Immigrant and Refugee Health

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Outline

1. Epidemiology
2. Immigration Medical Screening
3. Noteworthy Infections
4. Current/future system in WHR
5. Mass Immigration Settlement Projects
Immigration to Canada

- "A country built on immigration"
  - 1 out of 5 Canadians are foreign-born
- Canada's commitment to immigration
  - Cultural, social, linguistic diversity
  - Fulfill humanitarian commitments
  - Economic considerations
- Unique health and social needs of some
  - The very sick and the very healthy
- Unequal access to health services
83% of all refugees seen (727 / 872)

Winnipeg (76.1%)
Central (11.2%)
Eastern (5.7%)
Western (2.9%)

95.6%

Current System
Immigration Process

- IOM, CIC (Health Management Branch)
- Immigrant Refugee Protection Act (2002)
- Immigration medical examination (IME):
  - History and physical, mental assessment
  - HIV test (>15 years; younger too if: received blood products, known HIV-positive mother, potential adoptees, or identified risk)
  - Urinalysis (≥ 5 years of age)
  - Chest x-ray (≥ 11 years or high-risk)
  - Syphilis serology (≥ 15 years)
  - Creatinine (for certain conditions)
- Goal: to protect Canadians, healthcare system

Immigration Process

- Permanent resident status may be refused if the IME indicates a disease or condition which:
  A. is a danger to public health or safety, OR (TB; mental illness)
  B. is likely to cause excessive demand on health or social services in Canada (HIV; cancer)
- Certain permanent resident applicants are exempt from excessive demand assessment
  - Convention refugees and dependent children
  - Family-sponsored spouses and dependent children

Tuberculosis Medical Surveillance

- Screening for active disease part of immigration medical (CXR, not TST)
  - Active TB, or positive syphilis
    - Denied entry until deemed non-infectious
  - Inactive TB: require medical surveillance (2%)
    - Not "enforced"
- Complex communication between CIC, TBC, HSC RSOPD, newcomers
Public Health

Public Health:
“The science and art of promoting health, preventing disease, prolonging life and improving quality of life through the organized efforts of society.” *

- Health Protection
- Health Surveillance
- Disease and Injury Prevention
- Population Health Assessment
- Health Promotion

* Public Health in England; The Report of the Committee of Inquiry into the Future Development of the Public Health

What is Missing?

Possible tests or procedures

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<td>Complete blood count (eosinophilia, anemia, etc.)</td>
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<td>Complete immunization series</td>
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<td>Hepatitis B and C serology</td>
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<td>Human immunodeficiency (HIV)</td>
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<tr>
<td>Malaria screening</td>
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<td>Pap smear (Pap test: cervical dysplasia or cancer)</td>
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<td>Pregnancy test</td>
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<td>Stool for ova and parasites</td>
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<td>Syphilis serology</td>
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<td>Tuberculin skin test (latent tuberculosis infection)</td>
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<tr>
<td>Urinalysis (screen for renal disease)</td>
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<td>Urethral culture (gonorrhea: sexually transmitted infections)</td>
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<td>Other “routine” recommended preventive health measures that would apply to the general Canadian population as well (e.g. diabetes, blood pressure, cholesterol screening, etc)</td>
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6-12 months old? ... and does it matter?

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Health Concerns

- Nutritional problems and food insecurity
  - Anaemia, iron, folate, B12 and vitamin A deficiency
  - Inadequate caloric intake
- Congenital, developmental problems
- Mental health concerns
- Infectious diseases
- Lack of access to medical care

Specific Health Concerns

- Hepatitis B infection
  - 10 –25% of immigrants from endemic areas
  - Cirrhosis, liver cancer
- Hepatitis C infection
  - 5 – 25% of immigrants from endemic areas
  - Cirrhosis, liver cancer
Tuberculosis

- Tuberculosis infection or disease
  - Latent TB infection (LTBI): 50% or greater in foreign-born individuals
  - Canada: 66% of active TB in foreign-born (2007)

- Chest X-ray
  - Detects active "infectious" TB or remnants of infection
  - Does not detect "sleeping" LTBI

- Tuberculin Skin Test (TST or Mantoux)
  - Positive in many due to past TB exposure; BCG; NTM
  - INH prophylaxis (without TST testing) not cost effective (toxicity; INH resistance)
  - Screen high-risk for reactivation LTBI → active TB (exposure in refugee camp; recent immigration; high-risk medical conditions)

- ?Role of interferon gamma release assay (IGRA)

Beware...

