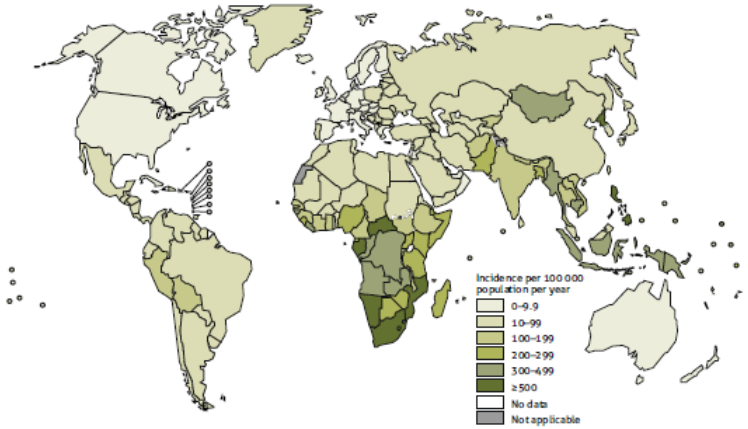


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# NTCA and MDH Guidelines for Respiratory Isolation and Restrictions to Reduce Transmission of Pulmonary Tuberculosis in Community Settings

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# Roadmap and Take Home Points

- A little background and history:
  - Prior to NTCA guidelines, there were no national level guidelines on community isolation for people with TB

- What makes public health guidelines unique?
  - Responsibilities to the community/public health AND responsibilities to the patient
  - Rights-based limitations to public health power

- Guidelines : Balanced group of clinicians, nurses, epidemiologists, TB survivors
  - Evidence: Sputum examination does not correlate reliably with infectiousness after treatment initiation.
  - Evidence: Treatment rapidly renders a person non-infectious
  - Evidence: Low certainty that isolation reduces TB incidence, mortality
  - Evidence: Moderate certainty that isolation worsens mental health, stigma, finances

- Guideline recommendations: Isolation can be considered balancing community and patient well-being. Most people have low likelihood of infectiousness after at least five days of treatment.

# Guidelines and Commentary: Clinical Infectious Diseases Available as Advance Articles

NTCA Guidelines:
https://academic.oup.com/cid/article-lookup/doi/10.1093/cid/ciae199

https://tinyurl.com/NTCAisolation

# Table 1: Summary of the Recommendations

**Table 1. Recommendations for Community-Based Respiratory Isolation and Restriction for Persons With Tuberculosis**

| | |
|---|---|
| Recommendation 1: Goals of RIR | 1.1. The decision to recommend TB RIR should consider the potential benefits and harm for both the community and the PWTB. |
| Recommendation 2: Defining RIR (Table 2) | 2.1. RIR in community settings should be conceptualized as a spectrum of tailored restrictions that are individualized for specific circumstances (Table 2). |
| Recommendation 3: Determining infectiousness and transmission risk (Figure 1) | 3.1. Prior to effective[a] ATT initiation, PWTB with higher respiratory bacterial burden (ie, sputum smear and/or NAAT positivity, cavitation on chest imaging) may be considered as relatively more infectious than those with lower bacterial burden, with individual variability.<br>3.2. PWTB on less than 5 days of effective ATT should be considered relatively more infectious than those on longer durations of effective[a] therapy.<br>3.3. PWTB on effective[a] ATT for at least 5 days should be considered noninfectious or as having a low likelihood of infectiousness, regardless of sputum bacteriologic status during ongoing ATT (ie, smear microscopy or culture status), with certain exceptions.[b]<br>3.4. Overall risk of transmission to others should consider both a PWTB's infectiousness, as well as other factors including the environment of potential exposures, durations of exposure, and biological susceptibility of contacts. |
| Recommendation 4: Determining RIR (Table 3) | 4.1. RIR is not recommended for persons with noninfectious forms of TB (ie, localized extrapulmonary TB without pulmonary involvement, as confirmed by sputum bacteriologic studies and/or chest imaging).<br>4.2. People with pulmonary TB on effective[a] ATT and a low likelihood of infectiousness should not have restrictions in most circumstances (ie, RIR should be removed, if present),[b] with individual exceptions for situations involving higher-risk community settings and populations (eg, children <5, immunosuppressed individuals).<br>4.3. Community-based RIR may be considered for PWTB who have higher infectious potential in which there is judged to be higher risk of transmission to the community. |
| Recommendation 5: Determining level of RIR (Table 3) | 5.1. When community-based RIR is indicated for a PWTB, a moderate or midlevel range of RIR (Table 2) should be considered appropriate in most circumstances, with individual exceptions.<br>5.2. Specific RIR levels (eg, low, moderate, or extensive; Table 2) and duration for PWTB should be reassessed routinely (at least weekly) and may be modified based on individual considerations or changing circumstances.<br>5.3. When RIR is implemented, support should be provided to patients to mitigate anticipated and experienced harms. |

