Global Health Challenges
(Maternal and Childcare)

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Global Health Challenges

Today’s global health challenges are increasingly **urgent** and **complex**.

**To improve health in the population, Public Health measures must be sustainably implemented within multi-sectoral stakeholders.**
Urgent Global Health Issues

- Maternal and childcare
- Diarrheal diseases, respiratory infections
- Impact of climate change/global warming
- The rise of non-communicable diseases
- Crises of food supplies
- Crises of water supplies
- Vector-born diseases
- HIV and TB
- Parasites, zoonosis, H. Pylori
- Obesity, undernutrition
- Mental health
Millennium Development Goals

• Some progress has been made towards achieving MGDs 4 and 5. However, such progress is insufficient to achieve the goals by 2015 vis-à-vis maternal, newborn and under-five morbidity and mortality.

• Community-based interventions are crucial for the attainment of MGDs 4 and 5.
  – Such approaches should also include public health measures and control.
Maternal and Child Health

Healthy children need healthy mothers
Health mothers contribute to healthy society
# Maternal and Child Mortality – The Gap!

<table>
<thead>
<tr>
<th>Region</th>
<th>Mothers Mortality*</th>
<th>Share of Global Mortality</th>
<th>Children under five Mortality*</th>
<th>Share of Global Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia and the Pacific</td>
<td>325</td>
<td>44%</td>
<td>59</td>
<td>41%</td>
</tr>
<tr>
<td>Africa</td>
<td>900</td>
<td>54%</td>
<td>157</td>
<td>49%</td>
</tr>
<tr>
<td>The Americas</td>
<td>99</td>
<td>3%</td>
<td>21</td>
<td>7%</td>
</tr>
<tr>
<td>Europe</td>
<td>27</td>
<td>1%</td>
<td>16</td>
<td>3%</td>
</tr>
</tbody>
</table>

* maternal mortality is per 100,000 live births; under-five mortality is per 1,000 live births.

Source: WHO (Investing in Maternal, Newborn and Child Health - The Case for Asia and the Pacific)
UNICEF (2011) announced that although considerable progress towards improving the health of mothers and children in certain regions of the world, disparities within these countries persist, making this progress inequitable.
Why are M, I, and C Health Important?

- Health **risks**
  - Hypertension and heart disease
  - Diabetes
  - Depression
  - Genetic conditions
  - STDs
  - Tobacco and alcohol use
  - Inadequate nutrition
  - Unhealthy weight
Key Facts

• Worldwide, 358,000 women die during pregnancy and childbirth, annually.

• Estimated 7.6 million children die under the age of five.

• Majority of maternal death occur
  – During childbirth, or
  – Immediately after childbirth

Source: Maternal, Newborn and Child Health Summit, May 2013, WHO Philippines, Manila
Key Facts

• Common medical issues for maternal death include:
  – Bleeding
  – Anemia
  – Hypertensive disorders
  – Prolonged and obstructed labor
  – Eclampsia
  – Infections/sepsis
  – Unsafe abortions

• A child's risk of dying is highest during the first 28 days of life.

Source: Maternal, Newborn and Child Health Summit, May 2013, WHO Philippines, Manila
Key Facts

• Globally, the main causes of neonatal death are:
  – Preterm birth
  – Severe infections
  – Asphyxia

• Children in low-income countries are nearly 18 times more likely to die before the age of five than children in high-income countries.

Source: Maternal, Newborn and Child Health Summit, May 2013, WHO Philippines, Manila
Key Facts

• 70% of global deaths among newborn babies happen in just two WHO regions:
  • Africa
  • South East Asia

Source: Maternal, Newborn and Child Health Summit, May 2013, WHO Philippines, Manila
Maternal Health & Developing Countries

• A woman in sub-Saharan Africa has a 1 in 16 chance of dying in pregnancy or childbirth, compared to a 1 in 4,000 risk in a developing country

  – The largest difference between poor and rich countries of any health indicator.
Maternal Death Issues

• Inadequate medical and midwife support

• Lack of access to emergency & intensive care

• Lack of management capacity in the health system

• No political will and lack of management capacity in the health system
Maternal Death Issues

• **Malaria** is another risk. It can lead to **anemia**, which increases the risk for maternal and infant mortality and developmental problems for babies.

  – A majority of these deaths and disabilities are preventable, being mainly due to insufficient care during pregnancy and delivery.
Anemia: A Global Public Health Problem

• Contributes to 20% of death among pregnant women.
• WHO estimates 2 billion people – over 30% of the world’s population – are anemic.
• Nearly half of all pregnant women suffer from anemia
  – 52% in low-income countries
  – 23% in high-resource regions

Short-term Risks of Anemia

• Mother
  – *Antepartum:* prone to infections, preterm labor, LV failure
  – *Intrapartum:* Heart failure, postpartum hemorrhage, shock
  – *Postpartum:* Heart failure, sepsis, uterine sub-involution, increased cesarean delivery mortality

• Fetus/child: Increased stillbirth, morbidity and mortality due to intrauterine growth restriction, prematurity, sepsis

Maternal Death Issues

- **HIV** infection is an increasing threat.

