Global Is Local! How Does Global Health Impact Us?

June 12, 2019

Learning Objectives

At the end of this educational activity, participants should be able to:

• Describe how the global burden of disease and human mobility are affecting U.S. HCPs and institutions.
• Discuss the progression from international health to global health and the current shift to “Global Is Local.”
• Explain why U.S. HCPs must be able to alter their approach to providing health care based on an individual’s country of birth or recent travel.
• State how improving global health can improve health in the U.S.
Panelists

Moderator
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Panelist
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Panelist
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Disclosure: UpToDate

Perspectives provided are my opinion only and are not given on behalf of the CDC
Goals

• Understand how human mobility is changing human medicine

• A new paradigm?
  – What is global health?
  – Is “Global Health” really just discussing health disparities?

• Medical education and health systems are slow to recognize and adapt

• Cases to highlight "Global Health" and how the “Global is Local”
  – Ask every patient
    • Where were you born?
    • Where have you traveled?
Global Health

“I have a feeling we are not in Kansas anymore”

- West Nile Virus
- Ebola
- Zika
- Chikungunya
- Measles
- Etc..

Why Should US Clinicians and Health Systems Care?
Case #1

- 4 yo Hmong child presents with fever, ear pain and this cutaneous findings.

- What is this? Should you notify officials?

Case #2

- 23 yo Somali female involved in a car accident in critical condition.
  - stabilization room, to have a urinary catheter placed, her female cutting/circumcision (FGM) is taken down.

- On recovery, she is insistent that surgery be done to repair her FGM (she believes she will not be able to marry). This is an illegal procedure in your state.

- What do you do? Honor her wishes? Refuse surgery and advise why it is illegal and not medically indicated?
Case #3

- Middle aged Vietnamese women seen by her primary for new headaches. After the third visit, and no response to previous headache management, she was sent for an MRI.

- Radiologist calls the primary asking if he was sure he wanted a head MRI.

- The primary explains the new but chronic, recalcitrant headaches…

- The radiologist says, “she tells me she is having vaginal discharge”.

What Happened?

Case #4

- 37 yo female returned from mission trip to Togo 3 days ago.

- Presents with fever, headache, body aches and severe fatigue. She was taking “artesunate tea” to prevent malaria during her travel.

- Basic labs that are remarkable for a high CRP, elevated lactate, low WBC and platelets 75.

- You order a malaria rapid test and blood films and appropriately admit to the hospital.
Lab calls and says she has 7% *P. falciparum* malaria.

- Your first call (if not ID specialist) should be?

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**FYI:** Quinidine off the market April 1st

To obtain IV Artesunate:

CDC Malaria Hotline (770-488-7788)

Access to NTD drugs and vaccines is an increasing issue for Americans
Case #5

- Middle age Nigerian female with h/o of obesity; feeling ill with fevers and cough at home for 4 days (occurred in May 2015)
  - Presented to a local ED with confusion and fever (104)
  - Denied international travel
  - Decreasing LOC becoming obtunded → respiratory arrest
  - Intubation failed, emergent cricothyrotomy failed…
  - Pronounced dead in the ED 2 hours after presentation

- This was found on her post—

Diagnosis?
Why did she, and her family, deny travel (remember May 2015)?
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Impacting patient care and clinical outcomes

- Stigma
- Implicit Bias
- Unwelcoming environment
- Language barriers
- Cultural barriers
- Social determinants

Humans move, that is what we do--not new.

Human migration has occurred as long as humans have been on the planet – first left Africa > 60 million years ago…my Aunt Ellen…
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Spatial Mobility of French Population, 1800-2000

Based on data from Grubler and Nakicenovic, 1991; Fig 7.18 in Cliff et al, 1998

Great-grandfather
Market
Harbours

Grandfather
1 Beds
2 Buse
3 Cambe
4 Horts
5 Leics
6 Northants
7 Greater London
Life-time tracks
Area shown in (a)

Father

Son

Based on data from Grubler and Nakicenovic, 1991; Fig 7.18 in Cliff et al, 1998
Epidemics have always happened

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What has changed?