# Invited Commentary: Drs Caitlin Reed and Neela Goswami

JOURNAL ARTICLE ACCEPTED MANUSCRIPT

## Duration of Effective Tuberculosis Treatment, not Acid-Fast Bacilli (AFB) Smear Status, as the Determinant for Deisolation in Community Settings FREE

Neela Goswami, MD, MPH, Caitlin Reed, MD, MPH

*Clinical Infectious Diseases*, ciae198, https://doi.org/10.1093/cid/ciae198

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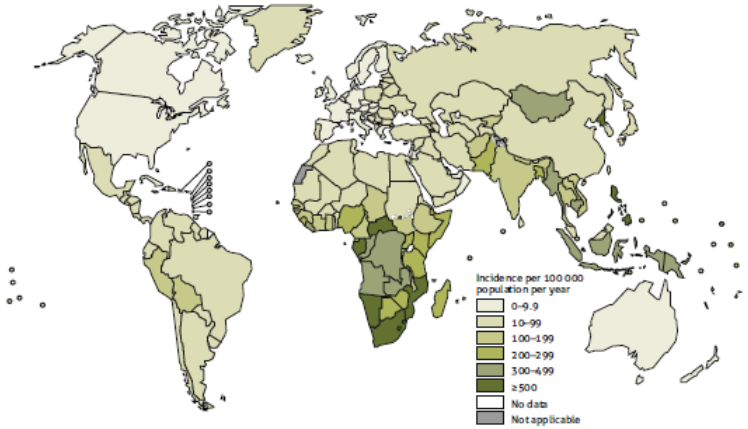
https://tinyurl.com/IsolationCommentary

