THE CHANGING FACE OF
HUMANITARIAN CRISIS & PUBLIC HEALTH
EMERGENCIES

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HEALTH EMERGENCIES

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THEMES

✓ Increasingly, domestic disasters are under the influence of integrated global changes & forces

✓ Requires multidisciplinary research and action that no one nation-state or health system can solve alone

✓ All produce major public health emergencies

✓ Success begins & ends at the “prepared community” level

ACOEM

✓ Disaster preparedness & emergency management one of 10 core competencies

✓ Roles historically lacking, poorly defined

✓ Global Public Health the most crucial of specialties

✓ ACOEM must reassess goals, objectives and assets that better define realistic global & community responsibilities

POPULATIONS EXPOSED TO CONFLICT

RM Garfield, J Polansky, FM Burkle, Jr*

LESS DECLARED WARS...BUT MORE PEOPLE EXPOSED TO CONFLICT THAN EVER BEFORE

* Garfield, Polansky, Burkle. Changes in size of populations & level of conflict since WWII. DMPHP, 2012
UNCONVENTIONAL WARFARE
Multitude of threats, including insurgencies, terrorist networks, internal wars, transnational organized crime, and illicit shadow economies:

HISTORICAL PERSPECTIVE

2000s...
- Non-declared unconventional wars have become the norm
- Social media driven nation-state revolts
- Rise of non-state actors, private groups & militaries claiming to be humanitarians
- Massive numbers of disaffected youth
- Public health infrastructures & protections disappearing

CURRENT SECURITY ISSUES

- NGOs work not in war zones but in crime scenes (e.g., Democratic Republic of Congo)
- Increasingly Organized Armed Violence; not fought on ideological principles but on greed
- Half of UN Peacekeeping forces deployed to situations where natural resources play an active role in the conflict
The Changing Face of Humanitarian Crises & Public Health Emergencies / Frederick M. Burkle, Jr., MD, MPH

NATURAL RESOURCES

- Petroleum
- Gold
- Diamonds
- Uranium
- Copper
- Cobalt
- Plutonium
- Silver
- Phosphate
- Water
- Other rare earth metals

Aid Worker Security Database: Trends in Tactics

HISTORICAL PERSPECTIVE

- Complicated by ominous layered variables...
  - Poverty & malnutrition
  - Climate change extremes
  - Rapid unsustainable urbanization
  - Biodiversity crises
  - Emergencies of scarcity
- All represent public health emergencies
- Unappreciated by US government & military
THE “BOTTOM BILLION” CONTROVERSY

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>2007-08</th>
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<tbody>
<tr>
<td>Low income, stable (e.g. Tanzania and Zambia)</td>
<td>80%</td>
<td>16%</td>
</tr>
<tr>
<td>Low income, fragile conflict-affected state (e.g. DRC and Burundi)</td>
<td>13%</td>
<td>12%</td>
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<tr>
<td>Middle income, stable (e.g. India, China and Indonesia)</td>
<td>6%</td>
<td>61%</td>
</tr>
<tr>
<td>Middle income, fragile conflict-affected state (e.g. Pakistan and Nigeria)</td>
<td>1%</td>
<td>11%</td>
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FOCUS ON NEW & EMERGING HUMANITARIAN CRISSES & CONFLICTS

AUSTRALIA: 2009 Super-Dust Storm
- Most vulnerable developed country; under biggest hole in ozone layer; Half of Great Barrier Reef gone
- Rising temperature, lower overall rainfall, yet heavy rains & floods, worst drought & wildfires in history
- Western Australia: worst mosquito breeding ever seen; Alteration in pattern of infectious diseases
- 2 in 3 with skin cancer before age 70
THE MAJOR 21st CENTURY CRISIS

RAPID UNSUSTAINABLE URBANIZATION

CLIMATE CHANGE & BIODIVERSITY CRISES

ESCAPING CONFLICT POPULATIONS

Raster Image

78% of population are urban squatters in the Developing world

• Africa: Violence prone
• Asia: Disaster prone

CONTRADICTIONS of GLOBALIZATION

UNSUSTAINABLE RAPID URBANIZATION

• Highest Worldwide Under age 5, (USMR), Infant Mortality (IMR), Maternal Mortality Rates (MMR)

• Urban slums: ≈ 1 Billion/no political voice
  ≈ 1 latrine per 150-200 people; Pay a fee; 10 min walk
  No privacy = Rape epidemics
  No international humanitarian representation
  Increasing focus of conflict

• Sanitation ignored; infectious diseases more prevalent

• Density more critical than population numbers
Because of lack of fresh water & sanitation the Infant Mortality Rate has soared to twice that of other South East Asian countries.

Boat is moored where center of village used to be.

Alice Smeets, Lancet 2009
**BIODIVERSITY AREAS**

Contain majority of world’s plants & vertebrates:
- The biological oxygen of the world
- High Biodiversity is major safeguard against infectious diseases

Biodiversity systems provide:
- Food
- Fresh water
- Balanced species of bacteria, viruses, etc
- Raw materials & fuel
- Regulate climate & air quality
- Maintain social fertility & pollinate crops

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**BIODIVERSITY HOTSPOTS**

- Biodiversity hotspots:
  - Occur when there is a loss of at least 70% of its original habitat
  - 80% of major conflicts occurred in 23/34 of the most biologically diverse & threatened places
    - Iraq
  - Must be recovered quickly post-disaster; “warfare ecologists”

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**34 BIODIVERSITY HOTSPOTS**

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LAND GRABBING

- Import dependent countries (China, Japan, So. Korea, Russia, few Middle Eastern): investing in farmland & resources in foreign countries to meet their national food, water and energy security needs
- The case of Madagascar...No cost, 100 year lease of half of all arable land
- South Korea: “We want to plant corn there (Madagascar) to ensure our food security. Food can be a weapon in this world.”

