

Population Mobility and Public Health

The Globalization of Communicable Disease

Brian Gushulak
Geneva June 2004



What am I going to talk about?

- What is population mobility?
- What it means for infectious disease epidemiology
- Why we need a new approach to looking at how these two factors interact



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This is an old Concern

- The relationships between the movement of infections and the movement of people have been important health issues for centuries
- They have produced the world's oldest public health measures.
- Most of those have been the response to fear in the absence of effective means of control



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New Factors have Shifted many of the Parameters

- Resurgence in the interest in public health and infectious diseases
 - SARS / Pandemic Influenza / Smallpox
- Significant interest in migration as a global process
 - Not just the traditional immigration receiving nation
- The process of globalization and the globalization of public health risks



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To the man who only has a hammer in the toolkit, every problem looks like a nail Abraham Maslow

- The history of how we have approached this issue has been disease based
 - Nations with specific disease control programs applied them to migrants
 - Often flowed from Quarantine or national public health regulations which are disease-list based



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Examples of how we have Assembled the Toolkit

- Historical development
 - frontier based
 - focused primarily
 - infectious diseases
 - exclusion of few
 - Follow up of some others
 - dealt with short term outcomes
 - Infectious TB, STDs, vaccinations



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Photo: US National Library of Medicine



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IOM's International Dialogue on Migration
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Seminar on Health and Migration, 9-11 June 2004

Session IIA: Public Health and Migration

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The significant problems we face cannot be solved at the same level of thinking we were at when we

created them. *Albert Einstein*

- The principles of historical migration health are no longer valid
- They will be increasingly challenged by the current environment
- There are common approaches that can help manage these challenges



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The Challenges can be more easily Considered Through a New Lens

- Health and globalization are linked through population mobility as a part of related processes
 - Dealing with specific diseases as a concept will delay program development
 - It is not anticipatory - leads to "surprises" (BSE, VFR Travel and Malaria) and requirements to apply resources and effort in less cost effective manners



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The Concept of Population Mobility as the Major Driver behind Many Global Disease Challenges

- It is not complicated to understand but..
- It requires a recognition that borders and frontiers are of limited importance
- The issue results from the interaction of two basic factors
 - Disparity
 - Movement



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The mobility of people is a cornerstone of globalization

- While there have always been mobile populations, a variety of factors combine to make this time period unique in human history.
 - Numbers and demography of mobile populations
 - Origins and destinations
 - Mode and speed of transport
 - Integrated global systems



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The Product of Mobility and Disparity