*Timeline of influenza A(H1N1) cases*

27 May 2009, 06:00 GMT: 48 countries, reporting 13,398 cases

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Speed of Global Travel in Relation to World Population Growth

From: Murphy and Nathanson Sems. Virol. 5, 87, 1984

World Waterways Network: 2008
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Weather-Watch Ships at Sea: Tuesday, February 12, 2008, 1:00 PM
(ships participating in a voluntary global weather watch system, of 40,000 ships at sea today)

World container ship traffic has doubled since 1997
Travelers represent the biggest threat and highest probability of health care encounters

- 2016: 35,000,000 outbound US international travel trips (compare to ~20,000 refugees)*
  - Any condition can walk through your door at any moment
    - Routinely ask about travel—clinician and/or system
  - Know when to ask for help
  - Many other public health impacts
    - 2 examples

*ITA report: https://travel.trade.gov/outreachpages/outbound.general_information.outbound_overview.asp

The implications are extensive...example 1

- Drug resistance:
  - ESBL, KPC's in travelers--e.g. Calgary study, 64% (70/109) of travelers to Asia acquired ESBL-producing E. coli.

The implications are extensive... example 2

- What vector borne infection is this? 2008

The implications are extensive...

- In 2018
  - What vector borne disease is this?
Humans and mobility

- Human migration
  - Approximately 1 billion persons live outside their country or region with more than 200 million people considered “international migrants” by the UN.
  - 3% of the world’s population IM
  - 5th most populated country in the world

- Driven by climate change, political instability and poverty


Human displacement

More than 60 million people forcibly displaced
85% of all Refugees live in this area.
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Centers for Disease Control and Prevention
Immigrant, Refugee, Migrant Health Branch

- Regulatory Mission
  - Prevent the introduction, transmission, & interstate spread of communicable diseases in/into the United States & its Territories by immigrants, refugees & migrants

- Public Health Mission
  - Reduce morbidity & mortality among immigrants, refugees, and migrants
  - Prevent the introduction, transmission, & spread of communicable diseases through regulation, science, research, preparedness, and response

Roles are Expansive

- Provide guidelines for disease screening, prevention & treatment in the U.S. and overseas
- Track and report disease
- Implement vaccination and presumptive treatment for parasites in refugees overseas
- Respond to disease outbreaks in the U.S. & overseas
- Advise U.S. partners about health care for refugee groups
- Educate & communicate with stakeholder groups
Pertinent Point

- All US immigrants in the official system undergo “overseas”, pre-departure health assessment, preventive medicine (e.g. vaccines) and, when pertinent, diagnosis and treatment (when pertinent).

  – Limitations: focused on diseases of public health significance
Pertinent Point

• Certain groups (e.g. refugees) receive more intensive medical care and interventions.
  - Screening beyond significant conditions (e.g. Hep B)
  - Expanded Vaccines
  - Presumptive treatment for certain infection

Example of infections targeted—direct and indirectly from pre-departure presumptive treatment
  - Ascariasis
  - Hookworm
  - Trichuriasis
  - Strongyloides
  - Schistosomiasis (Artesunate?)
  - Malaria
  - Tapeworm (PZQ)
  - Scabies (IVR)
  - Lymphatic Filariasis
  - Onchocerciasis
  - Giardia (minima)

Pertinent Point

To provide appropriate care, it is important for clinicians and systems caring for newly arrived immigrants and refugees to be aware of their previous care.
A few clinical resources you may not be familiar with...

 Refugee Health Domestic Guidelines

- General
- History and physical
- Hepatitis
- HIV
- Immunizations
- Intestinal parasites
- Lead screening
- Mental health
- Malaria
- Nutrition and growth
- Sexually transmitted infections
- TB
- Cancer (in dev)
- Female genital mutilation/cutting (in dev)
- Preventive medicine (in dev)
- Women’s health (in dev)

Population Specific Health Information

- Bhutanese refugees
- Burmese refugees
- Central American Minor Refugees (Guatemala, Honduran, Salvadoran)
- Congolese refugees
- Iraqi refugees
- Somali refugees
- Syrian refugees
Case #6

- 38 yo female nurse with abdominal discomfort
  - Began having weight loss (20 lbs over 6 months), night sweats and RUQ discomfort
  - Adopted as a child from Korea
  - Health care and immunizations up to date

  – Exam (pertinent)
    - Cachectic. Abdomen with RUQ tenderness, slightly enlarged spleen
    - AFP 936
Case #6

• Diagnosis?