EMERGENCIES OF SCARCITY

- Global scarcity of energy, water, and food is now defining the public health status of nations
- Resource competition becoming “aggressive”... called “distributional conflicts” (less than 1,000 deaths/year)*
- 2011 UN Report: By 2030, 40% of world’s population will be without adequate water

EMERGING INFECTIOUS DISEASES

*Evans A: Managing Scarcity 2009
<table>
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<tr>
<th>OUTBREAKS, EPIDEMICS &amp; PANDEMICS</th>
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<tr>
<td>• Really wonderful time to be a virus!!</td>
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<td>• 70+ new or re-emerging diseases past decade: Primarily China &amp; South East Asia</td>
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<td>• Density of populations &amp; animal markets; easy travel</td>
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<td>• Bacteria spreading in warming oceans: Vibrio genus (e.g., Cholera)</td>
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**Cholera: Freetown, Sierra Leone, 2012**

*Photo: Kootation.com*
Disease concepts, knowledge, understanding & language differ tremendously

Response differences depend on public health protections & infrastructure system

HOTSPOTS FOR EMERGING DISEASE IN US & MEXICO

AIDS, Ebola, West Nile, SARS, Lyme disease, Hantavirus, Nipah/Hendra
**CHINA**

- Water scarcity in 2/3 of China’s 600 cities
- 80% have no sewage treatment facilities
- 90% of groundwater is polluted
- Altering the downstream microorganism ecology with chemicals and fertilizers: new & remerging diseases
- Food security program unsustainable
- Must move south

*Nature*, July 2010; *Climate Index*: Center for Global Development: April 2011

**Pollution causing major shifts in temperature and rainfall; Air and water pollution widespread**

- Pollution is being “defined out of existence”...
- Illustrates “acceptable” conditions
- Major rise in acute and chronic respiratory disease among children and elderly


**LOSS OF 28,000 RIVERS**
RAW SEWAGE & POLLUTION FROM AGRICULTURAL RUNOFF:
GIANT ALGAE COVERS 83% OF COAST
Qingdao, China July 2013

DEFINING DENSITY

PEARL RIVER DELTA URBAN ENVIRONMENT PROJECT

- 42 Million: combines 9 cities total size of Vermont & New Jersey
- Goal to improve public health protective infrastructure & transportation
- Cities have their own climate
RAPID URBANIZATION ECONOMIC BUBBLE

12-24 new cities per year

CHINA

“I am afraid you’ll have to live with it...a disease of civilization...there is no cure”

DEEP OIL RESERVES: SOUTH CHINA SEA
The Changing Face of Humanitarian Crises & Public Health Emergencies / Frederick M. Burkle, Jr., MD, MPH

SCARBOROUGH SHOAL: SOUTH CHINA SEA

PHILIPPINE CLAIM

CHINA CLAIM

THE PREPARED COMMUNITY:
A GLOBAL INITIATIVE

Crisis/disaster events at the community level are “discreet and unique”

Let the community anticipate and assess individual community characteristics and risks

Incorporate risks proactively into National Risk Register, located & fulfilled at the regional level

Bottom up approach: places the community in the driver’s seat

Crisis response & recovery more effective and efficient

CRISIS/DISASTER DIPLOMACY

A full spectrum strategy that deploys a flexible variety of tactics throughout the disaster cycle to provide:

- Local, National, Regional stability
- Encourage good governance
- Support human rights
- Restore Public Health protections
- Strengthen community resilience
- National consequence of globalization

CONCLUSIONS

- Humanitarian assistance has moved from rural to urban areas: largest disparity between the “have & have not” populations since 1950s Alma Ata
- The humanitarian community is NOT prepared to protect the urban public health infrastructure... or system
- NOT prepared to handle emergencies of scarcity

TREADING WATER

- Better scientific information does NOT lead to better outcomes among political decision-makers
- Politicians listen to economists not to scientists
- Benefits of research is modest: solving societal problems more complicated & difficult
- Universally acknowledged: no prospect of moving climate change legislation through Congress
CONCLUSIONS

- OEM is the operational & policy level focus within the complete disaster cycle
- Future crises solved by multidisciplinary Global Health Initiatives...not by individual nation-states or health alone
- Greatest challenges at the local community level where there are increasing disparities in equity and public health capacities

CONCLUSIONS

- “Policies that align the national interests with diplomatic, epidemiological (evidence based) & ethical realities of a globalized world more likely to survive”...equally relevant to the community level...
- Stop celebrating China!!

CONCLUSIONS

- “Global public health must take precedence over politics...and not be driven by political motives”
- “Public health emergencies (the common thread) must be seen as a strategic & security issue...that deserves both professionalization and an international monitoring system”
“We’d now like to open the floor to shorter speeches disguised as questions.”