Non-Communicable Diseases During Humanitarian Emergencies

Linda Mobula, MD, MPH
SPIF
November 8, 2017
Non-Communicable Diseases

- Non-communicable diseases, (NCDs), are the leading cause of mortality worldwide

- NCDs are estimated to cause 38 million deaths, mainly due to cardiovascular diseases, diabetes, chronic respiratory diseases and cancer (WHO)
Burden of NCDs

- NCDs are estimated to be responsible for over 60% of global mortality each year with 80% of these deaths occurring in low- and middle-income settings (WHO)

- NCDs now contribute 54% of global Disability-Adjusted Life Years Lost with a majority of this burden afflicting developing countries (Murray et al, 2012)
Figure 1. Total deaths by broad cause group, by WHO Region, World Bank income group and by sex, 2008

(Males)

(Females)

(Note: AFR= African Region, AMR= Region of the Americas, EMR= Eastern Mediterranean Region, EUR= European Region, SEAR= South-East Asia Region, WPR= Western Pacific Region).

WHO, 2010
Epidemiologic transition and emergence of non communicable diseases

Conditioning factors: poverty, education, stress

Globalization
Urbanization

Environmen t & lifestyle changes

Diet
Physical activity
Tobacco

Blood pressure
Cholesterol
Obesity
Diabetes

Mortality & morbidity
Changes in socio-economic structures underlie the physical activity-nutrition transition

- **Shift from preindustrial agrarian economy to industrialization**
  - Less active physical activity for individuals (sedentary habits)
  - Higher availability of cheap processed foods (high fat, high sugar)

- **Profound changes in household technology** *(leads to less PA)*
  - Food availability: canning, refrigeration, freezing, radiation, packaging
  - Food preparation: fossil fuels, electricity, appliances (cooker, mixers)

- **Dramatic shift in leisure activities for adults and children**
  - Time spent for viewing television, computers (sedentary habits)
  - Images/marketing brought to each household (alters consumption)

  ➢ “Pedestrian-hostile, activity-discouraging, fast food-intensive environment”

From traditional to modern eating ....
From traditional to modern food marketing ....
From ancient to modern work ....
From traditional to modern transportation
The Double Burden of Disease
Deaths Due to CVD and Infectious and Parasitic Diseases in 30-69 Year-Olds, Sub-Saharan Africa, 1990

Murray & Lopez, 1996
Projected Changes in Ischemic Heart Disease Mortality in Sub-Saharan Africa

Murray & Lopez, 1996

Deaths in Thousands

MEN

1990: 117
2020: 263

125% increase

WOMEN

1990: 92
2020: 222

141% increase
Projected Changes in Cerebrovascular Disease Mortality in Sub-Saharan Africa, 1990 to 2020

Murray & Lopez, 1996
Millions of cases of DM in 2000 and projections for 2030

Humanitarian emergencies or crises can result from conflicts, natural disasters, epidemic or pandemic diseases, and complex emergencies.

Types of emergencies:

- Acute/rapid onset
- Slow onset
- Protracted/chronic crisis
- Post-crisis
NCDs in Emergencies

- NCDs are rising as a major public health issue in humanitarian settings.

- NCDs have characteristics that can make affected people more vulnerable during an emergency.

- Increase in the risk of NCD-related complications—heart attacks and strokes may be up to 2–3 times more common than in normal pre-emergency circumstances (Haymann, 2012).
Challenges

- Control of NCDs requires ongoing provision of treatment

- During a humanitarian emergency, there is often disruption of services, reduced access to treatment, which can lead to interruption of treatment

- Emergencies can therefore lead to acute exacerbation of a chronic disease
Limited evidence

- Limited evidence based due to challenges in collecting data during an emergency

- A systematic review on the effectiveness of interventions for NCDs in humanitarian settings found eight studies published over the last 35 years (Jobanputra et al.)

- Lack of data on NCD-related epidemiology in emergency settings
NCD services in humanitarian settings

- NCD services in humanitarian settings will vary with resources and geography, health systems, and healthcare personnel.

- Limited data to inform priorities of interventions:
  - Data on burden of disease
  - Availability of service
  - Follow-up care/referrals
  - Sustainability of intervention
Example of an Assessment

**Table 1** Ten essential questions for developing a humanitarian response to NCDs

1. What are the existing capacities of the local health system?
2. Which NCDs to address?
3. Who is the target population?
4. What kind of interventions needed to ensure continuum and continuity of care?
5. Which algorithms or guidelines to use?
6. What medications to be integrated in the basic essential drug list?
7. What are the ethical implications?
8. How to ensure accountability to patients?
9. How to monitor interventions?
10. What to do beyond provision of health services for “classical” NCDs?

