FUNDAMENTALS OF GLOBAL HEALTH

Injury, Violence, Disaster (IVD):
The IVD GBD
Injury
Disaster
Prevention & Mitigation

19 October 2015
Last Lecture in Review

- The NCD GDB
- Mini Med School
- Critical Challenges
- Combat Strategies
TODAY’S LECTURE

First, let’s take a little trip:

IVD GDB

Disaster

Injury

Prevention & Mitigation
TODAY’S LECTURE

IVD GDB

Injury

Disaster

Prevention & Mitigation
The Global Distribution

% IVD DALYs Within Regions*

GLOBAL 10
NORTH 9.5
SOUTH 10.25

*Note: Highest regional burden is Central America 16%. Highest country burdens are in Syria (30%) and Afghanistan (16%).
IVD GBD: A Global Picture

The Global Distribution

% IVD DALYs Within Regions*

GLOBAL 10
NORTH 9.5
SOUTH 10.25

NEW Data since “Concepts & Measurements Lecture,” where I stated that IVD was 11% total DALYs!

More updates in our “Futures” lecture.

Source: IHME, accessed 2015
IVD GLOBAL DALYs: The Big Guns

1. Road-Related Injuries*
2. Self-Harm
3. Assault (e.g. gun, knife, sexual)
4. Fire, Drowning, Poisoning
5. War & Collective Violence
6. Natural Disasters

* 1/3 of IVD DALYs. Data includes drivers, pedestrians, and all types of vehicles.
IVD: Determinants & SDGs

- Age, sex, gender
- Alcohol and substance abuse
- Gender inequality
- Poverty
- Education
- Infrastructure
- Working conditions and regulations
- Degree of social stratification
- Lack of social and familial cohesion
- Political, religious, and ethnic conflict
- Vicissitudes of mama nature
- Climate change

Goal 1: End poverty
Goal 2: End hunger
Goal 3: Well-being
Goal 4: Quality education
Goal 5: Gender equality
Goal 6: Water and sanitation for all
Goal 7: Affordable and sustainable energy
Goal 8: Decent work for all
Goal 9: Technology to benefit all
Goal 10: Reduce inequality
Goal 11: Safe cities and communities
Goal 12: Responsible consumption by all
Goal 13: Stop climate change
Goal 14: Protect the ocean
Goal 15: Take care of the ocean
Goal 16: Live in peace
Goal 17: Mechanisms and partnerships to reach the goals
In FOCUS: IVD & SDG3 Healthy Lives & Wellbeing

9 MAIN TARGETS

3.1 Reduce maternal mortality ratio
3.2 End preventable neonatal & child mortality
3.3 End AIDS, TB, malaria, NTDs, and other ID’s
3.4 Reduce NCDs, inc. mental health and wellbeing
3.5 Prevention & treatment of substance abuse
3.6 Halve deaths & injuries from road traffic accidents
3.7 Universal access to sexual & reproductive health ed. & care
3.8 Universal health coverage/access to services, vaccines, medicines
3.9 Reduce morbidity & mortality from chemicals & environmental pollution

4 OTHER TARGETS

3a. Strengthen implementation of WHO Framework Convention on Tobacco Control
3b. Support research, development, access to vaccines & medicines for LMIC
3c. Increase health financing and health work force in LMIC, esp. least developed
3d. Strengthen early warning, risk reduction, management of national & global health risks.
IVDs in the WEB

Structural Violence

Transitions
- Demographic
- Urban
- Nutritional
- Epidemiologic

Networks
- Societal
- Community
- Interpersonal
- Individual

Barriers
- Sociocultural
- Financial
- Structural
UNEVEN Distribution by Age, Sex, Cause, Risk (DALYs)

By Age
- 45-49 YO: 12%
- 20-24 YO: 27%

By Sex
- Male: 11%
- Female: 9%

By Cause
- Male: Road Injury, Interpersonal Violence, Self-Harm
- Female: Self-Harm, Road Injury, Fire

By Risk
- Male: Alcohol & Drugs, Occupation, Childhood Sexual Abuse
- Female: Intimate Partner Violence (IPV), Alcohol (and Drugs), Childhood Sexual Abuse

Source: IHME, accessed 2015
And Uneven Regional Variations for “Hot Spots and Hot Pops”:

--Acid attacks on women happen in SEARO but usually not in AMRO or EURO.

--School shootings that target children and adolescents tend to happen more in the US than anywhere else in the world!
• IVD reduces global GDP by 1-3%, and hot spots attract less investment
• Related not only to physical health and economics but also to emotional health, familial stability, social cohesion, and educational opportunities for children
• Globalization & climate change both contribute
• North or South, impact of IVD falls disproportionately on the poorest and most vulnerable

Query: How can IVD affect IDs & NCDs (and vice versa)?
TODAY’S LECTURE

IVD
GDB

Injury:
Unintentional
Intentional (Violence)

Disaster

Prevention & Mitigation
Unintentional Injuries (DALYs)

1. Traffic Injuries
2. Falls
3. Drowning
4. Fire
5. Mechanical Forces
6. Poison

Source: IHME, accessed 2015
Unintentional Injuries (DALYs)

1. Road Traffic Injuries
2. Falls
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4. Fire
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6. Poison

Source: IHME, accessed 2013

- Kill 3-5 million people annually
- Men more affected (except for fire)
Intentional Injuries-Violence

