Tuberculosis and Migration
The Context

7.4 billion population
>1 billion migrants
250 million international
760 million internal
Urbanization: >50%
Feminization: 50%
Under 20 years of age: 33M

60m forced displacements
Comprised of:
38m IDPs due to conflict and violence (2014, IDMC)
22m IDPs due to natural disasters (2013, IDMC)

"International migration is set to grow even faster than in the past quarter-century" (Intelligence Council on Global Trends 2030, December 2012 issue)
250 Million International Migrants...

250 m Recorded Migrants

55 m Irregular Migrants (est.)

4 m Students

19.5 m Refugees

4.4 m Other

208.8 m Labor Migrants & Families

Sources: UNDESA, 2013; UNHCR, 2014; ILO, 2014; UNESCO, 2013; UNDP, 2009. Figures are latest available stock estimates for either 2013, 2012 or 2010 – totals for each group at the end of the most recent year for which figures have been produced.
The 2015 WHO TB report shows that the Millennium Development Goals (MDGs) have been achieved globally:

- Decrease in new TB and relapse TB cases by an average of 1.5% since 2000
- Decrease in number of TB cases (42% since 1990)
- Decrease in TB mortality rate (47% since 1990)

Between 2000 and 2014, TB treatment alone saved 35 million lives among HIV-negative people; TB treatment and antiretroviral therapy saved an additional 8 million lives among HIV-positive people.

Note: The MDG targets were to decrease incidence of TB cases by 2015 (MDG target 6c) and that prevalence and mortality rates should be halved compared with their levels in 1990.
Tuberculosis: a global issue

But globally, TB remains a global threat
- Approximately 6 million new cases of TB were reported in 2014
- About 1.5 million deaths due to TB (including 390,000 deaths among HIV-positive people and 190,000 from MDR-TB) in 2014
- TB ranks alongside HIV as a leading cause of death worldwide
- Of the 480,000 cases of multidrug-resistant TB (MDR-TB) estimated to have occurred in 2014, only about a quarter of these – 123,000 – were detected and reported

TB burden is concentrated in developing and low income countries / regions
- Around 58% of cases occur in the South-East Asia and Western Pacific regions
- The African Region has 28% of the world’s TB cases, but the most severe burden relative to population (281 incident cases per 100,000 population on average, more than double the global average of 133)
- Majority (74%) of TB/HIV cases were in the African Region
- India, Indonesia and China had the largest numbers of cases (23%, 10% and 10% of the global total, respectively)
Tuberculosis: a global issue

The largest migrant source countries overlap with the highest TB-burden countries; India, Russian Federation, Bangladesh, China, Pakistan, Philippines, Afghanistan, Indonesia. In low-burden and immigration countries, TB is often observed in foreign-born groups of population for both existing infection, or reactivation of latent TB.
The migration process and TB in individuals

There are risks involved with TB infection at ALL POINTS of the migration process.
The migration process and TB in individuals

Return to origin (for some)

Origin
-where the migrant began

Transit
-transportation type, duration, conditions, etc.

Destination
-where the migrant is going to

Risk factors for TB at origin:
1. Burden of TB in the community of origin
2. Health care system available to the community of origin
3. Access to care
4. Initial SES
5. Education/ knowledge/ beliefs
6. Political (in)stability
7. Conflict
The migration process and TB in individuals

Risk factors for TB during transit:

1. Physical travel conditions:
   - overcrowding
   - food shortages
   - violence
   - poor ventilation
2. Interrupted treatments/ no continuity of care
3. Potential distrust for public personnel; fear of getting caught, deportation, etc.
4. Women are particularly vulnerable - reproductive health, sexual health (ex. rape)
The migration process and TB in individuals

Risk factors for TB at destination:
1. Integration into social systems:
   - access to adequate housing, jobs, health care
2. Poor working conditions (overcrowding, poor ventilation, overexposure to small particles)
3. Low wages
4. No benefits-no insurance/sick leave
5. Delayed presentation for treatment
6. Poor nutrition
7. Language and cultural barriers
8. Stigma-related fears
The migration process and TB in individuals

