Module 2. NTD Strategies

Session 1. Overview of NTD Strategies
Overview

- Preventive Chemotherapy (PC)
- Intensified Disease Management (IDM)
- Control of Neglected Zoonotic Diseases
- Integrated Vector Management
- Water and Sanitation
- Health Education
- Capacity Building
WHO Resolutions

WHA50.29 Elimination of lymphatic filariasis as a public health problem (1997)

… community-wide treatment strategies, but supplemented where feasible by vector control and improved sanitation …

… managing morbidity and preventing disability among people who have already been affected by the disease.

WHA51.11 Global elimination of blinding trachoma (1998)

regular treatment of high-risk groups …

including surgery for inturned eyelids, antibiotics use, facial cleanliness and environmental improvement (the SAFE strategy)

WHA54.19 Schistosomiasis and soil-transmitted helminth infections (2001)

… promote access to safe water, sanitation and health education through intersectoral collaboration;

WHA65.21 Elimination of schistosomiasis (2012)

… means and resources, particularly medicines, and water, sanitation, and hygiene interventions take full advantage of non-health programmes to improve the environment, in order to cut the transmission of schistosomiasis and … the elimination of the intermediate host;
**Preventive Chemotherapy**
- Lymphatic filariasis
- Onchocerciasis
- Schistosomiasis
- Helminthiasis
- Food-borne trematodes
- Trachoma

**Rapid Impact Interventions**
*Improving access*

**Intensified Disease Management**
- Human African trypanosomiasis
- Chagas diseases
- Buruli ulcer
- Leishmaniasis
- Dengue

**Focused interventions**
*Improving innovation*

**Cross cutting strategic approaches**
- Capacity building
- Vector-borne diseases
- Veterinary diseases
- WASH

**Vector Ecology & Management**
- Veterinary Public Health
- Water and environmental sanitation
- Behavioural change education
NTDs Can Be According to Strategic Approaches

1 Preventive Chemotherapy

Large Scale Drug Administration
1. Inexpensive easy diagnostics
2. Safe drugs – large donations
3. Integration across diseases possible

Preventive chemotherapy

Schistosomiasis
Soil transmitted helminthiasis
Lymphatic filariasis
Onchocerciasis
Trachoma
Food-borne trematodes
Zoonotic helminthiasis (cysticercosis, fascioliasis, echinococcosis, ...)

Co-administration is a reality
Preventive Chemotherapy Manual

Module 2. NTD Strategies
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ALB + IVM or DEC + PZQ

Oncho, LF, schisto, STH

Azithromycin
Trachoma

Taeniasis, strongyloidiasis, pinworm, scabies, lice ...
Preventive Chemotherapy
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- Onchocerciasis
- Schistosomiasis
- Helminthiasis
- Food-borne trematodes
- Trachoma

Rapid Impact Interventions
Improving access

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Vector Ecology & Management
Veterinary Public Health
Water and environmental sanitation
Behavioural change education
NTDs Can Be Classified According to Common Strategic Approaches

Intensified Disease Management

Killer or severely disfiguring diseases

Complex Disease Management Group

1. Complicated and costly
2. Difficult to diagnose, dangerous drugs (resistance)
3. Highly skilled staff needed

Leishmaniasis
Chagas disease
Human African trypanosomiasis
Buruli ulcer
Intensified Disease Management

- Toxic (5% lethality for arsenic compounds against HAT) and expensive drugs (up to 1600 US$ amphotericin B for visceral leishmaniasis).
- Active case-finding through mobile teams.
- Decentralization of diagnosis and treatment.
- Specialized staff as well as diagnostic and treatment equipment is required.
- Objective: to find all the patients, one by one and ensure that they are adequately treated and cured.
- Diseases are potentially lethal > need to detect all cases and cure them.
- Drugs are unsafe > individual case-management is needed.
**Preventive Chemotherapy**
- Lymphatic filariasis
- Onchocerciasis
- Schistosomiasis
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**Rapid Impact Interventions**
*Improving access*

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- Human African trypanosomiasis
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NTDs Can Be Classified According to Common Strategic Approaches

Cross Cutting Strategic Approaches

Vector Ecology and Management (VEM)
Neglected Zoonotic Diseases (NZDs)

Veterinary public health
Health education and communication
Water and environmental sanitation
Behavioural change education

Policy – normative – strategic approach
1. Guidelines, strategies
2. Capacity building
3. Sound management of PH pesticides

Dengue
Link with Malaria
Most of the NTDs are vector borne (HAT, Leish, Chagas, LF, Oncho, Dengue, ...)
or NZD related (Cysticercosis, Echinococcosis, Fascioliasis, Clonorchiasis/opisthorchiasis, Leish, HAT, Rabies...)

