Module 2. NTD Strategies

Session 4. Water, Sanitation, and Hygiene
Outline

- WASH to reduce NTD burden
- The need to improve access to safe water
- Water and NTDs
- The need of promoting access to sanitation
- Sanitation and NTDs
- Health promotion and NTDs
- Rationale for WASH – NTD collaboration
- Key messages
## What is WASH?

<table>
<thead>
<tr>
<th>Water</th>
<th>Access to safe water for, drinking, face washing, hand-washing, body washing and cleaning of foodstuffs to prevent or minimize infection.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitation</td>
<td>Sanitary latrines keep infected human excreta from coming into contact with humans, animals and vectors, thereby minimizing the risk of re-infection in treated individuals and preventing new infections.</td>
</tr>
<tr>
<td>Hygiene Promotion</td>
<td>Personal and environmental hygiene campaigns in communities to promote positive behaviors to prevent infection.</td>
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</table>

More than 840,000 people in low- and middle-income countries die as a result of inadequate water, sanitation and hygiene each year, representing 58% of total diarrhoeal deaths (WHO, 2012).
WASH for NTD Control

Refers to sustainable water, sanitation, and hygiene (WASH) services that are essential for the prevention, long-term control, and even elimination of the preventive chemotherapy NTDs:

- Soil-transmitted helminthiasis (STH)
- Trachoma
- Schistosomiasis
- Food-borne trematodes
- Onchocerciasis
- Lymphatic filariasis (LF)
A single WASH intervention can impact multiple NTDs. The table below shows examples of how water and sanitation interventions can be implemented to target multiple diseases.

<table>
<thead>
<tr>
<th>Type of intervention</th>
<th>Specific intervention</th>
<th>Diseases Impacted</th>
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<tbody>
<tr>
<td>Water</td>
<td>Increasing access to sufficient amounts of safe water for personal hygienic purposes (e.g., washing hands, face or body; bathing; laundry)</td>
<td>STH, schistosomiasis, trachoma, lymphatic filariasis</td>
</tr>
<tr>
<td>Sanitation</td>
<td>Eliminating open defecation</td>
<td>STH, schistosomiasis, trachoma</td>
</tr>
<tr>
<td>Hygiene</td>
<td>Hand washing/face washing&lt;br&gt;Behavioural change for water contact&lt;br&gt;Food-eating habits</td>
<td>STH, trachoma&lt;br&gt;Schistosomiasis&lt;br&gt;Food-borne trematodes</td>
</tr>
</tbody>
</table>
Role of Water, Sanitation and Hygiene (WASH) to Reduce NTD Burden

• Sustain and consolidate gains made possible through PC.

• Primary prevention:
  – Availability of sanitation facilities is associated with protection against STH infection (OR=0.54, 95% CI 0.44-0.61)*
  – Use of treated water is associated with lower odds of STH infection (OR 0.46, 95% CI 0.36–0.60)**
  – Wash hands after defecation (OR 0.47, 95% CI 0.24–0.90)**

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* Ziegelbauer et al, PLoS NTDs, 2012
** Strunz et al., PLoS Medicine 2014.
Schistosomiasis and Water Supply Encouraging Studies

- **Cameroon**
  - S. haematobium prevalence focus declined from 12% to 0% over 13 years\(^1\)

- **Ghana**
  - Swimming pool reduced annual incidence in children from 13.4% to 3.7%\(^2\)

1. Tchuenté et al., 2001
2. Kosinski et al., Plos NTD 2012
The Need to Improve Access to Safe Water: MDG 7

By 2015, reduce by half the proportion of people who in 1990 had no access to safe drinking water and basic sanitation.

**Drinking Water**
- MDG target is met at: 88%
  - **Coverage in 2012:** 89%
  - 116 countries met MDG target

**Sanitation**
- MDG target that will not be met: 75%
  - **Coverage in 2012:** 64%
  - 77 countries met MDG target
Drinking Water Safety From Source to Tap

How can we assess the risks all along the water distribution system?
Three Key WSP Objectives

- Minimize contamination of source water
- Prevent contamination at the household level
- Sanitation and hygiene are key to avoid contamination
- Reduce or remove contamination by treatment
WSPs is a preventive risk management system for drinking water suppliers, from catchment to consumer. “..the most cost-effective and protective means of consistently assuring a supply of acceptable drinking-water”. *

1. Identify hazards and assess likelihood and severity of it to prioritize it as risk.

2. How do we control each risk?

3. How can we know each risk is effectively under control?

Sanitation and hygiene are key to avoid contamination.

Sanitation and hygiene are key to avoid contamination.