- The Globalization of disparities



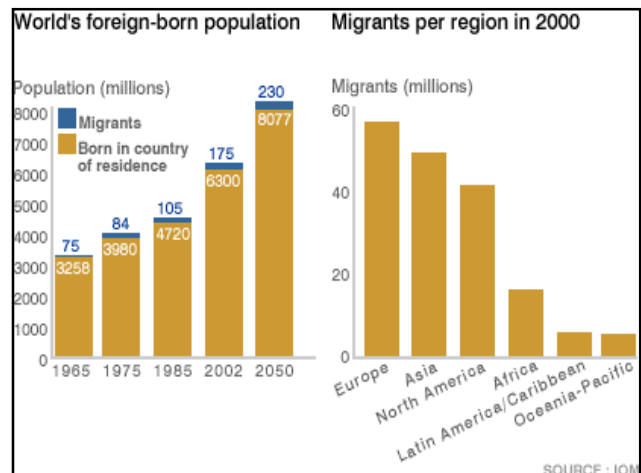
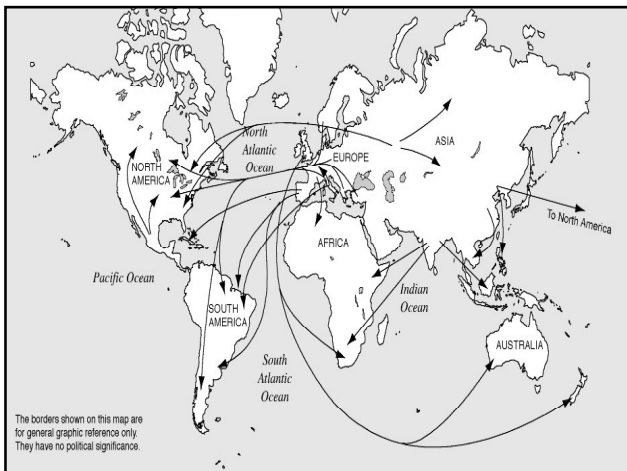
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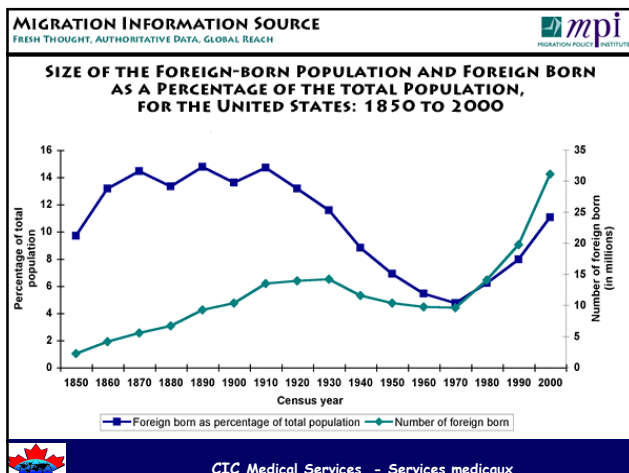
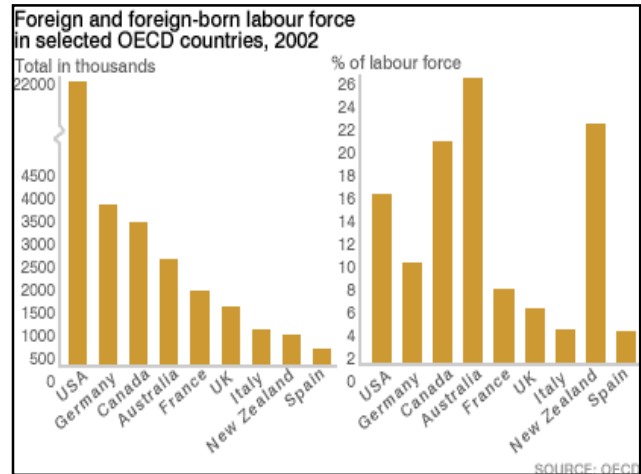
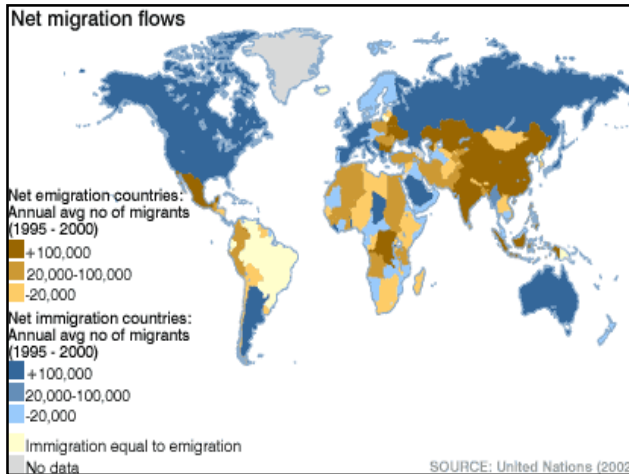
Mobility

- More people
- More diverse
 - Age
 - Family Configuration
 - Not limited to international travel
 - Rural - urban




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Disparities

- Traditional epidemiological patterns
 - Not limited to simple biology
 - Related to Public Health Capacity
 - Economics
 - Civil Society