- Mother-to-child transmission of HIV continues to be a major problem, **with up to 45 per cent of HIV-infected mothers transmitting infection to their children.**

- Further, HIV is becoming a major cause of maternal mortality in highly affected countries in **Southern Africa**, especially with the TB re-emergency.
HIV/TB Co-infection in Haiti

Coupet/Nassiri study in Haiti
In Collaboration with Albert Schweitzer Hospital
The problem of TB not as a medical problem alone, but to consider it holistically in the context of socioeconomic background.

Underlying causes of Child illness and death

- **Poverty**: more than 250 million children under five live in absolute poverty, on less than $1 per day.

- **Under-nutrition and malnutrition**: at least 200 million children under five are malnourished.

Source: WHO
Infant and Neonatal Mortality

- Infant mortality rate is made up of two components:
  - **Neonatal** mortality (death in the first 28 days of life)
  - **Postneonatal** mortality (death from the infants’ 29th day but within the first year)

- The leading causes of neonatal death:
  - Birth defects
  - Disorders related to short gestation
  - LBW and pregnancy complications
Under-five Mortality Rate

- A result of wide variety of inputs:
  - Nutritional status and the health knowledge of mothers
  - Level of immunization and oral rehydration therapy
  - Lack of maternal and child health services (including prenatal care)
Under-five Mortality Rate

- Income and food availability in the family
- Availability of safe drinking water and basic sanitation
- Safety of the child’s environment
- Is a picture of the health status of the majority of children and of society as a whole
Children < 5 Years Mortality (WHO: 2010)

- Globally, 80 percent of all child deaths to children under five are due to only a handful of causes:
  - Pneumonia (19 %)
  - Diarrhea (18 %)
  - Malaria (8 %),
Children < 5 Years Mortality (WHO: 2010)

- Globally, 80 percent of all child deaths to children under five are due to only a handful of causes:
  - Neonatal pneumonia or sepsis (10 %)
  - Pre-term delivery (10 %)
  - Asphyxia at birth (8 %)
  - Measles (4 %)
  - HIV/AIDS (3 %).
Causes of under-five deaths in India: 2010

- Malnutrition: 34%
- Neonatal: 55%
- Other: 15%
- Infections: 29%
- Preterm: 24%
- Other: 20%
- Asphyxia: 19%
- Congenital: 3%
- Diarrhoea: 3%
- Tetanus: 1%
- Malaria: 0%
- Measles: 4%
- Pneumonia: 11%
- HIV/AIDS: 1%
- Injuries: 3%

Source: WHO/CHERG 2010
Bhutta et al
New Eng J Med
369;23, Dec5, 2013
Emerging and Reemerging Challenges

- HIV/AIDS and TB plus MD-resistant TB
- Dengue
- Viral hemorrhagic fever
- Cholera outbreaks in Africa, Asia, and Haiti
- Avian and swine flu
- Conflicts, wars and infrastructure destruction
- Poor governance and ineffective polices
Maternal and Neonatal Tetanus

34 Countries eliminated MNT between 2000 & December 2013
*(Plus 18 States out of 35 in India, Ethiopia part and 29 provinces out of 33 in Indonesia) leaving 25 countries yet to eliminate MNT

Data Source: WHO/UNICEF database, December 2013
194 WHO Member States.
Map production: Immunization Vaccines and Biologics, (IVB), World Health Organization
Date of Slide: 03 Jan 2014
Rape Victim

A nurse dresses the wound of rape victim, 25, while a student nurse assists, on the traumatic fistula ward of the HEAL Africa Hospital in Goma, Democratic Republic of Congo. Photo by Mary F. Calvert / Zumapress / Newscom.
Core Interventions to Prevent Child Deaths

- Vaccination
- Folic acid supplementation
- Tetanus toxoid
- Syphilis screening and treatment
- Pre-eclampsia and eclampsia prevention (calcium supplementation)
- Intermittent presumptive treatment for malaria in pregnancy
Core Interventions to Prevent Child Deaths

- Antibiotics for premature rupture of membranes
- Detection and management of breech (C-section)
- Labor surveillance
- Clean delivery practices
- Breastfeeding
Core Interventions to Prevent Child Deaths

- Zinc for diarrhea
- Hib vaccine
- Water, sanitation, hygiene
- Vitamin A for respiratory infections
- Nevirapine and replacement feeding to prevent HIV transmission
- Measles vaccine
- Antimicrobials for dysentery and sepsis
Prevention of Bilirubin-Induced Neurologic Dysfunction

Need for evidence-based technologies to affordably screen for BIND or other conditions such as G6PD deficiency, especially in resource-limited countries.

Baghdad, Iraq, 2010: Infant with sequelae of acute bilirubin encephalopathy, At age 8 days.