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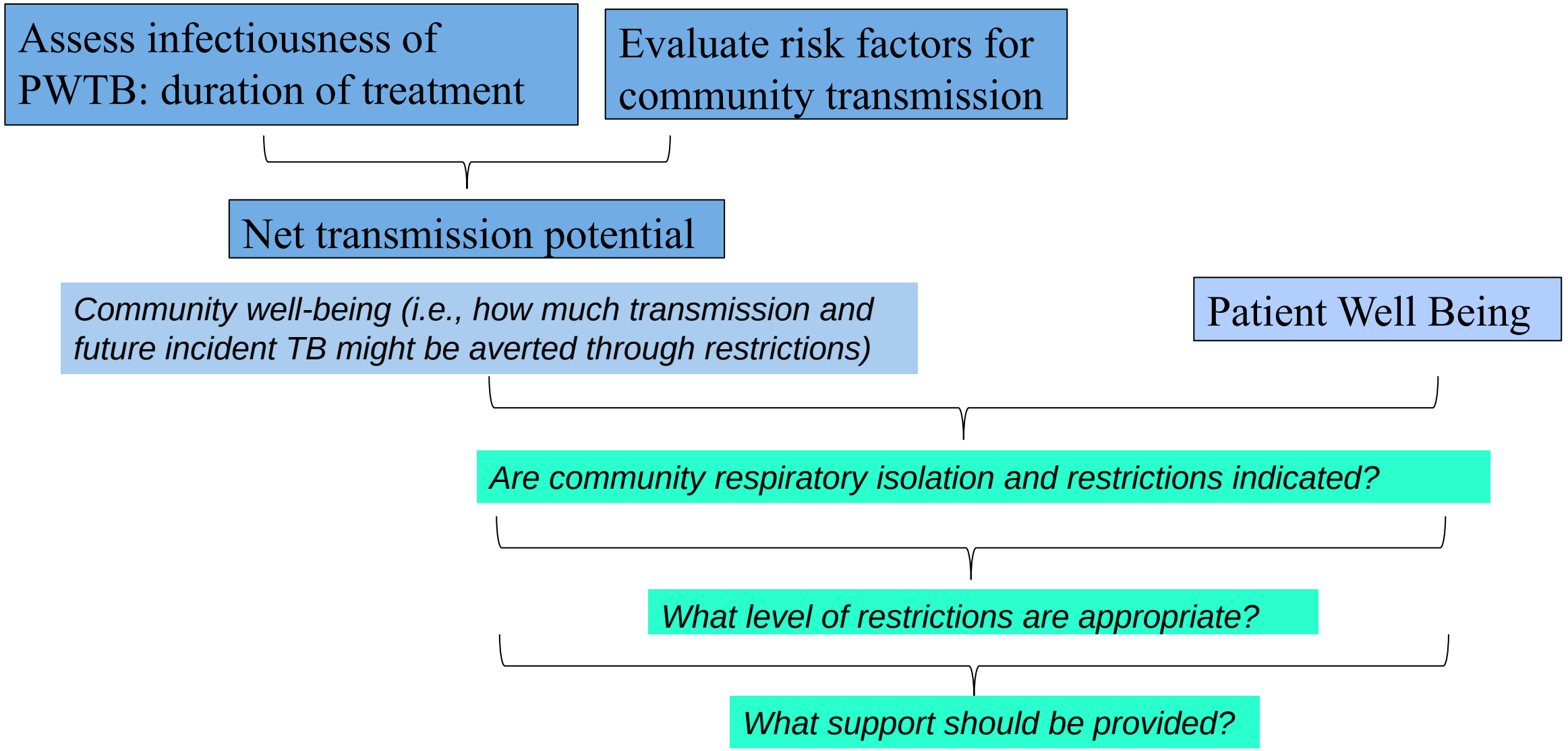
# Implementing Maryland/NTCA guidelines

# Implementing NTCA guidelines



# Recommendation 1: Goals of respiratory isolation and restrictions

1.1: The decision to recommend TB respiratory isolation and restriction (RIR) should **consider the potential benefits and harm** for both the **community and the PWTB.**

- Formalizes the ethical and legal principle that decisions about RIR must consider both:
  - Individual Well Being: Duties as a health care professional to maximize health of the patient (“Do no harm”)
  - Community Well Being: Responsibilities as a public health professional to minimize transmission and negative health outcomes for others

# Zooming in on Recommendation 1

Community Benefits (based on averting transmission)

1.*Is the PWTB infectious?*

- *Pre-treatment bacterial burden*
- *Duration of treatment*

2.*If infectious, is there significant risk of transmission in the community?*

3.*Will isolation meaningfully prevent transmission and improve population outcomes*

Impact on patient:

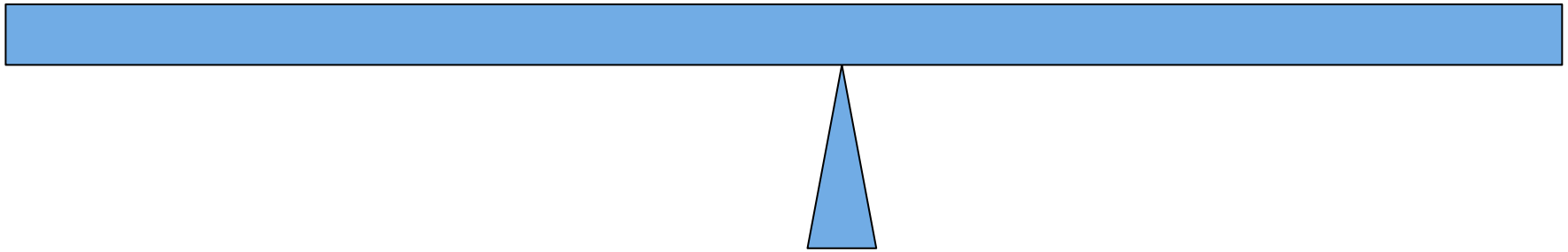
1.Mental Health

2.Financial/Employment

3.Food

4.Housing

5.Social/Stigma



# Tools in construction

- MDH Guidelines
- Decision-support tool
- Quick reference tables
- Local HD resources (templates for documentation)

