Impact of Stigma & Poor Health Care in (TB) High Burden Countries on US Immigrant Populations

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Motivation

- Improve understanding of typical access to (any) health care in TB High Burden Countries (HBC) to explain
  - Who are our “immigrants”, health status, expectations
  - Stigma: major areas of concern, impact
  - Why do poor global health systems matter to USA
“Immigrants” in the USA: Who Are They?

- Not a homogenous group

- Of those >age 25, 28% have bachelor’s degree from college (compared to 30% native born US)
- But another 30% have <high school degree/equivalent versus 10% native born US
“Immigrants” in the USA: Who Are They?

• Visitors
• Students
• Temporary workers
• Green card holders
• Legal, illegal, ‘overstayers’
• Refugees, asylum seekers/asylees
The Immigrant Visa Process

Submit a Petition

About Submitting a Petition
To apply for an immigrant visa, a foreign citizen must be sponsored by a U.S. citizen relative(s), U.S. lawful permanent resident, or by a prospective employer, and be the beneficiary of an approved petition. A first step in the process is the sponsor filing a petition with U.S. Citizenship and Immigration Services (USCIS).

A U.S. citizen can file an immigrant visa petition for:

Who’s Involved
U.S. Citizenship and Immigration Services
USCIS oversees immigration to the United States and approves (or denies) immigrant petitions and more.

Learn about USCIS
US Immigrant FACTS: Increasing Immigrant Populations


<table>
<thead>
<tr>
<th>Year</th>
<th>Size of Immigrant Population (millions)</th>
<th>Immigrant Share of Total U.S. Population (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>9.6</td>
<td>4.7</td>
</tr>
<tr>
<td>1980</td>
<td>14.1</td>
<td>6.2</td>
</tr>
<tr>
<td>1990</td>
<td>19.8</td>
<td>7.9</td>
</tr>
<tr>
<td>2000</td>
<td>31.1</td>
<td>11.1</td>
</tr>
<tr>
<td>2010</td>
<td>40</td>
<td>12.9</td>
</tr>
<tr>
<td>2013</td>
<td>41.3</td>
<td>13.1</td>
</tr>
</tbody>
</table>

Source: Migration Policy Institute tabulation of data from the U.S. Census

- Between 1 and 2 million people entered US as immigrants each year since 2000 (includes students and others on temporary visas as well as unauthorized)
Becoming more diverse
46% identify as Latino or Hispanic

Migration Policy Institute (MPI) Data Hub
http://migrationpolicy.org/programs/data-hub
### Table 2. Share of Immigrant and U.S.-Born Workers by Select Occupation, 2013

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Share of Foreign-Born Workers in Occupation (%)</th>
<th>Share of Native-Born Workers in Occupation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management, professional, and related</td>
<td>29.8</td>
<td>37.7</td>
</tr>
<tr>
<td>Service</td>
<td>25.1</td>
<td>17</td>
</tr>
<tr>
<td>Sales and office</td>
<td>17.1</td>
<td>25.6</td>
</tr>
<tr>
<td>Production, transportation, and material moving</td>
<td>15.2</td>
<td>11.6</td>
</tr>
<tr>
<td>Natural resources, construction, and maintenance</td>
<td>12.9</td>
<td>8.1</td>
</tr>
</tbody>
</table>

Source: Migration Policy Institute (MPI) tabulation of data from U.S. Census Bureau 2013 ACS.
Refugee status is a form of protection that may be granted to people who meet the definition of refugee and who are of special humanitarian concern to the United States. Refugees are generally people outside of their country who are unable or unwilling to return home because they fear serious harm.
- Examples: Sudanese or Ethiopians who have fled their homes and live in refugee camps in Kenya awaiting permanent placement; Syrians fleeing to Jordan to escape gassing, bombing

Asylum is a form of protection that may be granted to people who have been persecuted or fear persecution, while still in their home country.

Internally displaced persons (IDP) are unable to live in their homes or regions due to governmental policies – may end up being refugees/asylees
- Examples: Shan people living in eastern Burma, without legal status, years/decades?
Where do US-bound Refugees & Asylees Come From

- 70,000 admitted 2013
- Iraq, Burma, Bhutan primary sources since 2010
  - 64% of all refugees admitted since 2013
- Somalia, Cuba, Iran, DRB, Sudan, Eritrea, Ethiopia next most common
Walk in their shoes...Myanmar/Burma

• Case study of Thanda, lives in Shan State, 100 miles as the crow flies to Myanmar government health (though not for Shan) services

• ThuVan has cough, fever, weight loss and none of the traditional remedies are working.
Walk in their shoes... Myanmar/Burma

- There are no government health services: for delivering babies, no such thing as well-baby checks, no x-ray machines, no TB diagnostics/treatment

- There are local and international non-governmental organizations (NGOs) who may have general or specific (vertical) disease focus
  - International Rescue Committee (train, support local minimally trained ‘barefoot doctors’); MSF – well organized state of the art care – not in her area
Options in Shan State, Myanmar/Burma?

