GLOBAL MIGRATION
and
EMERGING INFECTIOUS DISEASES

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ATLANTA, 2002
THE CASE OF TUBERCULOSIS AND HIV

IS PUBLIC HEALTH FAILING MOBILE POPULATIONS?

INTERNATIONAL CONFERENCE ON EMERGING INFECTIOUS DISEASES
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...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 *(Yuen & al, J. Clin. Microbiol. 1999)*
  > In Netherlands: 76% of drug resistance occurred in foreign-born patients *(van Weezenbeek, Int. J. Tuberc. Lung Dis. 1998)*
  > In Canada: up to 92% of MDR-TB is imported *(Granich, Public Health Rep. 1998)*
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

260.78

381.35

45.83%

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

Global population:
Refugees: 55.3%
Migrants: 44.7%

Refugees: 65.16% of 76270 = 50111
Migrants: 34.84% of 76270 = 26159

Incidence / 100 000

Category of Applicants

Refugees: 170
Migrants: 111.6
TB Incidence by Region
IOM Migrants in Year 2000
(per 100 000) (Preliminary data)

Region
- Africa: 619.5
- Eastern Europe: 80.5
- South East Asia: 1235.4
- South East Europe: 37.1

n = 76270

Incidence / 100,000
HIV Incidence by Region
IOM Migrants in Year 2000
(per 100,000) (Preliminary data)

- Africa: 510.73 (53.0%)
- Eastern Europe: 32.5 (12.1%)
- South East Asia: 363.35 (34.9%)
- South East Europe: 0 (0.0%)

n = 45,894
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)

Global population:
Male: 50.2%
Female: 49.8%

Cases

HIV

Female: 40.9%
Male: 59.1%

TB

Female: 35.6%
Male: 65.4%

Global population:
Male: 50.2%
Female: 49.8%

n = 76270
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