Source: Bhutani and Stevenson, Seminars in Perinatology, 2011.
Maternal Child Health Services
Maternal Child Health Services

Misoprostol to Prevent Postpartum Hemorrhage (PPH)

- PPH is a major cause of maternal mortality in the developing world.
- Most resource-limited countries have yet to explore Misoprostol at a public policy level. In the meantime, high rates of maternal mortality due to PPH persist.
Continuum of Care for Reproductive, Maternal, Newborn and Child Health

RMNCH Dimensions
- Time
- Place

Lifecycle:
- Pre-pregnancy
- Pregnancy
- Postnatal
- Childhood

Health Facilities
Community Household

Reproductive Health Interventions
Maternal Health Interventions
## Interventions to improve Child Health

<table>
<thead>
<tr>
<th></th>
<th>Home and Community</th>
<th>First-level facility</th>
<th>Referral Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pregnancy</strong></td>
<td>Promote &amp; support antenatal care</td>
<td>Detection &amp; management of complications of pregnancy</td>
<td>Management of severe complications</td>
</tr>
<tr>
<td><strong>At birth</strong></td>
<td>Promote and support skilled care at birth</td>
<td>Immediate newborn care</td>
<td>Management of obstetric complications</td>
</tr>
<tr>
<td><strong>Newborn period</strong></td>
<td>Promote and support key newborn care practices</td>
<td>Management of newborn illnesses</td>
<td>Management of severe newborn illnesses</td>
</tr>
<tr>
<td><strong>Infancy and Childhood</strong></td>
<td>Community case management of diarrhea &amp; ARI</td>
<td>Standard case management during childhood illnesses</td>
<td>Management of severe childhood illnesses</td>
</tr>
</tbody>
</table>
Public Health

MISSION:

...assuring conditions in which people can be healthy
Public Health

- To promote health
- To prevent diseases
- To prolong the life through organized efforts of the society.
Public Health – Way Forward!

GOVERNMENTAL ROLE:

• Assessment
• Policy Development
• Assurance
• Partnership with
  – Universities
  – Public Health sectors
  – Private sectors
  – Professional organizations (e.g., IMI)
Challenges in Resource-limited Countries:

- **Public Health Statistics** - participation in mechanism for collection, tabulation, analysis and reporting for health jurisdiction served

- **Health Education** - public and professional information and education with **emphasis on prevention**

- **Nutritional Services** - nutrition program including appropriate activities in education and consultation for promotion of positive health, prevention of ill health, and dietary control of disease

- **Maternal and Child Health** - comprehensive plan for maternal and child health services to include prenatal, childbearing and reproductive care, family planning, child and adolescent health, child abuse, genetic disease control
Challenges in Resource-limited Countries:

- **Communicable and Chronic Disease Control** - preventive services including immunization, screening, referral for treatment, prevention and control of vision, hearing, dental problems

- **Environmental Services** - water, food, air, wastes, vectors, housing, bathing places, safety, noise, toxic hazards, nuisances

- **Community Nursing Services** - Provision of community nursing

**IMPACT:** approaches must be integrated, multidisciplinary and evidence-based.
Syria

Source: U.N. and UNICEF

- 5.5 M infants and children affected
- Devastating effects on education and health
- Malnutrition and illness have stunted children’s growth
Ali Shaaban is one day old and **weighs 1.75 pounds**. He was born prematurely, 28 weeks into his mother's pregnancy. He was brought to the Children's Hospital in Damascus. Doctors are waiting for a free incubator to place Ali in. His lungs are not fully developed and he needs help breathing.
Polio in Syria: An outbreak that threatens the Middle East

A child in eastern Syria with legs paralyzed because of polio.

Source: BBC, March 25, 2014

As summer approaches, health agencies are warning of the risk of polio spreading across the Middle East from Syria - where now more than 100 children show symptoms of the disease.
Syrian Conflict: A Public Health Disaster

Before the uprising started, Syria boasted nearly 500 hospitals and healthcare center and 70 licensed pharmaceutical manufacturers that supplied 90 percent of the nation’s drugs. All that has changed!
Investment in Global Health

Improving Health Service Delivery Systems

STRENGTHEN HEALTH SYSTEMS
What’s the most critical investment in global health over the next 5 to 10 years? About 2 out of 3 respondents agreed – and it mirrors a trend as developing country governments and their international partners sharpen their focus on strengthening health systems.

Source:
Opportunities for Medical Professionals Serving Abroad
Kenya Well Project
Kenya Well Project

Access to clean water
Amazon Community Medicine Project
Community Medicine, Brazilian Amazon
Community Medicine, Brazilian Amazon
Community Medicine, Brazilian Amazon
Community Medicine, Brazilian Amazon
Institute of Tropical Medicine, Belem, Brazil
Community Health Clinic, outside Belem, Brazil
Amazon Community Medicine Project
Community Medicine – Dominican Republic
La Piedra, Dominican Republic

- Donations
Health Mission Trip
Dominican Republic
Community Health Volunteer and Clinical Shadowing
Dominican Republic
Clinical Exposure
Dominican Republic
International Young Doctors Training
Hon. Ivonne Ortega, Governor
Merida, Yucatan, Mexico

MSUCOM clinic under construction
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