# CTBCP Recommended Framework for Individualized Decisions on Community-based Respiratory Isolation and Restrictions

| TB Treatment Status | Pre-treatment bacterial burden in the respiratory tract | Level of infectiousness | Isolation indicated | Level of isolation/restriction |
|---|---|---|---|---|
| Pre-treatment | high | highest | yes | extensive |
| Pre-treatment | low | moderate | yes | moderate or extensive |
| Treatment ≤ 5 days | high | moderate | yes | moderate |
| Treatment ≤ 5 days | low | moderate | yes | moderate |
| Treatment > 5 days | high | low** | Individualized* | none or moderate |
| Treatment > 5 days | low | lowest | no | none |
| Extrapulmonary TB | N/A | None | No | None |

# Quick Reference Guide

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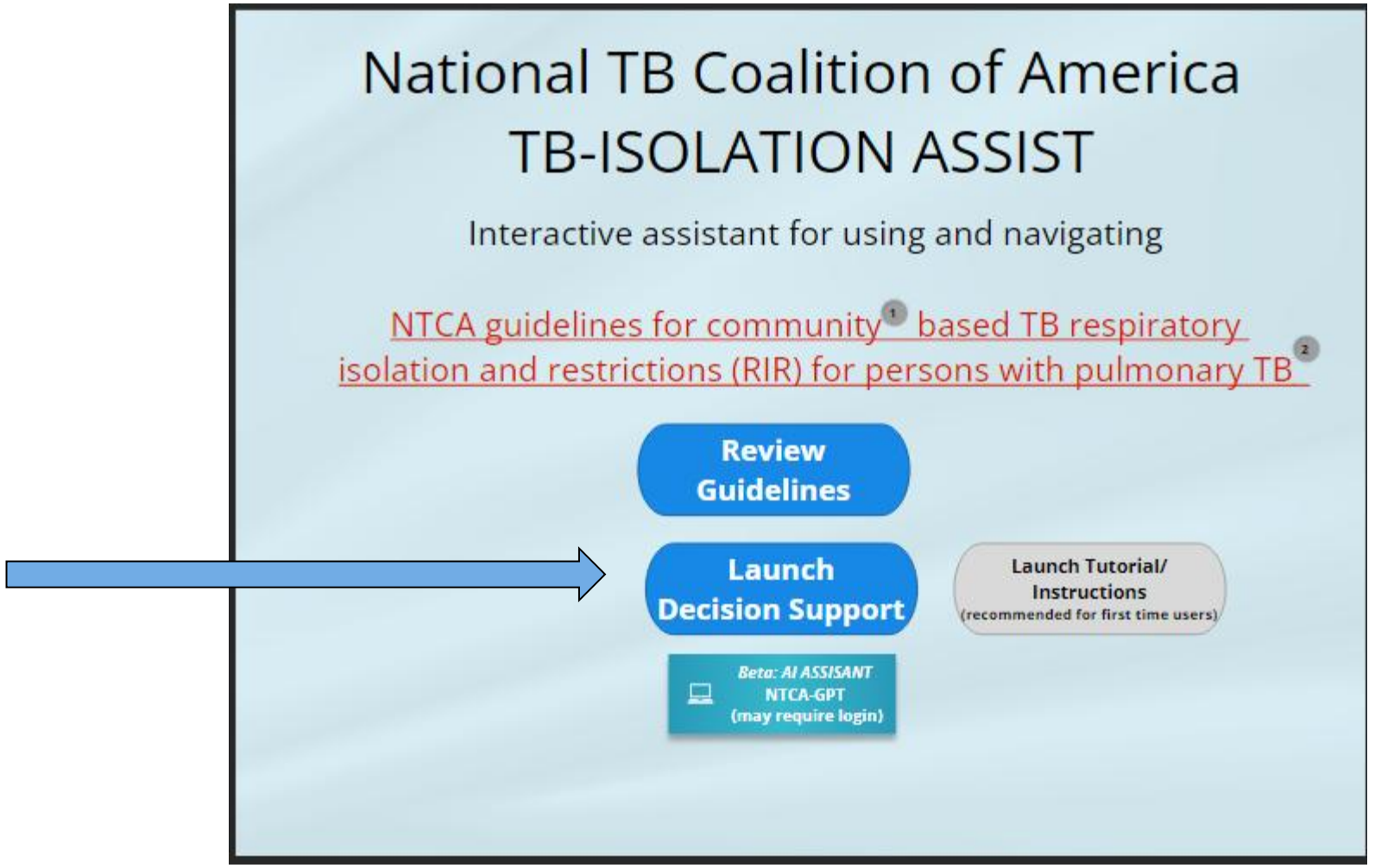
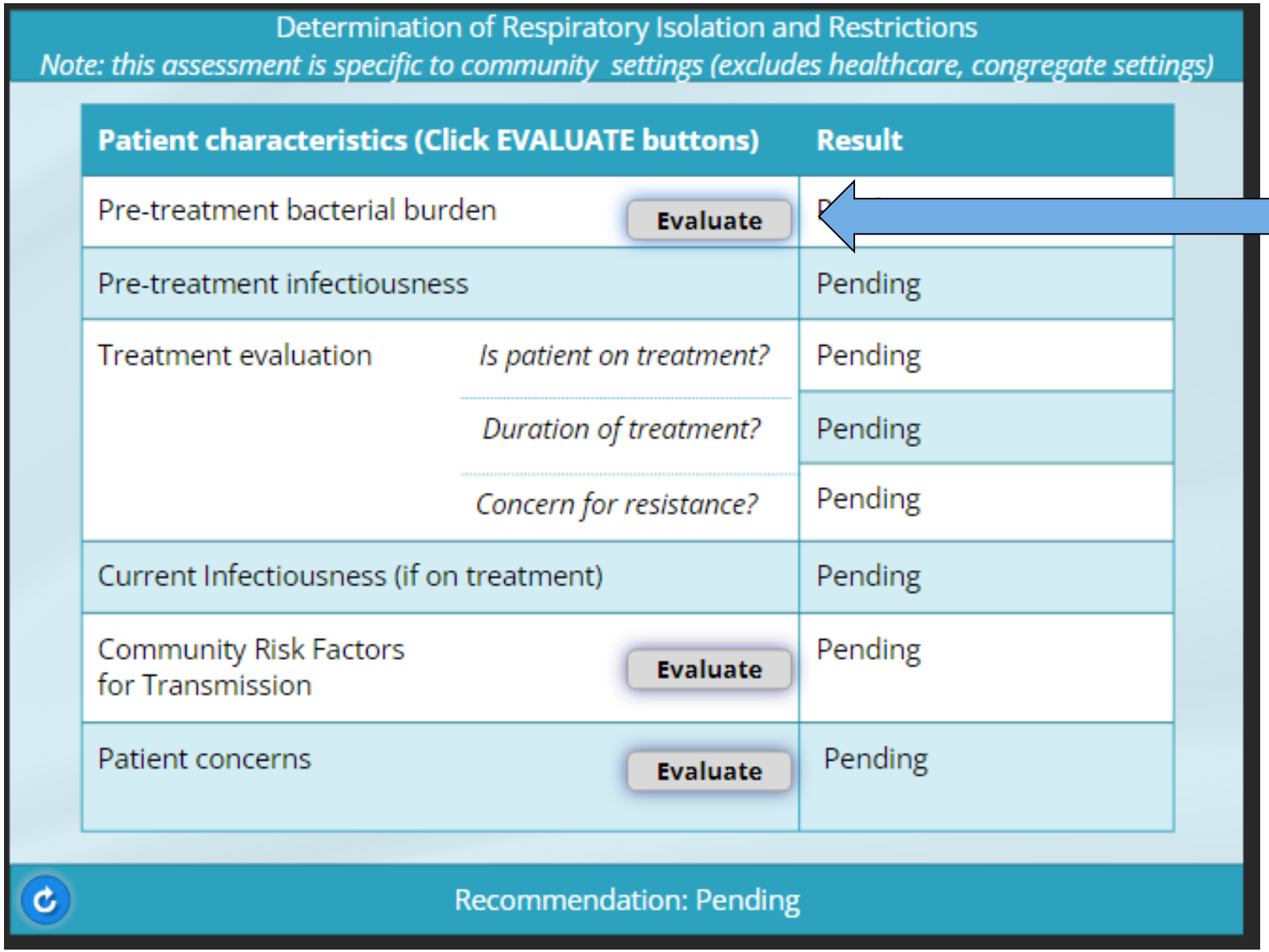
| Patient Characteristics | MDH Recommendations | Added Considerations | Patient Considerations |
|---|---|---|---|
| **Extrapulmonary Only Normal CXR** | No Respiratory Isolation or Restrictions | Ensure evaluation for TB of respiratory tract with chest imaging and sputum bacteriologic testing | Evaluate weekly<br>1.Assess Financial impact and support as resources allow<br>2.Assess Housing<br>3.Assess Mental Health and refer for additional counseling/support<br>4.Assess