Most of the NTDs are vector borne (HAT, Leish, Chagas, LF, Oncho, Dengue, ...) or NZD related (Cysticercosis, Echinococcosis, Fascioliasis, Clonorchiasis/opisthorchiasis, Leish, HAT, Rabies...)
Five Approaches to Overcoming NTDs as Recommended in the 2010 First WHO NTD Report

1. Preventive chemotherapy
2. Intensified case-management
3. Vector control
4. Safe drinking-water sanitation and hygiene
5. Veterinary public health
The Neglected Environment

Snails, the intermediate hosts for schistosomiasis

Black flies transmit onchocerciasis

Mosquitoes transmit LF

STH eggs stick to food and are ingested

Poor sanitation leads to schistosomiasis and STH

WHO, NTD Department, Action Against Worms, August 2007, Issue 9
Integrated vector management to control malaria and lymphatic filariasis

Box 1. The five key elements of integrated vector management

- Integrated approach – ensures the rational use of resources through implementation of a disease-control approach that targets multiple diseases; integrates the use of evidence-based nonchemical and chemical methods of vector control; and integrates a multidisease approach with other disease-control measures.

- Evidence-based decision-making – adapts strategies and interventions to local vector ecology, epidemiology and resources; adaptations are guided by operational research and by data from routine monitoring and evaluation.

- Collaboration within the health sector and with other sectors – considers all options for collaboration within and among the public and private sectors; applies the principles of subsidiarity in planning and decision-making; strengthens channels of communication among policy-makers, programme managers for vector-borne disease control and other IVM partners.

- Capacity building – strengthens physical infrastructure and financial resources; ensures adequate human resources are available at national and local levels to manage IVM programmes based on analyses of the local situation.

- Advocacy, social mobilization and legislation – promotes and embeds IVM principles in development of policies by all relevant agencies, organizations, and in civil society; establishes or strengthens regulatory and legislative controls for public health; empowers communities.
Water Sanitation and Hygiene (WASH)

“Let there be justice for all. Let there be peace for all. Let there be work, bread, water and salt for all [..]

Water is central in the social, economic and political affairs of the African continent, and of the world”

Nelson Mandela
Still 14% of the world population (1 billion people) practices open defecation.*

*Progress on Drinking-Water and Sanitation 2014 update, WHO UNICEF
Cycle of De-worming and Re-worming
Sanitation For Prevention

**Effect of Sanitation on Soil-Transmitted Helminth Infection: Systematic Review and Meta-Analysis**

Kathrin Ziegelbauer, Benjamin Speich, Daniel Mäusezahl, Robert Bos, Jennifer Keiser, Jürg Utzinger

- **Ascaris lumbricoides**  OR: 0.54 (0.43-0.69)
- **Trichuris trichiura**  OR: 0.58 (0.45-0.75)
- **Hookworm**  OR: 0.60 (0.48-0.75)
The MDG Drinking Water Target Has Already Been Surpassed

But still ...

748 Million
People lack access to
An improved source
Of drinking water

*Progress on Drinking-Water and Sanitation 2014 update, WHO UNICEF
The World Will Not Meet the MDG Sanitation Target

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

*Progress on Drinking-Water and Sanitation 2014 update, WHO UNICEF*
... Improving Access to Safe Water and Sanitation ...

- Long-term measure
- Late impact
- Expensive
- Reduction of transmission
- Extended health benefits
- Community involvement
... Improved Hygiene Behaviour Through Health Education.

- Low cost
- Difficult to evaluate
- Useful for reduction of transmission
- Extended health benefits
- Community involvement
- Impact on next generation
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Capacity Building for NTD Control Through E-learning and Apps
Capacity Building to Translate Guidelines Into Plan of Action and Implementation of NTD Control

Training Courses

**Nigeria**: Feb 2014

**Ethiopia**: Jun 2014

**EMRO**: Dec 2014

**PAHO**: Dec 2014

**WPRO**: Jan 2015

**SEARO**: Apr 2015
NTD Control Strategies - Integration

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Session 1. Overview of NTD Strategies
What do you think are the key messages from this session?
Key Messages

• An integrated approach based on the following strategies aims to control/eliminate NTDS:
  – Preventive Chemotherapy/Intensified Disease Management
  – Integrated Vector Management
  – Water and Sanitation
  – Hygiene and Education
  – Veterinary Public Health
  – Capacity building