**Seven Steps of a Rural WSP**

1. **Engage the community and assemble the WSP team**
2. **Visit and survey the water supply system**
3. **Map the water supply system**
4. **Analyze hazards and define risks, prioritize**
5. **Establish risk control measures and set up WSP management plans**
6. **Confirm the WSP team and their roles**
7. **Document, review and revise the WSP**
Household Water Treatment and Storage/HWTS

- Drinking water quality inside the households depends on hygiene practice.
- HWTS is about promoting low-cost interventions to disinfect water and store it safely.
- Chlorination, solar disinfection, boiling, filtration, flocculation, main treatment options. Safe storage also contributes to reduce breeding sites of vectors.
- Promotion of behavioral changes for better hygiene, include access to appropriate sanitation.
- HWTS integration in national policy dialogue has gone a long way in many countries.
WATER and the NTDs

- STH - safe water for hand-washing, hand-washing after defecation, and washing potentially contaminated food.
- SCHISTO - access to safe water to decrease contact with contaminated surface water. Collecting water, washing clothes and recreational swimming away from contaminated water. Water management in irrigation schemes.
- TRACHOMA - Increase access to water to promote household hygiene practices, including Face-washing and clean Environment.
- LF - Reduction of breeding sites of LF vectors in and around household; safe water to reduce secondary infections.
The Need to Improve Access to Basic Sanitation: MDG 7

By 2015, the world will not meet the sanitation target

There are 46 countries where less than half the population has access to an improved sanitation facility.

Fig. 9. Proportion of the population using Improved sanitation in 2012

Fourteen per cent of the global population, or one billion people, practice open defecation

*Progress on Drinking-Water and Sanitation 2014 update, WHO UNICEF*
Community-Led Total Sanitation/CLTS

Basic aim: separate and confine faeces from human contact

• **Lessons learned:** sole provision of subsidized latrine hardware, does not work in the long run, unwanted latrines remain unused, because supply does not match demand.

• **CLTS:** An innovative approach mobilizing communities to eliminate open defecation. Communities, with technical guidance, conduct their own appraisal of local open defecation (OD), plan and act to become open defecation free (ODF).

• Subsidies should be for hygiene promotion and sanitation marketing programmes to support local SAN providers.

Sanitation and the NTDs

- **STH** - Reduce open defecation to minimize soil contamination. Avoid use of untreated human excreta as fertilizer.
- **SCHISTO** - Reduce open-air defecation and urination to minimize contamination of freshwater sources and infection of snails.
- **TRACHOMA** - Eliminate open-air defecation deposits to cut down on eye-seeking flies, which breed in human faeces. Promote clean environment.
- **LF** - Remove open sewer systems and black water drainage that provide breeding site for vector mosquitoes.
Hygiene Promotion: “Fit for School”

• Alliances and partnerships between the Southeast Asian Ministers of Education Organisation (SEAMEO), the German Agency for International Cooperation (GIZ), UNICEF, WHO and other international and national stakeholders are working in pilot schools in the Philippines, Indonesia, Lao PDR to institutionalize:
  – the daily supervised hand washing with soap,
  – tooth brushing with fluoride toothpaste,
  – hygiene practice, and
  – biannual deworming.
• Significant improvements in BMI and reduction of STH infection and dental caries amongst surveyed school children has spurred scale up and fostering knowledge-sharing to improve education and health outcomes in the Region.
• NTD-WASH teams could integrate the joint interventions within the Regional School Health Program: Fit for School Expansion. More at: http://www.seameo-innotech.org/projects-ongoing/regional-school-health-program/
Hygiene Promotion and NTDs

- **STH** - Wear shoes when outside. Wash hands before eating, after defecation. Wash fruits and raw vegetables before eating them. Disposal of child faeces properly.
- **SCHISTO** - Discourage use of contaminated surface water for bathing, washing clothes, swimming. Prevent defecation and urination in fresh water sources. Use boots and gloves when working in irrigation fields.
- **FOOD-BORNE TREMATODES** - Do not eat raw fish. Proper management of commercial fisheries.
Hygiene Promotion and NTDs

- **TRACHOMA** - Wash face to remove eye and nasal discharge contaminated with bacteria. Wash clothing and bedding regularly with soap to prevent further disease spread. Clean compounds regularly to help decrease number of flies.

- **LF** - Encourage daily washing of infected limbs with soap and water (especially between fingers and toes) to reduce risk of secondary infections. Promoting exercise and wound treatment can reduce swelling and enable the individual to gain more mobility.
Integration of Water, Sanitation, and Hygiene for the Prevention and Control of Neglected Tropical Diseases: A Rationale for Inter-Sectoral Collaboration

Matthew C. Freeman1,9, Stephanie Ogden1,2,3,9, Julie Jacobson4, Daniel Abbott5, David G. Addiss2, Asrat G. Amnie6, Colin Beckwith7, Sandy Cairncross7, Rafael Callejas8, Jack M. Colford, Jr.9, Paul M. Emerson10, Alan Fenwick11, Rebecca Fishman12, Kerry Gallo2, Jack Grimes11,13, Gagik Karapetyan14, Brooks Keene15, Patrick J. Lammie16,17, Chad MacArthur18, Peter Lochery15, Helen Petach19, Jennifer Platt12, Sarina Prabasi20, Jan Willem Rosenboom4, Sharon Roy21, Darren Saywell22, Lisa Schechtman23, Anupama Tantri24, Yael Velleman25, Jürg Utzinger26,27

