surveillance.

Guidance A: Common Symptomatology of Extrapulmonary NTM Infections

Cervical lymphadenitis is the most common form of NTM disease in children less than 5 years of age and typically presents as unilateral, nontender lymphadenitis. Nodes can rapidly enlarge and rupture, forming sinus tracts that chronically drain.

Disseminated disease often presents with nonspecific symptoms such as fever, night sweats, and weight loss.

Skin and soft tissue NTM infections can present as localized drainage or abscess formation at the site of puncture wounds or open traumatic injuries.

Guidance B: Oregon NTM Surveillance and Outbreak Data

Oregon required mandatory NTM reporting since January 1, 2014. The case definition used is similar to the one proposed in the position statement submitted March 9, 2017. Oregon clinical laboratories send NTM isolates to reference laboratories for final species determination. Therefore almost all cases are confirmed and rarely maintain presumptive status. Descriptive characteristics for cases from beginning of mandatory reporting through February 28, 2017 are outlined here.

Of 127 confirmed extrapulmonary NTM cases (1 case per 100,000 person-years), 52% were female. Although median age was 49 years (range: 1 to 92 years), 27 cases occurred among children less than 5 years of age (3.5 cases per 100,000 person-years). Commonly identified species included *Mycobacterium avium* complex (45%), *M. abscessus* and *chelonae* species (23%), and *M. fortuitum* (17%). Reported exposures and risks included potting soil (31%), immunocompromised status (30%), surgery (26%), infusions (19%), and trauma (18%). Wounds or abscesses were reported in 69% of case-patients, lymphadenitis in 30%. Thirty-one percent were hospitalized; 14% were septic; and one died. The surveillance system identified NTM cases in three clusters, related in time, place, and mycobacterial species. Subsequent investigation identified common exposures that led to public health action. Four cases at three hospitals were associated with artificial joints and a common operating room contaminating source; two cases were associated with use of nonsterile tattoo diluent at a single facility; and two cases were associated with abdominoplasty at a single facility.

Guidance C: NTM Suspect Case Definition for Outbreak Investigations

In an outbreak investigation, a suspect case definition might be useful because laboratory results might be delayed or missing for some affected patients. Investigators most likely would identify suspect cases by case finding after identifying a likely environmental or iatrogenic source.

Suspect Case Definition:

A patient with compatible signs and symptoms similar to and epidemiologically linked with a confirmed or probable case, and culture or molecular testing results for Mycobacteria are either pending or were not obtained. Epidemiologic linkage occurs when a suspect case has exposure to the same likely environmental or iatrogenic source as the confirmed or probable case within the organism's incubation period.

From twelve weeks to two weeks before symptom onset is a reasonable working incubation period. However, NTM species' incubation periods are often poorly defined and likely vary drastically by species. Therefore, you may tailor the incubation period according to the outbreak species after consultation with experts.

Potential environmental or iatrogenic sources include, but are not limited to:

- Surgical or injection procedures
- Intravenous lines or catheters
- Contaminated medical devices
- Exposures involving water or soil infiltrating cutaneous tissues
- Nail salon whirlpool footbaths
- Fish tank exposure or fish handling
- Tattoo exposure

Also see Guidance D for additional sources.

Guidance D. Proposed Epidemiologic Information to Collect in an NTM Outbreak

- Environmental exposures likely to contribute to risk of illness 12 weeks to 2 weeks[†] from illness onset:
 - o Healthcare exposures
 - Hospitalization
 - Surgery
 - Injections or infusions
 - Hemodialysis
 - Dental procedures*
 - Complementary and alternative healthcare exposure, including acupuncture
 - o Injection drug use
 - o Nail salon
 - o Hot tub or spa
 - o Tattoo
 - o Fish tank or handling fish
 - o Potting soil
 - o Trauma
- Occupation
- Travel history from past 1 year
 - o Outside of state of residence
 - o Outside of the United States
 - Healthcare exposure outside of the United States
- At the time of initial report, potential association with other cases
- Source of data (medical chart, patient or proxy, provider)

[†] Longer incubations are possible, sometimes spanning years.

*Because outbreaks of pediatric NTM lymphadenitis have been reported following dental procedures, NTM reports associated with lymphadenitis merit investigation.

Peralta G, Tobin-D'Andgelo M, Parham A, Edison L, Lorentzson, Smith C. et al. Notes from the Field: *Mycobacterium abscessus* infections among patients of a pediatric dentistry practice—Georgia, 2015. *MMWR Morb Mortal Wkly Rep.* 2016; 65:355-6.

Guidance E: Resources for NTM Reporting Implementation

The Oregon Health Authority's (OHA) NTM [investigative guidelines](#) and [case report forms](#) are available online. OHA's investigative guidelines call on laboratories "to report all test results indicative of and specific for extrapulmonary nontuberculous mycobacteria (NTM) within one working day."

Tennessee Department of Health's (TDH) Detailed [Laboratory Guidance](#) is also available online. In it, TDH calls for reporting "Any AFB smear, culture, HPLC, DNA probe or nucleic acid amplification test (NAAT) from any non-pulmonary site indicating presence of acid-fast bacilli. All specimens, except respiratory."

States might consider requesting laboratories to forward isolates to their state public health laboratory. Molecular typing of isolates is especially useful in an outbreak situation, and the clinical laboratory might discard isolates before the outbreak is detected.