Tracking Undernutrition and Obesity

Juan Rivera
Instituto Nacional de Salud Pública

Mexico 2012
178 Million Children Under 5 Suffer from Stunting

Prevalence of Stunting

- No data
- <20%
- 20–29.9%
- 30–39.9%
- ≥40%

High Prevalence of IUGR, Stunting and Severe Wasting in Children Under 5 years of age

13 million babies are born each year with intrauterine growth restriction

178 million children are stunted; 32% of all children

19 million children are severely wasted

Health consequences measured in deaths, contribution to overall rates of disease, and number of life years diminished by disease or disability

Disability-adjusted life years (DALYs): burden of disease measures the gap between the current health of population and ideal situation (living into old age w/ full health)

One DALY = one lost year of “healthy” life

IUGR, stunting and severe wasting together are responsible for **2.2 million deaths and 91 million DALYS**, 21% of the total for children under 5.

Represents **7% of the total global disease burden for any age group**, the highest for any risk factor for disease burden.
Vitamin A and zinc deficiencies account for the largest remaining disease burden among the micronutrient deficiencies – a combined 9.85% of global childhood DALYs.

Iron deficiency is a risk factor for maternal mortality, responsible for 115,000 deaths per year, 20% of maternal mortality.

Suboptimal Breastfeeding

Increases the risk of poor nutrient intake and illness

Estimated to be responsible for 1.4 million child deaths and 44 million global childhood DALYs (10% of all childhood DALYs)

Nutrition Surveillance

- The ACC/SCN report focuses on the use of length and weight measures.

- The areas of potential application discussed in the report are:
  - **Screening: Individual Level - One Time Assessment**
    - to immediately decrease case fatality (emergency situations) b. in non-emergency situations
  - **Growth Monitoring: Individual Level - Assessment Of Trends One Time Assessment At Population Level**
    - under circumstances of food crisis b. for long term planning
  - **Nutritional Surveillance: Population Level - Trend Assessment**
    - for long term planning
    - for timely warning
    - for program management
The burden of Non-Communicable Diseases

- In 2008 of the 57 million deaths globally, 36 million (~2/3) due to NCDs: cardiovascular diseases, cancers, diabetes and chronic lung diseases.
- The combined burden of these diseases is rapidly increasing in lower-income countries.
- About one fourth of the global NCD-related deaths occur before the age of 60.
- A large proportion of NCDs are preventable.
- They share modifiable behavioral risk factors: tobacco use, unhealthy diet, lack of physical activity, and the harmful use of alcohol.
The burden of Non-Communicable Diseases

- These risk factors lead to overweight and obesity, raised blood pressure and raised cholesterol
- If no action is taken, over the next three decades, the cost of NCD burden will amount to trillions of dollars of lost resources
- Feasible and cost-effective interventions to reduce the burden and impact of NCDs exist, and sustained action to prevent risk factors and improve health care can avert millions of preventable premature deaths
Deaths attributable to 16 leading risk factors: all countries, 2007

- Blood pressure
- Tobacco Use
- Cholesterol
- Underweight
- Unsafe sex
- Fruit & vegetable
- High body mass Index
- Physical inactivity
- Alcohol
- Unsafe water, hygiene
- Indoor smoke/fuels
- Vitamin A deficiency
- Zinc deficiency
- Urban air pollution
- Iron deficiency
- Unsafe health/injections

Adapted from World Health Report 2008
Female Prevalence of Obesity (Percent of Adults, Aged 15 and Older, with a Body Mass Index $\geq 25$) 2010
Premature deaths from Non communicable Diseases in Developing Countries

14 million premature deaths due to NCDs

Source: WHO, 2008
Global Distribution of Premature deaths due to NCDs (women)

The Political Declaration on NCDs (66/2)

- Clear focus on 4 NCDs and 4 common risk factors for NCDs

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World Health Organization
UN Secretary-General
The Action Plan for the Global Strategy for the Prevention and Control of Non communicable Diseases addresses key components:

- surveillance
- prevention
- and health care

Surveillance aims to monitor NCDs, and to analyze their social, economic, behavioral and political determinants in order to provide guidance for policy, legislative and financial measures.
Global monitoring framework for NCDs.

**Outcomes**
- Cancer incidence, by type
- Premature mortality from CVD, cancer, diabetes, or CRD

**Exposures**
- Alcohol
- Fat intake
- Low fruit and vegetable intake
- Overweight and obesity
- Physical inactivity
- Raised blood glucose
- Raised Blood pressure
- Raised total cholesterol
- Salt/sodium intake
- Tobacco

**Health system response**
- Cervical cancer screening
- Drug therapy to prevent heart attacks and strokes
- Essential NCD medicines and technologies
- Palliative care
- Policies to eliminate PHVOS from food supply
- Policies to reduce marketing of foods to children
- Vaccination against infectious cancers

*Indicators for NCD surveillance within the global monitoring framework*
Main indicators of under- and over-nutrition and NCDs at population level

**Undernutrition**
- Anthropometric Indicators
  - Height-for-age (Stunting)
  - Weight-for-height (Wasting)
- Blood/serum
  - Hemoglobin (anemia)
  - Serum Zinc (Zn deficiency)
  - Serum Vitamin A (VAD)
  - Serum ferritin (Iron deficiency)
- Diet
  - Breast feeding (WHO Indicators)
  - Complementary feeding (WHO Indicators)
  - Food quality and variety (FFQ)

**Overnutrition and NRCD**
- Morbidity and mortality statistics
- Anthropometric Indicators
  - BMI \((Wt/(ht)^2)\)
  - Waist circumference
  - Hip circumference
- Diet
  - Fruit/vegetable, fat, SSB, energy density of foods
- Physical Activity (PA)
  - TV viewing
  - Moderate to Vigorous PA
- Clinical
  - Blood Pressure
- Biochemical
  - Glucose, Cholesterol, Triglycerides, HDL-c, LDL-c, Insulin, CRP
Prevalence of undernutrition in < 5 years in 1988, 1999, 2006 y 2012 in Mexico

- Underweight
  - 1988: 10.8
  - 1999: 5.6
  - 2006: 3.4
  - 2012: 2.8

- Stunting
  - 1988: 26.9
  - 1999: 21.5
  - 2006: 15.4
  - 2012: 13.6

- Wasting
  - 1988: 6.2
  - 1999: 2.1
  - 2006: 2
  - 2012: 1.6

Prevalence

Socioeconomic Status Quintiles


Prevalence of overweight and obesity * in children 5-11 y, adolescent girls and women (1988 a 2012)

* Classification system proposed by WHO using the 2006 growth norms
Daily Intake of vegetables and fruits in school age children (5-11 y) in Mexico (MNHNS-2006)

* Medias ajustadas por sexo, edad, nivel social y diseño
Trends of SSB Inakes in Mexican Children from 1999 to 2006

Age at which food groups were regularly consumed by Mexican children <2 years of age

# Main Indicators of Under- and Over-Nutrition and NRCD at Population Level

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Discussion about possible Networking between NPHIs for Tracking Under And Overnutrition