Food security<br><br>Tailor restrictions:<br>1.Consider Moderate restrictions in most instances (allow outdoor activities that do not involve close, prolonged contact)<br>2.Evaluate employment setting and make tailored recommendation) |
| **Children <10 with intrathoracic TB** | No isolation except for older children and adolescents with adult-type disease | Individuals with sputum bacteriologic tests that are positive may be considered as having adult-type disease | |
| **Low pre-treatment infectiousness (e.g., sputum smear-negative & non-cavitary) + GXP available (Rifampin S)** | All settings and contacts:<br>RIR through at least 5 days of verified treatment* | Request GXP. See below if not available. | |
| **Moderate or High pre-treatment infectiousness (e.g., sputum smear-positive OR cavitation or extensive/multilobar) + GXP available (Rifampin S)** | Lower risk settings and contacts<br>RIR through 5-10 days of verified treatment*<br><br>Higher risk settings and contacts[b]:<br>RIR through 10-14 days of verified treatment, and documented clinical response (symptom improvement) and/or microbiologic response (reducing sputum smear grade)* | 1.Request GXP. See below if not available.<br>2.If High pre-treatment infectiousness (sm+ and cavitation) with high risk setting (e.g., vulnerable population), request MDDR to verify INH S; Consider HPMZ or high dose rifamycin to improve EBA of first line therapy | |
| **GXP unavailable** | Low bacterial burden and Lower Risk Settings: 10-14 days of verified treatment and clinical improvement*<br><br>High bacterial burden OR Higher Risk Settings[b]: At least 14 days of verified treatment* and clinical improvement and microbiologic response (reducing smear grade) | 1.Request GXP and/or MDDR, particularly for high bacterial burden or higher risk settings<br>2.Collect weekly sputum x 3 to evaluate microbiologic response to assess appropriateness of treatment | |
| **Rifampin Resistant** | Minimum 14 days of laboratory confirmed effective therapy + clinical improvement, and demonstrated microbiologic response (reduced smear grade or increasing time to culture positivity on serial testing) | 1.Request MDDR and phenotypic DST<br>2.Effective treatment is defined based on microbiological testing. Emerging data suggests BPaL/M reduces infectiousness rapidly, but data is limited.<br>3.For higher risk settings and contacts, a higher degree of certainty of treatment effectiveness (DST, 14-28 days of therapy, micro/clinical response) may be considered | Higher risk for negative patient impact. Evaluate as above, and engage with MDH and local social work or patient advocacy services to support patients. |