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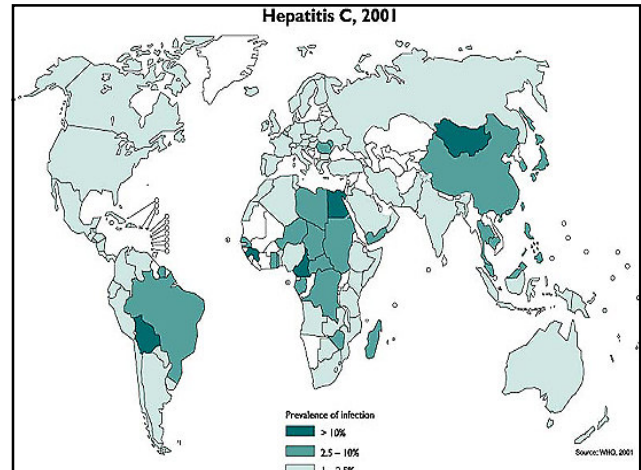
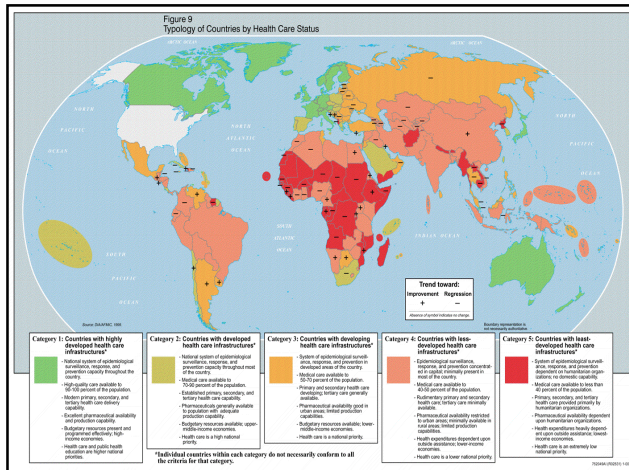


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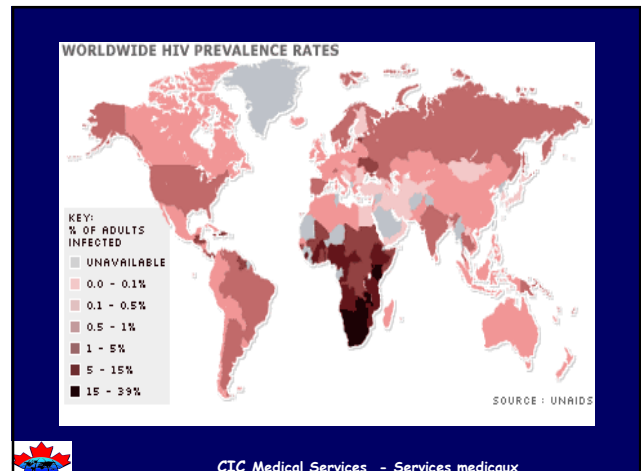
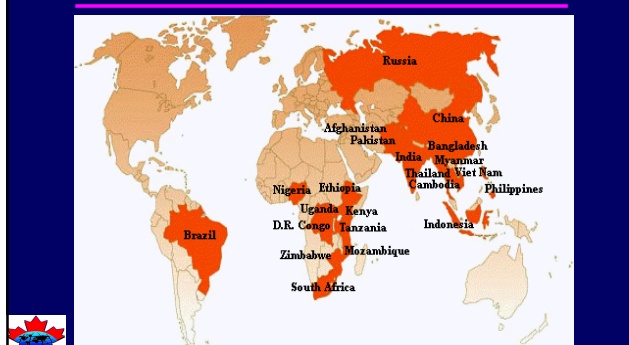
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The 22 countries shown on the map accounts for 80% of the TB cases in the world (source STOP TB)





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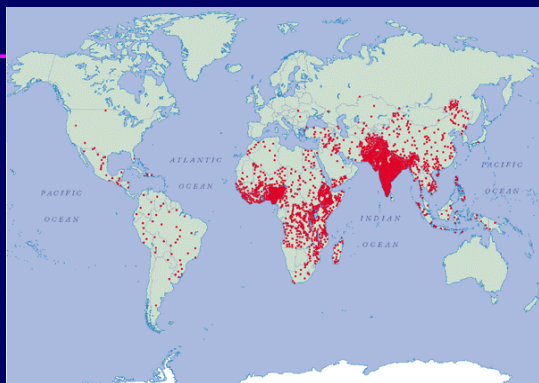
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Worldwide distribution of child deaths

Each dot represents 5000 deaths, 7-9



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So What does This Mean?

