

PROGRAMME MANAGERS' TRAINING COURSE FOR NTDS TARGETED FOR CONTROL OR ELIMINATION BY PREVENTIVE CHEMOTHERAPY INTERVENTIONS

Module 1. Introduction to Targeted Neglected Tropical Diseases (NTDs)

Session 2. NTDs Overview


Overview

- Road map to NTDs targeted for Preventive Chemotherapy (PC)
- Disease specific epidemiology and control
- Commonalities shared by NTDs, including their social determinants
- Integration opportunities
- WHO goals for PC targeted NTDs
- Key Messages

Objectives

- Understand the basic epidemiology and clinical signs and symptoms of the 6 NTDs targeted for preventive chemotherapy (PC)
- Identify commonalities shared by these 6 NTDs
- Know the WHO goals for NTDs

Roadmap to the PC targeted NTDs

Neglected Diseases	NTDs	PC Targeted NTDs
HUNDREDS 	Dengue	<i>Ascaris</i>
	Rabies	<i>Trichuris</i>
	Buruli ulcer	Hookworm
	Leprosy	<i>Strongyloides</i>
	Chagas disease	Lymphatic filariasis
	HAT	Food-borne trematode
	Leishmaniasis	Schistosomiasis
	Cysticercosis and Echinococcosis	Onchocerciasis
	Guinea worm	Yaws
	+ PC Targeted NTDs	Trachoma

Soil-transmitted
helminthiases
(STH)

The PC Targeted NTDs

					
LF	FBT	Schisto	STH	Trachoma	Oncho
					
Mosquitoes	Fish, crabs, vegetables	Snails	Direct fecal contamination	House Fly	Black Flies

Group work- Review the Diseases

- Use the knowledge of persons in your group and information on the reference handouts to complete this form for all the PC targeted diseases. Facilitators are available to assist groups.

The Epidemiology and Control of Preventive Chemotherapy (PC) Targeted NTDs

Infectious Agent	Mode of Transmission	Symptoms	High Risk Groups	Control Methods	Preventive Chemotherapy (PC) Strategy
Soil Transmitted Helminthiasis					
Schistosomiasis					







Infectious Agent	Mode of Transmission	Symptoms	High Risk Groups	Control Methods	Preventive Chemotherapy (PC) Strategy
Lymphatic Filariasis					
<i>Wuchereria bancrofti</i> <i>Brugia malayi</i> <i>Brugia timori</i>	Mosquitoes: <i>Culex</i> <i>Anopheles</i> <i>Aedes</i> <i>Mansonia</i>	Acute inflammatory attacks Lymphoedema Elephantiasis Hydrocele	Communities living in endemic areas	Preventive Chemotherapy Morbidity Management Vector Control	- In Oncho endemic area: Ivermectin & Albendazole - In non Oncho endemic area: DEC & Albendazole For at least five years >65% of at risk population
Onchocerciasis					
<i>Onchocerca volvulus</i>	Black Fly (<i>Simulium damnosum</i>), breeds by fast flowing rivers	Second leading cause of preventable blindness. Dermatological issues including severe itching	Persons living close to rivers	Preventive Chemotherapy Vector Control	Ivermectin CDTI strategy For at least ten years >65% of at risk population
Trachoma					
Bacterium – <i>Chlamydia trachomatis</i>	Five F's: f ingers, f lies, f omites, within the f amily and amongst close f riends	Blindness – the leading infectious cause of blindness	Women and children	SAFE: Surgery Antibiotics (Preventive Chemotherapy) Facial cleanliness Environmental improvement – water and sanitation Behavior change is key	Azithromycin Whole district, with as high a coverage as can be achieved, 80% of the population being a minimum acceptable target

Infectious Agent	Mode of Transmission	Symptoms	High Risk Groups	Control Methods	Preventive Chemotherapy (PC) Strategy
Soil-Transmitted Helminthiasis					
Hookworms (<i>Ancylostoma duodenale</i> , <i>Necator americanus</i>) <i>Ascaris lumbricoides</i> <i>Trichuris trichiura</i>	Lack of hygiene and sanitation resulting in contaminated soil by infected faeces	Anaemia. School absenteeism and reduced cognitive function. Affects growth and development of children and contributes to malnutrition. Poor pregnancy outcomes.	Children, Women of reproductive age	Preventive Chemotherapy WASH Shoe wearing	Albendazole/ Mebendazole
<i>Strongyloides stercoralis</i>		Skin rash. Systemic infection in immunosuppressed (disseminated strongyloidiasis)	Persistent infections in all age groups		Ivermectin: PC not implemented
Schistosomiasis					
<i>Schistosoma mansoni</i> <i>S. haematobium</i> <i>S. japonicum</i> <i>S. intercalatum</i> <i>S. mekongi</i>	Fresh water bodies contaminated by infected faeces. Intermediate host/vector = snail: <i>S. mansoni</i> : Biomphalaria <i>S. haematobium</i> : Bulinus <i>S. japonicum</i> : Oncomelania <i>S. mekongi</i> : Neotricula	Anaemia and weight loss Chronic disease in liver, bladder and kidneys causing long term disability (liver fibrosis, ascites, portal hypertension, calcification of the bladder, obstruction with hydronephrosis). Affects growth and development in children.	Children, Occupational hazard e.g. fishing	Preventive Chemotherapy WASH Snail control	Praziquantel

