GLOBAL MIGRATION
and
EMERGING INFECTIOUS DISEASES

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INTERNATIONAL CONFERENCE ON EMERGING INFECTIOUS DISEASES
ATLANTA, 2002
THE CASE OF TUBERCULOSIS AND HIV

IS PUBLIC HEALTH FAILING MOBILE POPULATIONS?

INTERNATIONAL CONFERENCE ON EMERGING INFECTIOUS DISEASES
ATLANTA, 2002
...the case of Tuberculosis

- 1/3 world’s population is infected, with 3% increase of new cases/year
- 10% will develop active tuberculosis
- One active untreated TB will infect 10-15 persons/year
- 95% of new cases in the developing world
  - 10% increase in Africa due to co-infection with HIV
...the case of HIV

- 60 million infected since mid 80’s
- 40 million still living with HIV
- 800x increase risk for active TB if co-infection TB-HIV is present
- TB kills 15% of HIV infected persons
PUBLIC HEALTH and MOBILE POPULATIONS

• **TB in foreign-born**
  > The decrease in tuberculosis case rate among US-born people has been 3.5 times that of foreign-born people
    
    *(Sahly & al, J. Infect. Dis. 2001)*

  > CDC reported that foreign-born accounted for 46% of new US cases of TB in 2000

• **MDR-TB in countries of low prevalence**
  > In Australia: 90% of multi-resistant cases were born overseas
    

  > In Netherlands: 76% of drug resistance occurred in foreign-born patients
    

  > In Canada: up to 92% of MDR-TB is imported
    
IS PUBLIC HEALTH FAILING MOBILE POPULATIONS?
Population Mobility

- **Prevalence Gap**
  ...for Tuberculosis
  ...for HIV

- **Vulnerability**

- **Globalization**
  150 million live outside country of birth
  - 2.5% population
### ESTIMATED GLOBAL MOBILE POPULATIONS

- **Refugees /uprooted people**: 22 million (UNHCR 2002)
- **Undocumented Migrants**: 10 -15 million (ILO 2000)
- **International Travelers**: 698 million (WTO 2000)
- **Migrant Workers**: 70-80 million (ILO 2001)
- **Migrants Victims of Trafficking**: 0.7 million (IOM 2001)

**TOTAL**: ~ 800 million
PARAMETERS FOR PUBLIC HEALTH SCREENING OF MOBILE PEOPLE

• PRE-ARRIVAL
  » **INCIDENCE RATE** in country of origin
  » **CATEGORY** of applicants
  » **OCCUPATION** in receiving country
  » Expected **LENGTH OF STAY** in host country

• POST-ARRIVAL
TB Incidence per Category of Applicants
IOM Migrants in Year 2000
(per 100,000) (Preliminary data)

Global population:
Refugees: 55.3%
Migrants: 44.7%

n = 76270

Category of Applicants

Incidence / 100,000

Refugees: 260.78
Migrants: 381.35

45.83% 54.17%
HIV Incidence per Category of Applicants
IOM Migrants in Year 2000
(per 100 000) (Preliminary data)

Refugees: 55.3%
Migrants: 44.7%

Global population:
Refugees: 55.3%
Migrants: 44.7%

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Category of Applicants

Incidence / 100 000

- Refugees: 34.84%
- Migrants: 65.16%
TB Incidence by Region
IOM Migrants in Year 2000
(per 100 000) (Preliminary data)

<table>
<thead>
<tr>
<th>Region</th>
<th>Incidence / 100.000</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>619.5</td>
<td>22.0%</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>80.5</td>
<td>14.2%</td>
</tr>
<tr>
<td>South East Asia</td>
<td>1235.4</td>
<td>61.7%</td>
</tr>
<tr>
<td>South East Europe</td>
<td>37.1</td>
<td>2.1%</td>
</tr>
</tbody>
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n = 76270
HIV Incidence by Region
IOM Migrants in Year 2000
( per 100 000 ) (Preliminary data)

Region
Africa
Eastern Europe
South East Asia
South East Europe

Incidence/100,000
600
500
400
300
200
100
0

n = 45,894

510.73 (53.0%)
363.35 (34.9%)
32.5 (12.1%)
0 (0.0%)
TB CONTROL PROGRAM and MOBILE POPULATIONS

IT CAN BE DONE!

• Must include countries of origin
• Must link the phases of mobility
  – pre-departure (screening in countries of origin),
  – post-arrival (surveillance programs in receiving countries)
TB CONTROL PROGRAM and MOBILE POPULATIONS

• Must apply the common sense ABC’s of public health screening methods:
  – supervision of sputum collection
  – basic laboratory technology and skills (training)
  – consistent QA and QC systems
  – complete treatment under supervision (DOTS)
  – identification and treatment of latent tuberculosis
MOBILE POPULATIONS
and
EMERGING INFECTIOUS DISEASES

POLICY
RESEARCH
PUBLIC HEALTH GLOBALIZATION
Knowing is not enough; we must apply.
Willing is not enough; we must do.

(Goethe)
HIV and TB Distribution by Gender
IOM Migrants in Year 2000
(Preliminary data)

<table>
<thead>
<tr>
<th></th>
<th>HIV</th>
<th>TB</th>
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<tbody>
<tr>
<td>Female</td>
<td>59.1%</td>
<td>35.6%</td>
</tr>
<tr>
<td>Male</td>
<td>40.9%</td>
<td>65.4%</td>
</tr>
</tbody>
</table>

n = 76270

Global population:
Male: 50.2%
Female: 49.8%
HIV and TB Distribution With Average Age IOM Migrants in Year 2000 (Preliminary data)

Yn_{AVR} = 29.1yrs
LATENT TB INFECTION
IOM Migrants in Year 2001

• In HCMC

➢ 47.2% of PPD were positive (2001)
  » only 2% were offered prophylaxis