1 Department of Environmental Health, Emory University, Atlanta, Georgia, United States of America, 2 Children Without Worms, Taskforce for Global Health, Atlanta, Georgia, United States of America, 3 International Trachoma Initiative, Taskforce for Global Health, Atlanta, Georgia, United States of America, 4 Bill & Melinda Gates Foundation, Seattle, Washington, United States of America, 5 Save the Children, Washington, D.C., United States of America, 6 Hubert Department of Global Health, Emory University, Atlanta, Georgia, United States of America, 7 Faculty of Infectious and Tropical Diseases, London School of Hygiene & Tropical Medicine, London, United Kingdom, 8 Millennium Water Alliance, Washington, D.C., United States of America, 9 Department of Epidemiology, University of California-Berkeley, Berkeley, California, United States of America, 10 The Carter Center, Atlanta, Georgia, United States of America, 11 Schistosomiasis Control Initiative, Imperial College, London, United Kingdom, 12 WASH Advocates, Washington, D.C., United States of America, 13 Department of Civil and Environmental Engineering, Imperial College, London, United Kingdom, 14 World Vision, Washington, D.C., United States of America, 15 CARE International, Atlanta, Georgia, United States of America, 16 Taskforce for Global Health, Atlanta, Georgia, United States of America, 17 Center for Global Health, United States Centers for Disease Control and Prevention, Atlanta, Georgia, United States of America, 18 Helen Keller International, New York, New York, United States of America, 19 United States Agency for International Development, Washington, D.C., United States of America, 20 ORBIS International, New York, New York, United States of America, 21 Waterborne Disease Prevention Branch, United States Centers for Disease Control and Prevention, Atlanta, Georgia, United States of America, 22 Plan International, Washington, D.C., United States of America, 23 WaterAid America, Washington, D.C., United States of America, 24 Sabin Vaccine Institute, Washington, D.C., United States of America, 25 WaterAid UK, London, United Kingdom, 26 Swiss Tropical and Public Health Institute, Basel, Switzerland, 27 University of Basel, Basel, Switzerland
Rationale for WASH – NTD Collaboration

From the NTD Perspective

• Long-term success for NTD control requires WASH.
  – STH
  – Schistosomiasis and FBT
  – Trachoma
  – LF
  – Guinea worm (global eradication!)

• Similar vision, geographic foci, and population at-risk
Rationale for WASH – NTD Collaboration
From the WASH Perspective

• Could (specific) NTDs serve as health indicators for the WASH sector?
  – Data already collected by NTD control programmes (prevalence, transmission sites)
  – What would be the best platform to share these data with WASH?

• Collaboration toward shared goals

• Common vision: Communities that are disease free and have adequate and equitable access to water and sanitation and practice good hygiene.
  – Advocacy
  – Funding
Rationale for WASH – NTD Collaboration

• Are there easy, low-cost collaborations?
  – Incorporate face-washing into hygiene education
  – Include sanitation and hand-washing education in training
  – Mapping/monitoring NTD as proxy of sanitation coverage (shared databases and indicators)

• Knowledge gaps/research
  – What WASH interventions have the greatest impact on NTDs?
  – Cost/benefit, cost/effectiveness
How can NTD/WASH Teams Work Together?

Suggested 10 step approach:

1. Set up a national WASH/NTD team.
2. Share data, maps, identify areas, exchange success and shortfalls of past actions, avoid overlap, know on-going and planned actions, identify “win-wins”.
3. Get to know who is doing what, where, with whom, and how? Map partners.
4. Collect key policy frameworks justifying WASH and NTD interventions.
5. Prioritise intervention areas based on selected criteria for impact and feasibility.
6. During joint field visits engage local authorities and community leaders.
7. Share and assess existing WASH and NTD communication materials.
8. Prepare a draft joint national/provincial/district level action plan, specifying human, technical, and financial resources, obtain endorsement by all parties.
9. Implement the action plan, using monitoring indicators, conduct regular progress assessment meetings, and adjust the action plan exploiting lessons learnt.
10. Formalize the process developing needed policies and institutional frameworks.
Why Integrate WASH to Improve Community Health?

- WASH issues, beyond NTDs
- Reduction of breeding sites of dengue and malaria vectors in and around households.
- Improve WASH services in healthcare facilities to diminish infection risk and reduce the prevalence of maternal and neonatal deaths.
- Promoting WASH in households and functioning WASH services in schools reduce malnutrition amongst children.
WHAT DO YOU THINK ARE THE KEY MESSAGES FROM THIS SESSION?
Key Messages

• WASH interventions are essential to reduce NTD burden and transmission.
• Water, sanitation, and hygiene promotion have specific impact on all PC diseases.
• Collaboration and integration between WASH and NTDs have commonalities and yield mutual benefits.