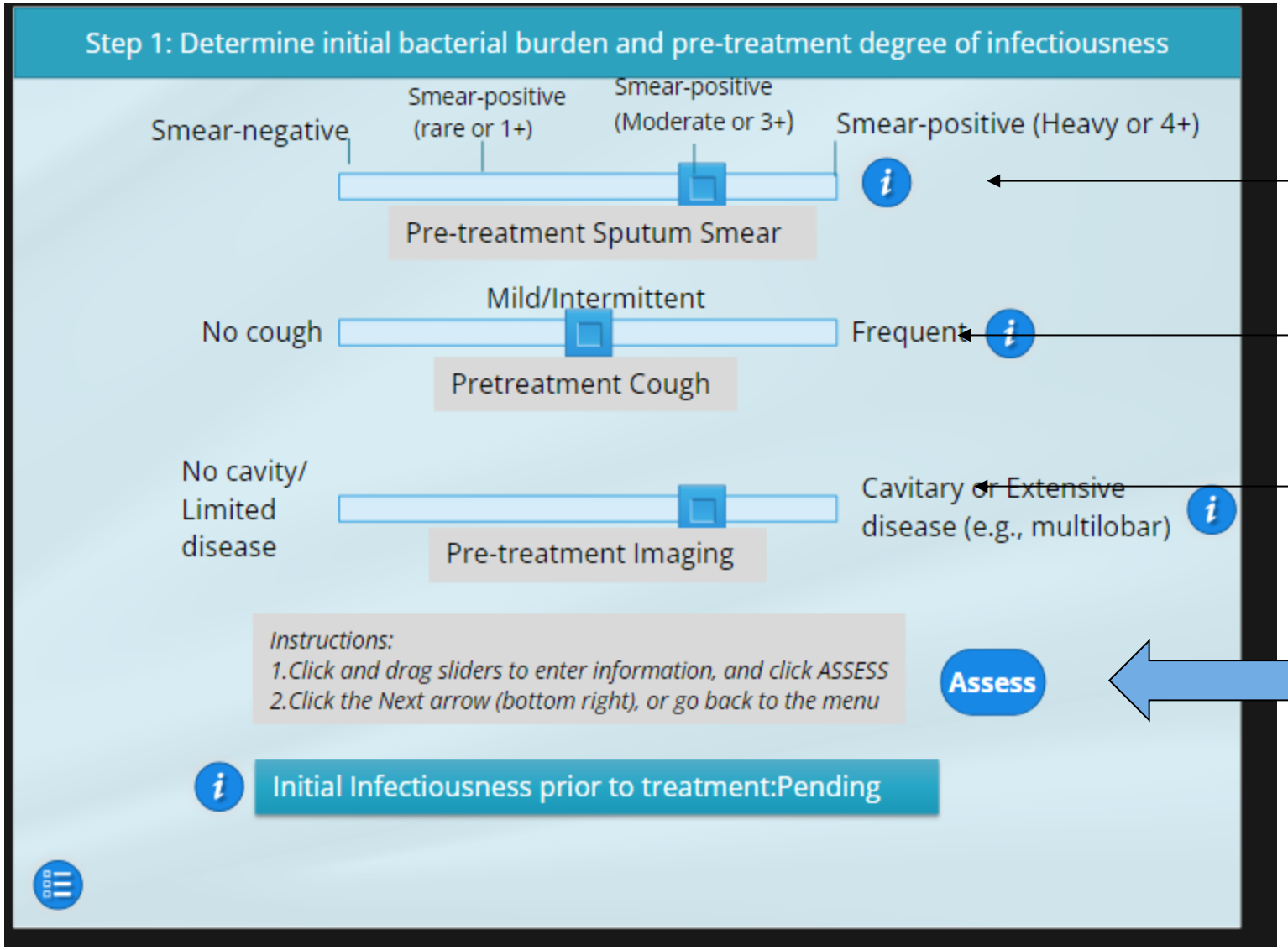
# Using TB-Isolation Assist tool: tinyurl.com/tbisolationassist