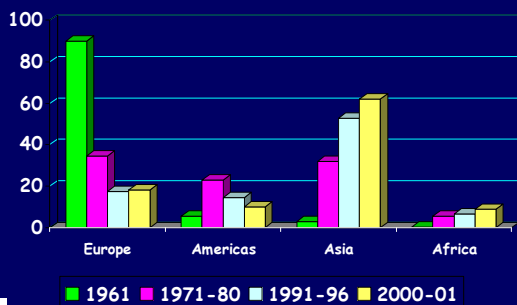
- Policy intent in this area needs to reflect global and demographic realities
- Migration is an essential global force
- Predictable consequences



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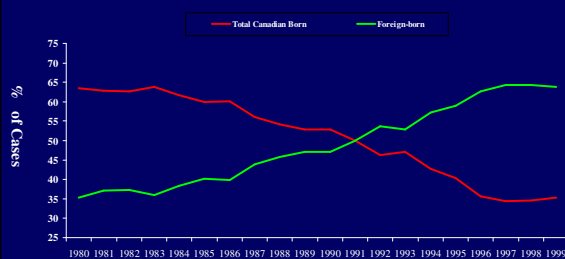
Canadian Immigrant Source Regions Past 40 Years

(MacDonald BS Transatlantic Economic Issues and their Security Implications
Atlantic Council Members Paper 03/02)



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Tuberculosis in Canada by Birthplace



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Risks of Rare or Uncommon "Low Incidence" Diseases

- In developed countries, certain groups of migrants can be expected to become high risk groups for diseases and illnesses controlled or eliminated in native-borne populations,
 - Craig AS, Reed GW, Mohon RT, Quick ML, Swarner OW, Moore WL, Schaffner W. *Pediatr Neonatal tetanus in the United States: a sentinel event in the foreign-born. Infect Dis J* 1997 Oct;16(10):955-959
 - Savard C, Godin, C. Outbreak of Mumps, Montreal, October 1998 to March 1999 - with a Particular Focus on a School. *Canada Communicable Disease Report* 2000 ;26 :



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Malaria in Northern Europe

- "Immigrants travelling to their former countries of residence will normally have lost their immunity and are a high risk group for contracting malaria. This is especially true for immigrants from tropical Africa. Travel clinics should be more aware of this and provide adequate counselling to immigrant travellers."
- Blystad H, Lovoll O. Imported malaria in Norway. *Eurosurveillance* Weekly Issue 15, April 11, 2002 < <http://www.eurosurv.org/update/> >



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Notified Hepatitis A cases in Denmark 1996-1999

- Immigrants who had been travelling to endemic areas were involved in 21 of 34 outbreaks
- "The incidence of hepatitis A in Denmark seems to relate highly to the children of immigrants, who come from high endemic areas. Vaccination of those above one year of age is recommended when travelling abroad if anticipated"

- Wandall DA, Christiansen AH, Samuelsson IS. [Hepatitis A in Denmark, Notified cases 1996-1999]. *Ugeskr Laeger* 2000 Nov 13;162:6233-6236



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Issues for the future

- The growing importance of chronic infections
 - Not often part of current practices
 - Historic epidemiology is important
 - Major impacts
 - Social impacts
- Slow growth in affected cohorts
 - BSE
 - Chaga's
 - Strongyloides
 - Leishmaniasis
 - TB
 - Hep B C
 - HIV



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Summary

- The globalization of disease is component of our world
- It is a process and should be managed as a process
- Effective and cost efficient solutions will be easier through collaborative efforts
- Individual disease-based practices are unlikely to be particularly effective unless combined with broader strategies



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Failure to Change has Risks

- Stigmatization of migrants
- Economic costs
- Intellectual cost
- Tendency to divert activities based on the *disease issue of the week*.



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Gratitude

- For the privilege of being able to assist in this meeting
- For those who have helped develop and test this principle
 - Doug MacPherson
 - Louis Loutan
 - Jacqueline Weekers
 - Bob Wainwright
 - Health Canada / CIC / IOM / WHO



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