Aebishcer Perone et al.
Existing Guidelines

- Humanitarian guidelines provide limited information on NCDs
- Sphere has been revised to include section on NCDs
- World Health Organization
  - Package of Essential Noncommunicable (PEN) Disease Interventions for Primary Health Care in Low-Resource Settings
  - NCDs During Emergencies
- MSF NCD Clinical Guidelines for humanitarian settings
- The UN Interagency Task Force on NCDs (UNIATF)
Sub-sector: Non-communicable Diseases

Overview
USAID/OFDA supports non-communicable disease (NCD) interventions occurring in humanitarian emergencies, particularly in countries with high pre-emergency burden of NCDs. These interventions may include services for those with traumatic injuries (subsequent to natural disasters or conflict) and chronic illnesses and mental health needs (in certain settings).
NON COMMUNICABLE DISEASES

PROGRAMMATIC AND CLINICAL GUIDELINES

Médecins sans Frontières – Operational Centre Amsterdam

V1.95, 27 June 2016
MSF: Prioritization for first 1-3 months

- Clinical management/stabilization and referral of acute exacerbations (life threatening or severely symptomatic)
- Ensure identification of the sub-group of patients for whom discontinuation of treatment can be life threatening
- Ensure continuation of treatment, prioritizing those patients above
- Ensure basic care for symptoms of advanced NCDS
2.6. Essential health services – non-communicable diseases

Population ageing and increase in life expectancy have shifted disease profiles from infectious to non-communicable diseases (NCDs) in many countries including low- and middle-income countries. As a result, NCDs are growing in importance as a major public health issue in disaster settings. Increases in health problems due to the exacerbation of existing chronic health conditions have become a common feature of many disasters.

Essential health services – non-communicable diseases

standard 1: Non-communicable diseases

People have access to essential therapies to reduce morbidity and mortality due to acute complications or exacerbation of their chronic health condition.
Case Study

Prevalence of Hypertension among Patients Attending Mobile Medical Clinics in the Philippines after Typhoon Haiyan

December 20, 2016 · Brief Report

Citation

On November 8, 2013, Super Typhoon Haiyan struck the Philippines, causing a humanitarian emergency.

SP established and staffed a Type 1 field hospital in the parking lot of this heavily damaged hospital.

Conducted mobile medical clinics that deployed daily to remote locations.
Methodology

- Retrospective analysis of 3,730 patients attending clinics conducted by mobile medical teams (MMTs)

- 40 barangays located in central Leyte and Western and Eastern Samar, island provinces within the Philippine Archipelago.

- Patient evaluations included a history and physical, during which vital signs were measured and recorded.
Methodology

- BP pressure readings were recorded in patient medical records, then were entered into an electronic patient database.

- Causes of morbidity were documented and submitted daily to the Department of Health of the Philippines utilizing that department’s “Surveillance in Post Extreme Emergencies and Disasters” (S.P.E.E.D.) forms.
# Prevalence of HTN after Typhoon Haiyan

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean Age (SD)</th>
<th>Hypertension* (n, %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Females</td>
<td>2647</td>
<td>49.7 (17.1)</td>
<td>46% (1223/2647)</td>
</tr>
<tr>
<td>Males</td>
<td>986</td>
<td>52.2 (17.2)</td>
<td>49% (486/986)</td>
</tr>
<tr>
<td>All</td>
<td>3633</td>
<td>50.4 (17.1)</td>
<td>47% (1709/3633)</td>
</tr>
</tbody>
</table>

*Hypertension defined as blood pressure ≥ 140/90 mm Hg.
### Stages of Hypertension

Table 2. Proportion of Mobile Clinic Adult Patients, by Gender, Exhibiting Stage 1 or Stage 2 Hypertension Following Typhoon Haiyan in the Central Philippine Archipelago.

<table>
<thead>
<tr>
<th></th>
<th>Stage 1 Hypertension* (%, n)</th>
<th>Stage 2 Hypertension** (n, %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>22.2% (806/3633)</td>
<td>24.9% (806/3633)</td>
</tr>
<tr>
<td>Female</td>
<td>22.0% (582/2647)</td>
<td>24.2% (582/2647)</td>
</tr>
<tr>
<td>Male</td>
<td>22.7% (224/986)</td>
<td>26.6% (262/986)</td>
</tr>
</tbody>
</table>
NCDs in Syria-protracted crisis

- Conflict in Syria ~ 6 -7 years
- 11 million people displaced
- The magnitude and duration of the conflict and the resulting mass displacement has had a profound effect on NCD care across the region
- Study by the WHO Eastern Mediterranean Regional Office (EMRO), demonstrated that before the crisis 79% of mortality was due to NCDs
- It is unclear what mortality
NCD Kits

- WHO is providing NCD Kits in EMRO region, as a pilot study

- Essential medicines for the management of cardiovascular diseases including hypertension, diabetes mellitus, chronic respiratory diseases and management of some mental health and neurological condition

- [https://m.youtube.com/watch?v=ZZvlKWAOo48&feature=youtu.be](https://m.youtube.com/watch?v=ZZvlKWAOo48&feature=youtu.be)
Ethical Issues

- Disease prioritization
- Resource allocation
- Level of care

Questions:
- Do you treat cancer?
- Dialysis?
References


- Non communicable Diseases in Emergencies. WHO