Infectious Agent	Mode of Transmission	Symptoms	High Risk Groups	Control Methods	Preventive Chemotherapy (PC) Strategy
Food-Borne Trematodes					
<i>Opisthorchis viverrini</i> <i>Clonorchis sinensis</i> (Asian liver fluke)	Freshwater fish: <i>Cyprinoid</i> fish	Bile duct cancer; Obstructive jaundice; Diseases related to bile duct inflammations	Persons with habit to consume raw or insufficiently cooked fish, water plants, crayfish, crabs	Preventive Chemotherapy; WASH (Water, Sanitation and Hygiene); Food consumption behavior change	Praziquantel for Asian liver flukes
<i>Fasciola</i> sp.	Water plants	Liver fibrosis			Triclabendazole (not implemented)
<i>Paragonimus</i> sp. (Lung fluke)	Crabs, crayfish	Blood in sputum; Lung diseases mimicking tuberculosis			Praziquantel for lung fluke (not implemented)
Minute intestinal flukes (MIF)	Freshwater fish: <i>Cyprinoid</i> fish	Unspecific intestinal complaints			Praziquantel for MIF

What are the common features of these NTDS?

Morbidity, Loss of Productivity and # at Risk

					
LF	FBT	Schisto	STH	Trachoma	Oncho
120 M <i>Infected</i>	53 M <i>Infected</i>	200 M <i>Infected</i>	800 M <i>Infected</i>	84 M <i>Infected</i>	37 M <i>Infected</i>
1.2 B <i>at risk</i>	1.1 B <i>at risk</i>	0.7 B <i>at risk</i>	1.2 B <i>at risk</i>	1.2 B <i>at risk</i>	0.4 B <i>at risk</i>
5.9 M DALYS	0.7 M DALYS	1.7 M DALYS	3.9 M DALYS	1.3 M DALYS	0.4 M DALYS

Social Determinants of NTDs

- Water and sanitation
- Food consumption behaviour (raw, insufficiently cooked dishes)
- Housing and clustering: building design, peri-domestic area and crowding of people
- Environment: ecological and topographical factors, land coverage, climatic change and water resource development schemes
- Migration: refugees, nomads, migrant workers and re-settlers
- Disasters and conflicts, comprising elements of migration and breakdown of health care systems and infrastructures
- Socio-cultural factors
- Gender
- Poverty: inadequate income, subsistence and wealth

Common Features of the Diseases

- Infections of childhood → diseases of adults
- Chronic - Sub-clinical', persistent, 'low-grade' disease – 'draining'
- Non-lethal
- 'Diseases of poverty'
- Impact on reproductive health and economic productivity
- Environment plays important role in 'catching' the infections
- WASH and behavioral risk factor play a key role
- Poly-parasitism
- Do not travel widely, do not affect travelers
- Usually neglected by research
- Effective treatments available and 'tool ready' for some NTDs

Overlap in Treatments Used

					
LF	FBT	Schisto	STH	Trachoma	Oncho
Albendazole Ivermectin DEC	Praziquantel Triclabendazole	Praziquantel	Albendazole Mebendazole (Ivermectin)	Azithromycin	Ivermectin

Treatments Available

					
LF	FBT	Schisto	STH	Trachoma	Oncho
GlaxoSmithKline Merck & Co. Inc. Eisai	Merck-Serono Novartis	Merck-Serono	GlaxoSmithKline Johnson & Johnson	Pfizer	Merck & Co.

Extraordinary Drug Donations

NTDs - WHO Goals

LF	Global elimination by 2020
Blinding trachoma	Global elimination by 2020
Schisto	Elimination in E. Med, Caribbean, Indonesia, Mekong River Basin and China (<i>S. japonicum</i>) by 2016
	Elimination in the Americas and W. Pacific by 2020
	Elimination in 'selected' countries in Africa by 2020
STH	100% of countries have a plan of action by 2015
	50% of preschool and school-aged children in need of treatment are regularly treated by 2015
	75% of preschool and school-aged children in need of treatment are regularly treated in 100% of countries by 2020
FBT	75% annual treatment coverage by 2016
Oncho	Elimination in Yemen and Latin America by 2015
	Elimination in 'selected' countries in Africa by 2020

What are the common features of NTD programmes (NTDPs) ?

Common Features of NTD Programmes

- Control/elimination targets: immediate or later
- Focus
 - eliminating severe morbidity
 - interrupting transmission
- ‘Integrated’ approach to ↑ efficiency, ↓ costs
 - Various ‘platforms’ depending on what is already organized
- ‘Ancillary pillar’ – environment, morbidity management
- Energy, enthusiasm, determination ← ‘neglect’
 - in affected communities
 - among international partners

How can the delivery of NTD programmes be integrated?

Identifying Integration Opportunities

Activities		LF	SCH	STH	FBT	TRA
Strategic planning and review		○	○	○	○	○
Advocacy		○	○	○	○	○
Mapping		○	○	○	○	○
Training		○	○	○	○	○
Drug logistics & supply chain management		○	○	○	○	○
Social Mobilization						
Drug Distribution	Community-based	○	○		○	○
	School-based		○	○		
	Child Health Day (week)		○	○		
	Immunization		○	○		
	Health & Nutrition Day		○	○		
M&E		○	○	○	○	○
Health Education		○	○	○	○	○
Other Interventions (linking with)	Morbidity Management & Surgeries	○	○			○
	Vector Control	○	○		○	○
	Water and Sanitation		○	○		○

What do you think are the key messages from this session?

Key Messages

- NTDs are widespread diseases of poverty and cause substantial morbidity, both visible and hidden.
- 6 NTDs can be controlled/eliminated by PC and other strategies.
- NTD programmes can prevent severe morbidity and control transmission.
- Integration can reduce cost and improve efficiency of NTD control.