- Live with it till she self-heals or dies (50:50 proposition)
- Tries to cross the border to get to a Thai clinic
  - Good care for those in camps, very dangerous for others
- If diagnosis and treatment, for 6 months? What if MDR?
- What about her exposed/ill children?
The 22 countries shown on the map accounts for 80% of the tuberculosis cases in the world.
FIGURE 1.4
Fifteen countries with the highest estimated TB incidence rates per capita (all forms; grey bars) and corresponding incidence rates of HIV-positive TB cases (red bars), 2007

Swaziland
South Africa
Djibouti
Zimbabwe
Namibia
Botswana
Lesotho
Sierra Leone
Zambia
Cambodia
Mozambique
Togo
Côte d'Ivoire
Gabon
Congo

Incidence (per 100,000 population per year)
<table>
<thead>
<tr>
<th>TB</th>
<th>Malaria</th>
<th>infant mortal</th>
<th>&lt;5 mortality</th>
<th>HIV/AIDS</th>
<th>&lt;$1.25/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>Angola</td>
<td>Afghanistan</td>
<td>Afghanistan</td>
<td>Angola</td>
<td>Angola</td>
</tr>
<tr>
<td>Botswana</td>
<td>Benin</td>
<td>Angola</td>
<td>Angola</td>
<td>Botswana</td>
<td>Benin</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Burkina Faso</td>
<td>Burkina Faso</td>
<td>Benin</td>
<td>Brazil</td>
<td>Burkina Faso</td>
</tr>
<tr>
<td>Central African Republic</td>
<td>Burundi</td>
<td>Central African Republic</td>
<td>Burkin</td>
<td>Cameroon</td>
<td>Burundi</td>
</tr>
<tr>
<td>Congo</td>
<td>Congo (Dem. Republic of)</td>
<td>Chad</td>
<td>Burundi</td>
<td>China</td>
<td>Central African Republic</td>
</tr>
<tr>
<td>Congo (Dem. Republic of)</td>
<td>Cote d'Ivoire</td>
<td>Comoros</td>
<td>Cameroon</td>
<td>Cote d'Ivoire</td>
<td>Chad</td>
</tr>
<tr>
<td>Djibouti</td>
<td>Ethiopia</td>
<td>Congo</td>
<td>Central African Republic</td>
<td>Ethiopia</td>
<td>Comoros</td>
</tr>
<tr>
<td>Gabon</td>
<td>Ghana</td>
<td>Congo (Dem. Republic of)</td>
<td>Chad</td>
<td>Ghana</td>
<td>Congo</td>
</tr>
<tr>
<td>Kiribati</td>
<td>Guinea</td>
<td>Cote d'Ivoire</td>
<td>Congo</td>
<td>Indonesia</td>
<td>Congo (Dem. Republic of)</td>
</tr>
<tr>
<td>Lesotho</td>
<td>Indonesia</td>
<td>Ethiopia</td>
<td>Cote d'Ivoire</td>
<td>Lesotho</td>
<td>Haiti</td>
</tr>
<tr>
<td>Liberia</td>
<td>Kenya</td>
<td>Gambia</td>
<td>Equatorial Guinea</td>
<td>Malawi</td>
<td>Kenya</td>
</tr>
<tr>
<td>Marshall Islands</td>
<td>Liberia</td>
<td>Guinea-Bissau</td>
<td>Gambia</td>
<td>Mozambique</td>
<td>Lesotho</td>
</tr>
<tr>
<td>Mauritania</td>
<td>Malawi</td>
<td>Liberia</td>
<td>Guinea</td>
<td>Myanmar</td>
<td>Liberia</td>
</tr>
<tr>
<td>Mozambique</td>
<td>Mali</td>
<td>Malawi</td>
<td>Guinea-Bissau</td>
<td>Nigeria</td>
<td>Madagascar</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Mozambique</td>
<td>Mali</td>
<td>Mali</td>
<td>South Africa</td>
<td>Malawi</td>
</tr>
<tr>
<td>Namibia</td>
<td>Niger</td>
<td>Mozambique</td>
<td>Mauritania</td>
<td>Tanzania (United Rep. of)</td>
<td>Mali</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>Nigeria</td>
<td>Niger</td>
<td>Mozambique</td>
<td>Thailand</td>
<td>Mozambique</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>Papua New Guinea</td>
<td>Nigeria</td>
<td>Niger</td>
<td>Uganda</td>
<td>Niger</td>
</tr>
<tr>
<td>South Africa</td>
<td>South Sudan</td>
<td>Sudan</td>
<td>Rwanda</td>
<td>Nigeria</td>
<td>Ukraine</td>
</tr>
<tr>
<td>Swaziland</td>
<td>Sudan</td>
<td>Sierra Leone</td>
<td>Sierra Leone</td>
<td>United States of America</td>
<td>Rwanda</td>
</tr>
<tr>
<td>Timor Leste</td>
<td>Tanzania (United Rep. of)</td>
<td>Somalia</td>
<td>Somalia</td>
<td>Viet Nam</td>
<td>Sierra Leone</td>
</tr>
<tr>
<td>Zambia</td>
<td>Uganda</td>
<td>Tanzania (United Rep. of)</td>
<td>Swaziland</td>
<td>Zambia</td>
<td>Tanzania (United Rep. of)</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>Zambia</td>
<td>Zambia</td>
<td>Togo</td>
<td>Zimbabwe</td>
<td>Zambia</td>
</tr>
</tbody>
</table>