Risk factors for TB during return:
1. Availability and accessibility of health care services
2. Stigma and family pressure
3. Distress/ psychological issues
Migration and health in receiving countries

1. There is an increased incidence of TB in foreign-born populations of low burden countries
   - a decrease in TB in the native born
   - an increase in the immigration of people from countries where TB is endemic

Countries of Origin of Foreign-Born Cases of Tuberculosis(TB) Diagnosed in the United States

<table>
<thead>
<tr>
<th>Country of Origin</th>
<th>Number of cases</th>
</tr>
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<tbody>
<tr>
<td>MEXICO</td>
<td>1598</td>
</tr>
<tr>
<td>PHILIPPINES</td>
<td>806</td>
</tr>
<tr>
<td>VIETNAM</td>
<td>526</td>
</tr>
<tr>
<td>INDIA</td>
<td>533</td>
</tr>
<tr>
<td>CHINA</td>
<td>340</td>
</tr>
<tr>
<td>HAITI</td>
<td>195</td>
</tr>
<tr>
<td>KOREA, REPUBLIC OF</td>
<td>158</td>
</tr>
<tr>
<td>GUATEMALA</td>
<td>212</td>
</tr>
<tr>
<td>PERU</td>
<td>94</td>
</tr>
<tr>
<td>EL SALVADOR</td>
<td>118</td>
</tr>
<tr>
<td>ETHIOPIA</td>
<td>167</td>
</tr>
<tr>
<td>HONDURAS</td>
<td>146</td>
</tr>
</tbody>
</table>

Table 1 Number of cases of tuberculosis notified to the World Health Organization and estimated percentage of total cases in the population of foreign birth in different countries

<table>
<thead>
<tr>
<th>Country</th>
<th>No. of cases reported in 2003</th>
<th>% cases in foreign-born population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>1013</td>
<td>80</td>
</tr>
<tr>
<td>Canada</td>
<td>1451</td>
<td>66</td>
</tr>
<tr>
<td>France</td>
<td>5740</td>
<td>41</td>
</tr>
<tr>
<td>Germany</td>
<td>6526</td>
<td>38</td>
</tr>
<tr>
<td>Israel</td>
<td>505</td>
<td>85</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1282</td>
<td>61</td>
</tr>
<tr>
<td>Norway</td>
<td>320</td>
<td>76</td>
</tr>
<tr>
<td>Switzerland</td>
<td>554</td>
<td>51</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>6400</td>
<td>64</td>
</tr>
<tr>
<td>United States of America</td>
<td>14861</td>
<td>51</td>
</tr>
</tbody>
</table>

Number of TB Cases in U.S.-born vs. Foreign-born Persons United States, 1993–2011*
Migration and health in receiving countries

2. An increase in the cost of medical care for foreign-born TB cases
   - lack of insurance?
   - TB resistance?
   - no continuity of care? - increased chance of TB resistance?
A clarification: migrant myths vs. reality

Table 1. Migrant health: Myths versus realities

<table>
<thead>
<tr>
<th>Common myths:</th>
<th>Reality:</th>
</tr>
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<tbody>
<tr>
<td>Migrants are carriers of diseases.</td>
<td>Most migrants are young, of the working-age group and travel when they feel healthy.</td>
</tr>
<tr>
<td>Migrants are a burden on the health system.</td>
<td>Conditions surrounding the migration process make migrants more vulnerable: i.e., the health profile of a migrant depends on the characteristics of the migration process.</td>
</tr>
<tr>
<td></td>
<td>Migrants often underutilize services and if they do, they often pay out of pocket.</td>
</tr>
</tbody>
</table>
South Africa’s temporary mining community: occupational conditions and TB