**SELF-DIRECTED**
- Suicide
- Self-Mutilation/Harm

**INTERPERSONAL**
- Person-on-Person
- Intimate Partner Violence (IPV)
- Child Abuse
- Elder Abuse
- Bullying

**GROUP (COLLECTIVE)**
- War
- Terrorism
- Gangs

**MODERN-DAY SLAVERY:**
- Child/Adult Sex Trafficking
- Forced or Bonded Labor
- Child Labor and Soldiering
And what a tangled web it is! For example, the thousands of children who flee the violence and poverty in Central America face violence, exploitation, and sexual abuse both by their facilitators (coyotes) and at their terminal destinations.
Today's Lecture: Disaster: Anthropogenic Natural Complex Emergencies

IVD GDB

Injury

Prevention & Mitigation
**Disaster:** when needed hazard response exceeds local surge capacity

**Anthropogenic Disasters**
- Events such as mining and refining accidents, hazardous spills, nuclear plant meltdowns

**Natural Disasters**
- Events such as earthquakes, Fires, Floods, Drought, Famine, Tornadoes, Hurricanes, and Mudslides

**Complex Emergencies***
- Conflicts that create large-scale disruption and displacements of people, mass food and water shortage, and fragile or failing economic, political, and social institutions

*Natural disasters can exacerbate—or initiate—Complex Emergencies*

*Sometimes called complex humanitarian emergencies (CHE) or disasters (CHD)*
Disaster: when needed hazard response exceeds local surge capacity

Natural Disasters
- Complex Emergencies*
  - Conflicts that create large-scale disruption and displacements of people, mass food and water shortage, and fragile or failing economic, political, and social institutions
  - Natural disasters can exacerbate—or initiate—Complex Emergencies

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Anthropogenic Disasters
- Events such as mining and refining accidents, hazardous spills, nuclear plant meltdowns
- Earthquakes, Fires, Floods, Drought, Famine, Tornadoes, Hurricanes, and Mudslides

CONSIDER:
- Haiti Earthquake
- Syrian Civil War
- Darfur Genocide
- Indian Ocean Tsunami
- South Sudan Famine
- Hurricane Katrina
- Fukushima Nuclear Plant
- Burmese
- Nepal Earthquake
The Complex Burden of Disasters

- disease outbreak
- sexual violence
- mental health issues
- physical trauma
- undernutrition and lack of potable water
- destroyed social structure, institutions, resources
- refugees and internally displaced persons (IDPs)—over 60 million right now
- a longitudinal conflation of category I, II, and III disorders!

UNHCR (Office of the United Nations High Commissioner for Refugees) works to coordinate assistance to refugees (and, increasingly, IDPs as well).

The UN’s Office for the Coordination of Humanitarian Affairs (OCHA) coordinates disaster relief.
TODAY’S LECTURE

- IVD
- GDB
- Injury
- Prevention & Mitigation
- Disaster
## Preparation, Prevention, Damage Control: Injury

### Unintentional
- Prevention strategies & regulations
  - child-resistant packaging
  - motorcycle helmets & seat belts
  - solar stoves
  - labeling of poisons
- Access to First Aid
- Training of 1\textsuperscript{st} responders (lay & prof.)
- Strong emergency medical systems, transport mechanisms, treatment centers
- Surveillance tracking: patterns/ problems

### Violence
- Everything to the left, PLUS:
- Nurturing safe and stable relationships
- Access to mental health, substance abuse, and social support programs
- Nurture life/coping skills: children & youth
- Promoting gender equality & diversity
- Gun control & alcohol moderation
- Fight bullying, trafficking, slavery
- Working to change social, cultural, political norms that normalize, allow, or condone violence
Preparation, Prevention, Damage Control: Injury

Unintentional

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  • Strong emergency medical systems, transport mechanisms, treatment centers
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Violence

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Treat violence like a public health problem. Strategies such as concentric ring theory, contact tracing, primary/secondary/tertiary prevention, harm reduction, and working with social networks to promote education and behavioral change have produce results!
Preparation, Prevention, Damage Control: CEs

- **Preparation and Risk Management:**
  - Regulations (e.g. water control, building codes)
  - Community education/preparedness
  - Access to first aid and first responder training
  - Strong emergency medical systems, transport mechanisms, treatment centers
  - Forward staging of medicines/equipment

- **Response:**
  - WASH (water supply, sanitation, hygiene)
  - Food, shelter, and other necessities
  - Interpersonal and environmental safety
  - Psychological support
  - Essential health services (including reproductive and child health)
  - Infection control (esp. measles, malaria, diarrheal diseases, TB, meningitis)
Let’s Wrap It Up!

- IVD
- GDB
- Injury
- Disaster
- Prevention & Mitigation
NEXT UP:

• W/F Sections:
  • Review Slidesets & Notes
  • Read Case Study Carefully
    – The Great East Japan Earthquake of March 11, 2011

• Next Week: Test #2
  • 20 questions (3 points each) + 3 bonus points
  • Same format as Test #1
  • Comprehensive, including case studies & actors

• And, the winning tobacco control tweet:
Each cigarette smoked reduces your life by 11 minutes, yet more than 3,200 teens start smoking each day. @DukeGHI

BUT THAT’S NONE OF MY BUSINESS