

Table 2. TB Program Performance Indicators Proposed for all High Incidence Populations in Canada

Domain	Indicator group	Priority	Potential Indicators (from discussion and/or referenced documents)	Discussion Notes		
				Additional Stratification (beyond age & sex)	Rationale	Extra Notes
Lab Reporting	Genotyping		<p>Heffernan & Long (2018) - <i>"Proportion of culture positive cases with genotyping"</i>.</p> <p>USA CDC (2015) - <i>"For TB patients with a positive culture result, the proportion who have a MTBC genotyping result reported"</i></p>		<p>Genotyping can be a useful tool for contact investigation in Indigenous communities – can help identify reactivation vs new infection, and help identify imported strains; can support collaboration and improve public health response.</p>	<p>Genotyping needs to be improved – Does not meet everyone's needs, and only certain communities have access. May be aspirational for urban and foreign-born populations – could potentially focus on Canadian born populations.</p> <p>Note: While data are collected, the "proportion of cases with genotyping" is not currently consistently calculated or used as a performance indicator. This could be an easy KPI.</p>
Case Management and Treatment	Timely Treatment Initiation		<p>Heffernan/Long (2018) – <i>"Proportion of smear-positive pulmonary cases starting treatment within 72 hours of NAAT report"</i>;</p> <p>PHN 2012, Fanning & Orr (2010) - <i>"Proportion of cases started on anti-TB drugs within 48 hours of diagnosis"</i></p> <p>USA CDC (2015) - <i>"For TB patients with positive AFB sputum smear results, the proportion who initiated treatment within 7 days of specimen collection"</i></p>		<p>Early treatment initiation is critical (even more important than the specific type of treatment). Earlier treatment translates to less infectivity, and less investment in contact tracing.</p>	<p>Need to define initiation (e.g. when prescription is written vs filled)</p>
	Re-treatment/Relapse		<p>Fanning & Orr (2010) - <i>"Proportion of cases per year that are relapsed (re-treatment cases)"</i>.</p> <p>PHN (2012) - <i>"Re-treatment rate within two years after the end of previous treatment in Canada"</i></p> <p>Australia Strat Plan (2015) - <i>"Proportion of cases initially treated in Australia who relapse within 5 years of treatment"</i></p>		<p>Information currently collected, but no timeline in reportable form.</p> <p>May be better to be called "re-treatment" – "relapse" is nice to have, but theoretically requires whole genome sequencing.</p> <p>Potential benchmark: clinical trials use 3.8%, other sources use 3%, could use 4%.</p>	

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Contacts	ADDED – High Priority Contact Examination		Percent of high priority contacts which have been assessed; Measure pediatrics (< 5 years old) or other high priority contacts in household over a period of time Need to standardize - define priority/close contact, infectious case, and assessment		Important at a programmatic/ regional level; Need to prioritize high risk and close contacts (household, close contact, immunocompromised, young children < 5 years old)	Potential benchmark: >90% high-risk priority; Dependent on initial information collected; Infectious cases should have a contact list established within a week; Challenges with applying social networking to genomic systems- relapse and reinfection in high incidence community- contacts for multiple source cases
	Contacts - LTBI Identification		FNIHB (2015) - <i>“Of the number of contacts screened for LTBI, the number with a new positive TST/IGRA or TST/IGRA conversion (i.e. number of newly identified LTBI)”</i>	Priority contacts (exposure vs risk, previously positive, women of child-bearing age/ pregnant)	Helps us understand burden of TB infection	Could be part of <i>LTBI Cascade</i> - How many contacts within last 2 years; Proportion of TB contacts that have been tested for LTBI; Total screened; total LTBI; proportion LTBI treatment initiated; completed, accurate adherence and timeframe; Could look at 90-90-90 or 80-80-80 for LTBI
	Contacts - LTBI Treatment Initiation		PHN (2012) - <i>“Proportion of contacts with a dx of LTBI who begin Tx”</i> FNIHB (2015) - <i>“Of the number of contacts accepting treatment for LTBI, the number who started treatment (without contraindications to INH or RMP)”</i> Heffernan/Long (2018) - <i>“Proportion of close contacts recommended Tx LTBI, who start Tx (<5yrs, and ≥5yrs of age)”</i> USA CDC (2015) - <i>“Proportion of contacts to sputum AFB smear-positive TB cases diagnosed with latent TB infection, who start treatment.”</i> WHO (2015) – <i>“Percentage of eligible people living with HIV and children aged under-five who are contacts of TB patients being treated for LTBI”</i>			Could use a measure for “was the prescription dispensed?” Challenge: LTBI is not always reportable

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Contacts (continued)	Contacts - LTBI Treatment Completion		<p>PHN (2012) – “Proportion of contacts beginning treatment for LTBI who complete treatment”</p> <p>FNIHB (2015) – “Of the number of contacts starting treatment of LTBI above (and without contraindications to INH or RMP), the number completing treatment at the time of reporting (irrespective of length of treatment)”</p> <p>Heffernan/Long (2018) – “Proportion of close contacts accepting TX LTBI who complete treatment (< 5 years of age and ≥ 5 years of age)”</p> <p>Fanning & Orr (2010) – “Percent completion of prophylaxis among those who accept”</p> <p>USA CDC (2015) – “Proportion of contacts to sputum AFB smear-positive TB cases who have started treatment for latent TB infection, who complete treatment.”</p> <p>Need to define completion. Definition depends on drugs used and length of time needs to be defined for each LTBI regimen</p>	Children <5 years old vs adults; High priority vs all contacts		Part of cascade of care/ contact investigation package: Proportion of priority contacts assessed, proportion offered LTBI treatment, proportion accepted treatment and proportion that completed treatment; timelines for providers to follow. Example: 3-, 6- and 9-month follow-ups; Certain contacts may require tighter timelines
Determinants	ADDED - Housing		Potential indicator “number of people per bedroom / household”		<p>Density/ventilation/ housing repair are all important considerations for TB risk.</p> <p>Need to consider both individual and community overcrowding and housing repairs</p>	<p>Bring housing to program – homes/shelters/hotels/ correctional facilities</p> <p>Canada TB guide; PC Satisfaction survey</p> <p>Need to understand overcrowding</p>