Context:
- many miners are migrant laborers from neighboring countries, especially from Lesotho, Mozambique, and Swaziland
- high HIV prevalence and subsequently, high TB prevalence
- high exposure to silica from the mines- occupational hazard
- high risk of drug resistance
- high rates of TB transmission

<table>
<thead>
<tr>
<th>South Africa</th>
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<thead>
<tr>
<th>High TB burden</th>
<th>High HIV burden</th>
<th>High MDR-TB burden</th>
</tr>
</thead>
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<table>
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<tr>
<th>Population 2011</th>
<th>50 million</th>
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</thead>
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<table>
<thead>
<tr>
<th>Estimates of TB burden * 2011</th>
<th>Number (thousands)</th>
<th>Rate (per 100 000 population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality (excludes HIV+TB)</td>
<td>25 (11–44)</td>
<td>49 (21–87)</td>
</tr>
<tr>
<td>Prevalence (includes HIV+TB)</td>
<td>390 (200–630)</td>
<td>768 (399–1 254)</td>
</tr>
<tr>
<td>Incidence (includes HIV+TB)</td>
<td>500 (410–600)</td>
<td>993 (819–1 182)</td>
</tr>
<tr>
<td>Incidence (HIV+TB only)</td>
<td>330 (270–390)</td>
<td>650 (536–774)</td>
</tr>
<tr>
<td>Case detection, all forms (%)</td>
<td>69 (58–83)</td>
<td></td>
</tr>
</tbody>
</table>
Addressing ALL underlying determinants

The legal, social, cultural, economic, behavioral, and communication barriers involved with the entire migration process put migrants at a greater risk of disease. In addition to strategies and programs in place to decrease global TB transmission, we also need to address other migration-influenced factors that affect health.
**TB Risk Factors:**

- Malnutrition
- Overcrowding
- Poor ventilation; higher disease susceptibility
- Lack of knowledge = less health-seeking behaviors

**Underlying determinants of health**

- Access to minimum essential food, which is nutritionally adequate and safe.
- Access to basic shelter or housing, safe and potable drinking water and adequate sanitation.
- Access to healthy occupational and environmental conditions.
- Education and access to information concerning the main health problems in the community, including methods of preventing and controlling them.

**Health care**

- Right of access to health facilities, goods and services on a non-discriminatory basis, with attention to vulnerable and marginalized groups.
- Equitable distribution of all health facilities, goods and services.
- Provision of essential drugs, as defined under the WHO Action Programme on Essential Drugs.
- Participation of affected populations in health-related decisions at the national and community levels.

**Availability, Accessibility, Acceptability and Quality**

- **Availability:** functioning public health and health facilities, goods, services and programmes in sufficient quantity.
- **Accessibility:** non-discrimination, physical accessibility, economic accessibility (affordability), information accessibility.
- **Acceptability:** respectful of medical ethics and culturally appropriate, sensitive to age and gender.
- **Quality:** scientifically and medically appropriate.
Screening pathway to increase detection

The patient-initiated pathway

Minimize barriers to health care access

- Access delay

Patient accessing health care

- Suspect identification delay

Identification of patient requiring TB test

- Diagnostic delay

Completing high quality diagnosis

The screening pathway

Active TB

- Improving knowledge & awareness

- Patient recognizing symptoms

Patient delay

Natural history delay

- Ensuring quality-assured diagnosis

Strengthening identification of patients with suspected TB
Overseas screening programmes

Components of the Stop TB strategy

1. Pursue high-quality DOTS expansion and enhancement
   a. Secure political commitment, with adequate and sustained financing
   b. Ensure early case detection, and diagnosis through quality-assured bacteriology
   c. Provide standardized treatment with supervision, and patient support
   d. Ensure effective drug supply and management
   e. Monitor and evaluate performance and impact

2. Address TB-HIV, MDR-TB, and the needs of poor and vulnerable populations
   • Scale-up collaborative TB/HIV activities
   • Scale-up prevention and management of multidrug-resistant TB (MDR-TB)
   • Address the needs of TB contacts, and of poor and vulnerable populations