Shaded boxes indicate countries “most-affected” in at least 3 conditions.

http://kff.org/global-indicator/
## Snapshot of Key Health Care Services

<table>
<thead>
<tr>
<th>Country</th>
<th>MD/10,000 population</th>
<th>% Births Attended by HP</th>
<th>% &lt;1 year with DTP immunization</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>24</td>
<td>99%</td>
<td>95%</td>
</tr>
<tr>
<td>Philippines</td>
<td></td>
<td>73%</td>
<td>86%</td>
</tr>
<tr>
<td>Burma/Myanmar*</td>
<td>5</td>
<td>78%</td>
<td>85%</td>
</tr>
<tr>
<td>Uganda</td>
<td>1.2</td>
<td>58%</td>
<td>78%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>0.3</td>
<td>54%</td>
<td>76%</td>
</tr>
<tr>
<td>Mexico</td>
<td>20</td>
<td>100%</td>
<td>99%</td>
</tr>
<tr>
<td>Cuba</td>
<td></td>
<td></td>
<td>96%</td>
</tr>
<tr>
<td>Guatemala</td>
<td></td>
<td></td>
<td>96%</td>
</tr>
</tbody>
</table>
Motivation

• Improve understanding of typical access to (any) health care in TB High Burden Countries (HBC) to explain
  – Who are our “immigrants”, health status, expectations
  – Stigma: major areas of concern, impact
  – Why do poor global health systems matter to USA
    • Ebola, SARS, emerging pandemic influenza, MDR/XDR TB, importation of eliminated diseases: measles, polio
Case study: Phyo in Burma

• Phyo lives in a village 50 miles from the largest city, Mandalay. He has 3 small children and a pregnant wife. He has been having body sweats, chills, cough and has little appetite.

• He works every day in the local open pit mine earning ~1 USD per day, and is paid at the end of each day of work
  – Just enough to feed his family.

• First he seeks advice at the local drug shop, who sells him cough syrup and wants to sell him special “chest medicine” which he cannot afford

• 6 weeks later he goes to the local traditional healer – who requires him to return with a 4-week old female chicken, and a lock of hair from the person most likely to have put a curse on him (his closest neighbor)
Case study: Phyo in Burma

- After 3 months his health is failing and he borrows money to go to the closest government health facility.
- Requires a day to get to the clinic in a series of crowded vans (matatus), an overnight stay requiring additional money he does not have, to be at the clinic first thing, all day at the clinic awaiting his turn to be seen.
Case study: Phyo in Burma

• Having never seen a doctor/HCP before, Phyo is dismayed to learn that
  – Additional money is ‘required’ because the sputum microscopist is unable to make it to work that week due to transportation shortfalls
  – Once the sputum smear is done, the results will need to be relayed to the TB program so medications can start
  – He will have to return to clinic in a week to begin TB medications
What Are the Barriers to TB Control Globally?