• Most likely cause?
  – A. Alcoholism
  – B. Hepatitis B
  – C. Toxin (e.g. acetaminophen)
  – D. Hemachromotosis

• Could this have been prevented?
Case #6

- 55 yo Laotian male, presenting with confusion, rash, fever and abdominal pain and admitted to ICU.
  - Moved to Minnesota 25 years ago, last travel outside the state 15 years ago.
  - Healthy except history of COPD

- One week ago was started on azithromycin and prednisone

- 24 hours after admission
  - Septic shock, succumbs
  - Blood culture positive for *E. coli*

Case #7
Diagnosis?
A. Urosepsis
B. *Strongyloides* hyperinfection
C. Ruptured Viscus
D. Foreign body

What should have been done to prevent this?
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<table>
<thead>
<tr>
<th>Pt.</th>
<th>Age</th>
<th>Ethnicity</th>
<th>Time in US</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>42</td>
<td>Cambodia</td>
<td>6 mo</td>
<td>Recovery</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
<td>Hmong</td>
<td>3 yrs</td>
<td>Recovery</td>
</tr>
<tr>
<td>3</td>
<td>34</td>
<td>Hmong</td>
<td>&gt;5 yr</td>
<td>Recovery</td>
</tr>
<tr>
<td>4</td>
<td>52</td>
<td>Vietnamese</td>
<td>&gt;5 yr</td>
<td>Recovery</td>
</tr>
<tr>
<td>5</td>
<td>46</td>
<td>Hmong</td>
<td>8 yrs</td>
<td>Death</td>
</tr>
<tr>
<td>6</td>
<td>69</td>
<td>Hmong</td>
<td>4 yrs</td>
<td>Death</td>
</tr>
<tr>
<td>7</td>
<td>72</td>
<td>Laotian</td>
<td>7 yrs</td>
<td>Death</td>
</tr>
<tr>
<td>8</td>
<td>49</td>
<td>Vietnamese</td>
<td>&gt;5 yrs</td>
<td>Recovery</td>
</tr>
<tr>
<td>9</td>
<td>34</td>
<td>Hmong</td>
<td>4 yrs</td>
<td>Death</td>
</tr>
</tbody>
</table>

Take home Infectious Disease Points in Migrants and Travelers

- Migrants: Consider if your patient is at risk of long-latency infectious diseases and address at any opportunity:
  - TB (IGRA or TST)
  - Hepatitis B (screen and vaccinate)
  - Hepatitis C (screen if appropriate)
  - *Strongyloides* (if starting immunosuppression, especially corticosteroids, screen or treat)

- Travelers: A fever in anyone who has visited a malaria endemic area is a medical urgent case.

- Always ask:
  - Were you born?
  - Where have you traveled?
Like it or hate it
The world is mobile and we are not going back…

“Global Health” is fun and informative (learn from your patients and in diversity is beauty)
Some Other Cultural Practices
So, where do the real public health threats come from?

Cholera in New York City, 1892

Figure 4.1. “They Come Arm in Arm,” Judge 13 (1892).

Source “Quarantine” by Howard Markal
Death in a sailor’s uniform holding the yellow quarantine flag knocking on the door of NYC during the 1898 yellow fever epidemic.
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Conclusions

• The paradigm is shifting, I believe “global health” is becoming less geographic and more based on disparities

• The Global Is Local

• It is challenging but is fun and stimulating to learn from your patients, their experiences and about the broader world and medicine.

Conclusions

• The competent provider and Health System of the 21st Century

  • Has cultural humility (“competence”)
  • Knowledgeable/educated and has resources to reflect
    • Ethnic differences in disease patterns of their populations
  • Knows to ask two key questions of every patient
    • Where were you born?
    • Where have you traveled?

  • Possesses basic attitudes, skills, and abilities to care for diverse populations
  • Develops systems to reduce barriers (e.g. professionally trained interpreters)

I wonder how many people I've looked at all my life and never seen.

—John Steinbeck
It is time for parents to teach young people early on that in diversity there is beauty and there is strength

Maya Angelou
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Healthcare transformation in Brazil

With a population of around 210,000 people taking Healthcare to all in a universal form has been Brazil’s biggest challenge so far.

- 209M people
- 312,622 health establishment
- 6,805 hospitals
- 596,186 beds (44.3% private/55.7% public)
- Life expectancy 75.8 years
- 496,073 Nurses
- 453,098 Doctors
- 22.5% has health plan
- 21,325 labs
- 9.1% of PIB
- 596,186 beds
- 21.325 labs
- 453,098 Doctors
- 496,073 Nurses

Domôgrafos Médicos no Brasil 2018-FNUSP

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Healthcare transformation in Brazil

Similar physically to the US Health Care System, but different in its conception, the Brazilian System is UNIVERSAL attending to the needs of the population.