3. Contribute to health system strengthening based on primary health care
   • Help improve health policies, human resource development, financing, supplies, service delivery and information
   • Strengthen infection control in health services, other congregate settings and households
   • Upgrade laboratory networks, and implement the Practical Approach to Lung Health (PAL)
   • Adapt successful approaches from other fields and sectors, and foster action on the social determinants of health

4. Engage all care providers
   • Involve all public, voluntary, corporate and private providers through Public-Private Mix (PPM) approaches
   • Promote use of the International Standards for Tuberculosis Care (ISTC)

5. Empower people with TB, and communities through partnership
   • Pursue advocacy, communication and social mobilization
   • Foster community participation in TB care, prevention and health promotion
   • Promote use of the Patients’ Charter for Tuberculosis Care

6. Enable and promote research
   • Conduct programme-based operational research
   • Advocate for and participate in research to develop new diagnostics, drugs and vaccines

Screening migrants can:
- ensure early case detection and access to treatment in vulnerable populations
- includes referral to relevant health systems as necessary
1. Screen migrants for active TB prior to resettlement and immigration.

2. Provide a comprehensive range of TB-related services, including physical examination, radiological investigation, the tuberculin skin test, sputum smear and culture, drug susceptibility testing (DST) and DOT, in line with partner government protocols.

3. Provide TB treatment either directly or through a referral system, in partnership with national tuberculosis programmes (NTPs).
Screening example: IOM’s Migration Health Assessment Programmes

COMPONENTS OF THE MIGRATION HEALTH ASSESSMENTS

Depending on the situation, the type of migrant and country-specific guidelines, a migration health assessment may include some or all of the following components:

- Review of medical and immunization history
- Detailed physical examination and mental health evaluation
- Clinical or laboratory investigations
  - Serological tests
  - Radiological screening (chest x-ray for tuberculosis)
  - Chemical analysis (blood/urine)
- Referral or consultation with a specialist
- Anti-fraud and corruption measures, including for services such as DNA testing and bio-sampling
- HIV/AIDS education and counselling, health education and voluntary testing
- Arranging for the administration of vaccinations and provision of or referral for directly observed treatment for some conditions (intestinal and other parasitic infestations, tuberculosis, malaria, sexually transmitted infections, antiretroviral administration and prevention of mother-to-child vertical transmission)
- Detailed documentation of findings, preparation of required immigration health forms and documents
- Confidential transfer of relevant information or documentation to appropriate immigration or public health authorities
- Ensuring fitness to travel
- Public health surveillance and outbreak management in camps, transit centres and other temporary settlements
- Provision of medical escorts/special services for travel and relocation
- Collection and analysis of data
# IOM Health Assessment Exams: How the data can be used to present TB detection

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Detection</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>Migrants applying for a visa to Australia</td>
<td>489 total cases/100,000 people</td>
<td>Plant et. al. (2005)</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Migrants applying for a visa to Australia</td>
<td>1,209 total cases/100,000 people</td>
<td>Plant et. al. (2005)</td>
</tr>
<tr>
<td>Thailand</td>
<td>US bound Hmong refugees</td>
<td>1,760 total cases/100,000 people; 9% of cases with MDR-TB</td>
<td>Oeltmann et.al. (2005)</td>
</tr>
</tbody>
</table>
IOM Pre-Migration TB Screening – Selected Outcomes

TB DETECTION IN IMMIGRANTS (PER 100,000 EXAMS), IOM, 2014

- Asia: 416
- Africa: 102
- Europe: 21
- Middle East: 0

TB DETECTION IN REFUGEES (PER 100,000 EXAMS), IOM, 2014

- Asia: 734
- Africa: 239
- Europe: 160
- Middle East: 5

http://publications.iom.int/books/migration-health-annual-review-2014