- > 3 wk cough (+/- fever, weight loss, etc)
  - High risk (5 – 15%) reactivation (LTBI → TB disease) first five years after immigration
  - CXR, sputum x 3 (TB smear/culture)
  - TST usually NOT helpful in adults
  - Consult TB expert as needed (e.g., HSC Chest Medicine)
**Syphilis Screening**
- **Bacterium** *Treponema pallidum*
- Primary, secondary, tertiary, congenital
- Screening detects “infectious” and “non-infectious” syphilis (relies on medical history)
- Easy to treat with 1-3 injections of benzathine penicillin
- Potential major risk to public health

**HIV Screening**
- Introduced into IME January 2002
- < 1% immigrants from SSA testing positive
  - ?falsified documents, ?self-selection
  - 10% world’s population; 63% of HIV infections
- Refugees: no medical exemption
- Potentially a major risk/cost to public health?

**Vaccine-Preventable Diseases**
- **Tetanus**: one million cases; 400,000 deaths
- **Diphtheria**: “most resurgent disease”
- **Pertussis**
- **Hib**: Major cause RTIs developing countries
- **Polio**: 1,310 cases (2007); eradication?
- **Measles**: 500,000 deaths
- **Mumps**
- **Rubella**
- **Varicella**
- **Hepatitis B**: 2 billion infected; 350 million chronic carriers
- **Tuberculosis**: 2 billion infected; 20 million cases; 1.6 mil deaths
- Frequent outbreaks
Immigrant Immunization Rates

- Varies by region:
  - Sub-Saharan Africa: 55%
  - South Asia: 70%
  - Latin America: 90%
  - Eastern Europe: 92%
- Immunization status difficult to confirm:
  - Lack of records: assume incomplete
  - Incomplete records
  - Falsified records
  - Inadequate potency of vaccines used (cold chain)
- Start/completion of routine immunization schedules
  - Children and adults (Canadian Immunization Guide)

Approach to Immunizations

- General rule:
  - Few indications for pre-vaccination serology (expense; time; correlation with protection?)
  - Simply follow age-appropriate recommendations
- Serology useful for some conditions
  - e.g., > 5 y, no history VZV
- Hepatitis A, B: immunize if indicated
- Concerns over tetanus/diphtheria/pertussis "over-immunization"
- Live vaccines contraindicated if pregnant, severe immune-compromise (MMR, varicella)

Complete Blood Count

- Nutritional status
  - Iron, folate, B12 deficiency anemia
- Detect eosinophilia
  - Parasitic infections
Parasitic Infections

- **Intestinal and tissue parasites**
  - Ascaris (> 1 billion), *Entamoeba histolytica* (480 million), *Trichuris* (500 million), *Schistosomiasis* (250 million)
  - Blood loss, iron deficiency anemia, malnutrition
  - Obstruct intestines, bile ducts, lymph channels, capillaries of brain and other organs
  - Growth retardation, death
- **Lice, scabies**

Stool Parasite Prevalence in Immigrants

- **Protozoa** (1997-2003 data):
  - Giardiasis 5-30%
  - Amebiasis 1-5%
- **Helminths** (1997-2003 data):
  - Trichuriasis 10-30%
  - Hookworm 1-20%
  - Ascariasis 5-10%
  - *Schistosomiasis* 0-17%

Strongyloides Prevalence in Immigrants

- **Varies by region** (1989 data):
  - South America 15-85%
  - Southeast Asia 25-40%
  - Sub-Saharan Africa 25-50%
  - Central America 1-20%
  - Eastern Europe 1-7%
Approach to Parasitic Infections

- Not treated, no symptoms? CBC, 2 stool O&P (>24h)
  - SSA refugees to US: 56% positive stool O&P
  - Protozoa 52% (Giardia 14%, E. histolytica 5%)
  - Helminths 14%
- Eosinophilia not explained by stool; persists
  - Serology: Strongyloides (all refugees); Schistosoma (SSA)
- Cost effectiveness
  - Universal screening vs. mass treatment (overseas documentation?) vs. "watchful waiting"
- Albendazole presumptive treatment?