<table>
<thead>
<tr>
<th>THE AMERICAN HEALTH CARE SYSTEM</th>
<th>THE BRAZILIAN HEALTH CARE SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PUBLIC SYSTEM</strong></td>
<td><strong>PUBLIC SYSTEM</strong></td>
</tr>
<tr>
<td>Medicare</td>
<td>Unique Healthcare System (UHS)</td>
</tr>
<tr>
<td>Government-funded healthcare for over 65</td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>Brazilian National Health System is characterized by some principles that aim to provide integral care (including preventive and therapeutic treatments) for all citizens, independently of age or social position. The main principles are universal access, equity, deconcentration, democratization, governance and comprehensive care.</td>
</tr>
<tr>
<td>Medicaid</td>
<td></td>
</tr>
<tr>
<td>Government-funded healthcare for those on low income</td>
<td></td>
</tr>
<tr>
<td>Military service</td>
<td></td>
</tr>
<tr>
<td>Service healthcare to government-run scheme</td>
<td></td>
</tr>
<tr>
<td>State Children’s Health Insurance Programme</td>
<td></td>
</tr>
<tr>
<td>Coverage for children whose parents do not qualify for Medicaid</td>
<td></td>
</tr>
<tr>
<td><strong>PRIVATE SYSTEM</strong></td>
<td><strong>PRIVATE SYSTEM</strong></td>
</tr>
<tr>
<td>Employer-sponsored insurance (group or individual)</td>
<td>Private health insurance</td>
</tr>
<tr>
<td>Employers provide health insurance as part of the benefit package for employees.</td>
<td>The majority of private health insurance is delivered to employees of public and private companies.</td>
</tr>
<tr>
<td>Individual market</td>
<td>Individual health plan</td>
</tr>
<tr>
<td>Enhanced to self-employed or retired people.</td>
<td>Citizens also can contract an individual or familiar medical insurance</td>
</tr>
<tr>
<td>Payment out of pocket</td>
<td></td>
</tr>
<tr>
<td>Medical expenses are paid directly by the private health care.</td>
<td></td>
</tr>
</tbody>
</table>

US ~18% GDP
Spent on Health

BRAZIL ~10% GDP
Spent on Health

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Healthcare transformation in Brazil

Brazil has the world's largest Universal System - SUS. Originally created in 1988, SUS as part of the reform to increase access to Health, the SUS principles were and still are: universality, equality, decentralization, integrality and community participation.

The system's most innovative implementation - a real *game changer* - was the launch in 1994 by the Ministry of Health, of the Program known as Programa de Saúde de Família (PSF) : “Family Health Strategy”.

Defined as Strategy, and not merely as a program, the PSF’s objective is to promote better life conditions and to assist enrolled families and individuals.

A true reorganization of primary attention with no date to end.

Healthcare transformation in Brazil

The “Family Health Strategy” has reverted the order of the assistencial model

**PATIENT CARE**

**EMERGENCY IN BIG HOSPITALS**

The family is the object of attention in their own ambience thus allowing for a better understanding of health/sick process.

The program includes actions that promote prevention, recuperation, rehabilitation and other more frequent aggravations.
The program has proven to be a success.

25 years of existence

64% of the population covered = 133,6 million people

95% of the country covered
Present in 5,481 (of 5,575) municipalities in Brazil

With high impact on the population metrics: lower number of children born underweight one year after the implementation of the program, and a decline in children mortality rates in two years.

Healthcare transformation in Brazil

As a consequence of deinstitutionalization and humanisation process of SUS (Sistema Único de Saúde), the Family Health Strategy influences positively health outside of Hospitals.

Researches have shown that good primary care can solve 80 to 85% of a population’s health problems.

In Brazil between 2001 and 2016 hospitalisation rates have fallen 45% - from 120 to 66 per 1,000 inhabitants. 24% in capitals and 48,6% in rural areas.

Of the most impacted conditions*, 3 stand out:
- Asthma 76,6%
- Gastroenteritis 66,5%
- Cardio and Brain Vasculitis 57%

*Research by Luiz Felipe Pinto (UFRJ) / Ida Giovannini
Healthcare transformation in Brazil

Challenges Brazil

The success of primary attention lays in the coordination of care, such as what we see in the delivering in accountable care organizations. It relies on the integration of hospital and ambulatory care.

Thus our biggest challenge resides in the hospitals, the lack of investments and human capital are two forces that pull our system down.

Thank You.