Neglected Tropical & Zoonotic Diseases and their Impact on Women’s and Children’s Health

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Today’s Talk

- Frameworks, models, and contexts
- NTDs and women
- NTDs and children
- What is needed to address NTDs in women & children?

Photo: Steven Stewart
The 8 Millennium Development Goals (MDGs)

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development
The Convergence Model

*Microbial Threats to Health: Emergence, Detection, and Response. (IOM 2003)*
NTDs and Women & Children: Genetic and Biological Factors

- **Women** are vulnerable due to reproductive functions of pregnancy and childbirth
- **Women** are biologically more vulnerable to STIs than men
- **Children** are especially vulnerable to infectious diseases and their impacts
- **Children** are vulnerable to environmental exposures and developmental stresses
NTDs and Women & Children: Physical and Environmental Factors

• Global urbanization
  ---By 2050, 70% of the world’s population will live in cities (WHO, 2009)

• Poor housing

• Lack of sanitation
NTDs and Women & Children: Ecological Factors

- Disasters
- Safe water availability
- Water collection
NTDs and Women & Children: Social, Political, & Economic Factors

- Poverty
- Illiteracy
- Lack of education
- Lack of land ownership
- Lack of political power
- Gender inequality
Gender Inequality

- Gender inequality is pervasive globally and is manifested in many ways
- Gender roles create burdens (water collection) and limits opportunities (education), promoting women’s poverty
- Women-controlled infectious disease protection is limited or non-existent
- Gender inequality inhibits infectious disease prevention in women
NTDs and Women & Children: Social, Political, & Economic Factors, \textit{con’t}

- Violence against women
- Child marriage & child labor
- Gender inequality-based practices (e.g., “honor” killing)
- Limited health care services
Approximately 1 billion people are affected by more than one NTD
How NTDs Negatively Impact Women’s Health

REPRODUCTIVE HEALTH
--FERTILITY, PREGNANCY, NEONATAL HEALTH

SEXUAL HEALTH
--SEXUALLY TRANSMITTED INFECTIONS
--SEXUAL FUNCTIONING

SOCIAL HEALTH
--EXCLUSION AND STIGMA

ECONOMIC HEALTH
--ABILITY TO WORK

Adapted from Hotez, PJ. 2009.
Women, Trachoma, and Blindness

- One million women are blinded by trachoma each year (WHO 2009)

- Trachoma disproportionately affects women because women get infected from caring for infected children (Hopkins, 2009)

- Women are three times more likely than men to be permanently blinded by the disease (Hotez 2008)
Women, Stigma, & Lymphatic Filariasis (LF): “Can it be that God does not remember me?”

- LF causes extreme social isolation and stigma for women (Person 2009)
- LF affects women’s ability to support themselves
- Young women with LF kept from education, unable to get married
- Women with LF suffer psychological distress, hopelessness, shunning, and discrimination (Person 2008)
Women and Schistosomiasis

- Estimated 56 million women (WHO, 2009)
- Associated with women’s increased risk of acquiring HIV
- Associated with fatigue and lowered productivity (King 2008)
- Associated with ectopic pregnancy (Friedman, 2007)
- Associated with dyspareunia (King, 2008)
- Associated with infertility (Friedman, 2007)
Reproductive Consequences of Neglected Infections for Women

- Maternal morbidity
- Anemia in pregnancy
- Low birth weight (LBW), stillbirth, neonatal death
- Birth defects
- Sexual health
- Infertility
- Heightened risks for HIV
Mass Drug Administration (MDA) and Pregnancy: Challenges

- Most pregnancies are not planned and many women have serial pregnancies

- Soil transmitted helminths (STHs) can be treated safely in pregnancy, but pregnant women may not always receive treatment

- Schistosomiasis treatment in pregnancy with praziquantel (PZQ) was recommended by WHO in 2002, but lack of pregnancy safety trials limits use in pregnant women

- LF is not treated in pregnant women, leaving them both vulnerable to LF and a potential disease reservoir
How NTDs Negatively Impact Children’s Health

- Death
- Anemia
- LBW, Small for gestational age (SGA)
- Birth defects
- Stunting
- Cognitive impairment
- Heightened risk for HIV, possible heightened risk of malaria
Children & Soil-transmitted Helminths (STHs) (Ascariasis, Trichuriasis, and Hookworm)

- Intestinal helminths are a major cause of morbidity in children globally
- STHs are associated with anemia in children
- STHs stunt children’s physical growth and cognitive development
Child Development Consequences of NTDs

- Growth—resulting in decreased height and weight
- Ability to learn
- Immune response
- Social & psychological development
Addressing NTDs Effectively Requires Addressing Women’s Poverty

- Universal education
- Economic development for women (microfinance, cooperatives, training)
- Ban of policies based in inequality
- Enforcement of violence against women laws
- Promote women’s leadership in science and health
Understanding how health is transmitted across lifetimes and generations

Social Advantage and Health Across Lifetimes and Generations

Social disadvantage and health disadvantage accumulate over time, creating ever more daunting obstacles to health.

Source: Paula Braveman
What is needed to address NTDS in women and children?

• Paradigm shift from mortality-only to chronic and disabling disease focus
• Promote use of Quality Adjusted Life Years (QALYs)
• Educate poly-parasitized populations about risks & prevention
• Encourage prevention innovations (e.g., antimicrobial washcloths)
• Disaggregate data by gender
• Address MDA challenges for pregnant women
• Intensify research on prevention of NTDs in pregnant women
• Intensify research on how NTDs impact child health & development
Enhance Women’s Role in Fighting NTDs

- Implement “women-centered” as a way to promote skill-building in women
- Develop NTDs training for wide range of healthcare providers, including lay providers such as birth attendants
- Develop NTDs fellowships and other training opportunities for women and men
Improve women’s health, improve the world.

*Women and Health*

WHO 2009, page 89
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