Malaria

- Plasmodium parasites (protozoa)
  - P. falciparum, P. vivax, P. ovale, P. malariae
- 400 million infections, 1 million deaths ("#2")
  - SSA: 60% cases, 80% deaths
- Cyclical fevers/chills/sweats, cough, aches, nausea, vomiting, diarrhea
- Adults: natural immunity possible
- Children: most vulnerable
- SSA: presumptive treatment pre-departure
- All others: if symptoms: blood smears q 12h x 3; PCR

Beware...

- Fever (within first 1 – 6 months)
  - Malaria until proven otherwise (stat malaria blood smear – HSC or SBGH)
  - Potential medical emergency (children, pregnancy)
  - Consult Infectious Diseases
Beware…

- **Eosinophilia on CBC**
  - Think of tissue helminths (schistosoma, filaria, onchocerca, strongyloides)
  - Stool O&P not very useful (except for strongyloides and “hookworm”)
  - Serological testing
  - Consult Infectious Diseases or Tropical Medicine

Human Papillomavirus (HPV)

- < 50% female immigrants to US report ever having had Pap
- Cervical cancer incidence 5 – 10 x higher in immigrant women vs. women born in Canada
- Worldwide, second most common female cancer
- Highest rates in South and Central America, Caribbean (esp. Haiti), sub-Saharan Africa, and Asia (esp. China, Korea, Philippines, Vietnam)

Other Specific Health Concerns

- **Sexually transmitted diseases**
  - Chlamydia, gonorrhea, HIV/AIDS, syphilis
- **Mental health issues**
  - Fleeing conflict, victims of war, torture and rape
  - Acute and chronic post traumatic stress disorder (PTSD) and depression
- **Substance use**
- **Family violence**
**Future Screening?**
- Liver enzyme tests
- Hepatitis B
- Hepatitis C
- Renal function tests (vs. urinalysis)
- Malaria blood test (PCR) in SSA refugees

**Access to Health Services**

- Immigrants: similar to other Canadians
  - “Healthy migrant effect”
- Labour and Immigration
  - “Entry Program”; includes one week of health orientation as part of four-week course
- Settlement agencies; family/friends
- Family Doctor Connection Line
- RHA resources
Manitoba Interfaith Immigration Council (Welcome Place)

- Contracted by CIC for GARs
- Largest settlement agency
  - Range of settlement services
- Various partnerships for healthcare
  - WRHA, HAC, medical students (previously)
  - Peace Village (previously)
  - Nine Circles, Klinic
  - Other Community Health Centers, FFS physicians

Barriers to Care

- Undocumented status; “no-shows”; system navigation
- Transportation; child-care
- Exams lengthy in duration, things missed
- Language barriers
  - Cost, availability of high-quality interpreters
  - Use of family and friends
- Low remuneration
- Lack of clinical guidelines
- Complex and confusing system requiring navigation
- Lack of communication between providers, medical and non-medical

WRHA Activities

- Immigrant and Refugee Populations Working Group
  - PC, PH, Klinic, NCCHC, HAC, Youville, SERC
  - Theoretical frameworks
- Language Access Services
- Medical guidelines
  - Letter to physicians
  - Local and national work
- Newcomer assessment clinic
Mass Refugee Settlement Projects

- **Karen** (Burmese) Refugees
- Northern Thailand refugee camps >10y
- Canada:
  - 2006: 810
  - 2007: 2000 additional
- NL, PEI, Ont, MB, SK, AB, BC
- Revision of CIC Health Mgmt Branch protocol
  - Due to health outcome data of group, based on advice from PHAC and CTC (TB)
  - Pre-departure and post-departure
Tuberculosis Statistics Amongst Refugees in Thailand

- TB prevalence in Thailand refugee camps over the past two years: 2,674/100,000 (IOM Regional Medical Official in Bangkok, personal exchange)
- MDR-TB:
  - 76/100,000 for the Burmese refugees - 10% of all positive cultures;
  - 126/100,000 for the Hmong refugees - 30% of all positive cultures.
- Active TB diagnosed amongst the 805 Karen refugees coming in Canada:
  - 5 cases/805 refugees: 621/100,000
- WHO estimated sputum smear positive pulmonary TB rate per 100,000 (3 year average for 2004/2005/2006):
  - Thailand: 61/100,000
  - Myanmar: 73/100,000

Mass Refugee Settlement Projects

- Future: Bhutanese refugees
- Residing in Nepal camps
- Projected 5000 immigrant to Canada over next 3-5 years