Individual

• Basic understanding of germ-theory of disease, educational levels, ‘habit’ of seeking formal health care often lacking

• Access to health care -
  – Distance, transportation (therefore rural versus urban problems different)
  – Time off work = no money to buy food that day – very common
  – Money for diagnostic tests (even if TB treatment is “free”)

What Are the Barriers to TB Control Globally?

**Vertical programs within Government Health Systems**

- Primary care provider/system: None
- TB clinics
- Ante-natal clinics
- Immunization clinics
- Male circumcision clinics
- Malaria treatment/prevention clinics
- HIV/ART clinics
  - Testing and counseling separate
What Are the Barriers to TB Control Globally?

- **Structural/systems**
  - # Health care facilities per sq mile/pop
  - # trained HCW/facility to diagnose
  - # trained microscopists/x-ray/diagnostics
    - QA systems, ongoing training, turnover staff
  - Supply chain management – drugs and diagnostic reagents, equipment
  - Knowledgeable HCW to manage treatment
What Are the Barriers to TB Control Globally?

Disease-specific

• TB diagnostics
  – No culture - smear microscopy only
  – Lengthy process
  – Presence of drug-resistance?

• TB treatment –
  – Requires 6 months treatment
  – Multiple drugs, side effects
  – Emergence of drug resistance
  – Many countries require hospitalization for first 8 weeks
  – Food with treatment – often an issue

• TB prevention
  – Lack of infection control knowledge, practice
  – Low uptake of INH prevention (TLTBI/IPT)
Stigma and Other Barriers

- Studies in many HBC settings show people delay going to formal diagnostic settings for reasons that speak to stigma:
  - Health center staff speak down to them – peasants, no shoes, TB ‘suspect’ highly stigmatized, often with HIV
  - Local drug shops - know them, are like them, speak at their same level
  - Estranged from families, likely to have poor access to food they are accustomed to
### TABLE 1
VALUES COMPRISING SES QUARTILES FOR EACH SES INDICATOR

<table>
<thead>
<tr>
<th>SES Indicator</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crowding</td>
<td>≤ 0.43</td>
<td>0.44–0.59</td>
<td>0.60–0.70</td>
<td>≥ 0.71</td>
</tr>
<tr>
<td>Income¹</td>
<td>≥ $47,500</td>
<td>$35,000–$46,499</td>
<td>$27,500–$34,999</td>
<td>≤ $24,499</td>
</tr>
<tr>
<td>Poverty‡</td>
<td>≤ 3.7%</td>
<td>3.8–8.1%</td>
<td>8.2–16.8%</td>
<td>≥ 16.9%</td>
</tr>
<tr>
<td>Public Assistance¹</td>
<td>≤ 2.5%</td>
<td>2.6–5.3%</td>
<td>5.4–10.5%</td>
<td>≥ 10.6%</td>
</tr>
<tr>
<td>Unemployment¹</td>
<td>≤ 3.6%</td>
<td>3.7–5.2%</td>
<td>5.3–7.9%</td>
<td>≥ 8.0%</td>
</tr>
<tr>
<td>Education**</td>
<td>≥ 87.1%</td>
<td>78.4–87.0%</td>
<td>67.4–78.3%</td>
<td>≤ 67.3%</td>
</tr>
</tbody>
</table>

Cantwell, McKenna, McCray, Onorato; Am J Crit Care Med, 1016-1020; 1998
TB Among Immigrants

- TB is always more common among those of low socioeconomic groups
  - “TB is a social disease with serious medical consequences”
- Less access to primary care = increased time from symptoms of active TB, to treatment
  - More severe disease = cavitary, infectious
  - More spread in household and community
- Less access to care = less likelihood of treating latent TB infection
  - Reservoir of latent TB remains high
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Poor Global Health Systems: Threat to All

- Poor surveillance allows for global spread of emerging and re-emerging infectious diseases
  - Ebola, SARS, emerging pandemic influenza
FIGURE 2. Global examples of emerging and re-emerging infectious diseases
Poor Global Health Systems: Threat to All

• Emerging drug resistance (due to poor program quality & performance) to routine drugs threatens all
  – MDR/XDR TB

• Poor immunization programs spreads disease
  – Polio: Nigeria, Pakistan
  – Measles: USA
  – Diphtheria: Russia
Bottom line message

• “Immigrants”: a diverse population
• Refugees & asylsees commonly previous IDP, recent poor access to basic care, malnutrition, crowded & ‘informal’/temporary housing common
• Individually and nationally – competing priorities
• In the US, don’t know what they don’t know
  – Do they have well-integrated families?
  – Education level?
• Cultural, social context is everything
  – Gaining trust, understanding culture,