# Stepwise assessment



# Step 1: Assess the bacterial burden to determine individual infectiousness




Smear

Cough

Cavitation

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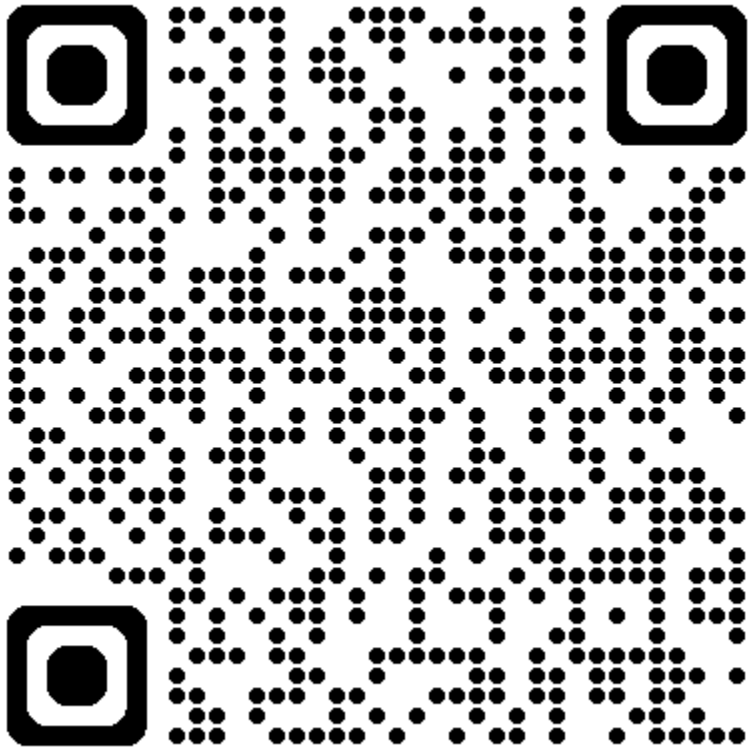
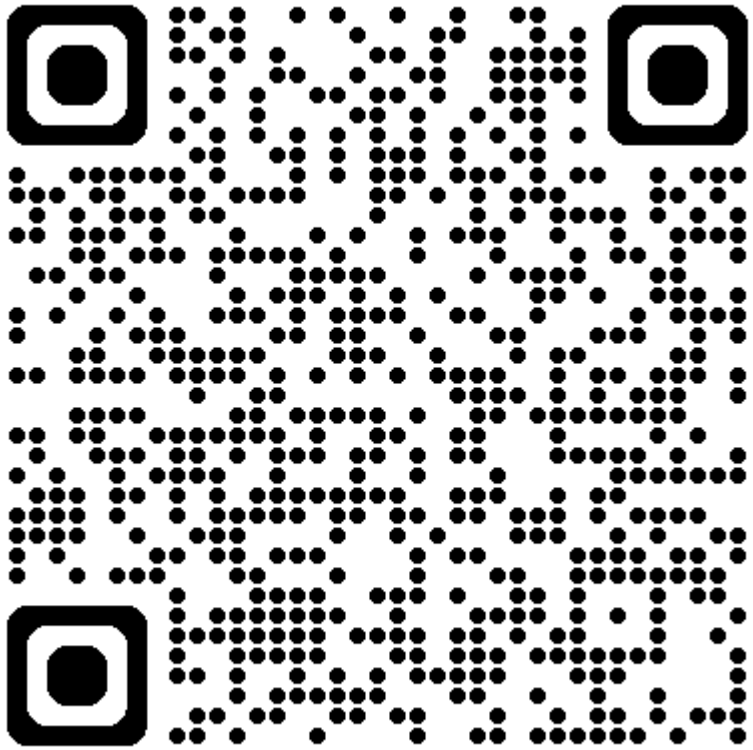
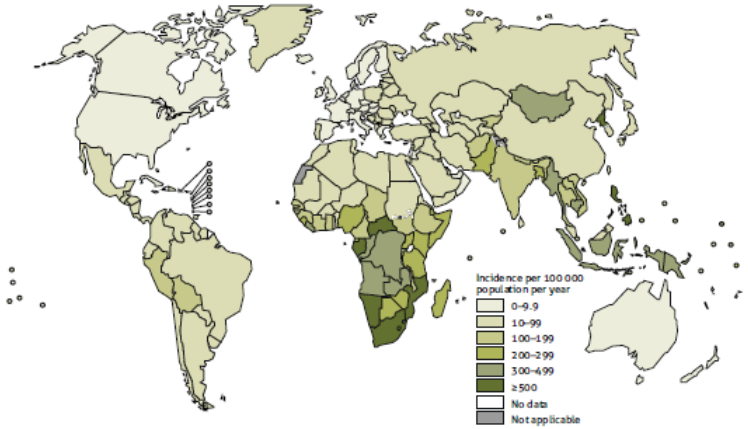
# Additional manuscripts



Determinants of Infectiousness



Historical Perspective

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# Implementation: program and nursing perspective