

ACTION AGAINST WORMS

AUGUST 2007 ISSUE 9



A school girl in Nepal

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RE-LAUNCHING "ACTION AGAINST WORMS"

In 2003, *Action Against Worms* was launched with a pledge to focus on two of the most widespread types: schistosomes and soil-transmitted helminths (STH). Every issue aimed to raise the profile of these diseases and at the same time, retain a clear focus on practical subjects to assist health staff. For example, how do you carry out a survey? How much will the tools cost?

What should programme managers know when they are treating young children? Your response has been overwhelmingly positive.

In 2006, WHO announced a massive shift in its strategy for the control of neglected tropical diseases (NTDs). Instead of recommending interventions aimed at *specific diseases*, WHO shifted focus to the *maximum number of people at risk who could be treated with a set of drugs*. And rather than recommending specific drug delivery channels for each control programme, WHO proposed a blend of delivery channels, ranging from the school system (traditionally used to treat school-age children for schistosomiasis and STH) to a community-directed treatment approach championed by the onchocerciasis control programme.

To mirror these changes, *Action Against Worms* is expanding its remit. In addition to schistosomiasis and STH, three more diseases will be added: lymphatic filariasis, onchocerciasis and trachoma. Packaged together, these five diseases share characteristics that allow their previously independent and large-scale preventive chemotherapy programmes to be synchronized and integrated. Future issues will be dedicated to other important blood flukes helminthiases – such as the food-borne trematodes – as more data become available on strategies for their control.

Preventive chemotherapy means the delivery of good-quality drugs, either alone or in combination, to as many people in need as possible at regular intervals throughout their lives to prevent the morbidity associated with multiple infections.

"Instead of a host of individual programmes going their separate ways, we now have a unified, integrated strategy that simplifies drug distribution, reduces duplication, and lessens some of the demands on health systems and staff".

Dr Margaret Chan, WHO Director-General, 2007

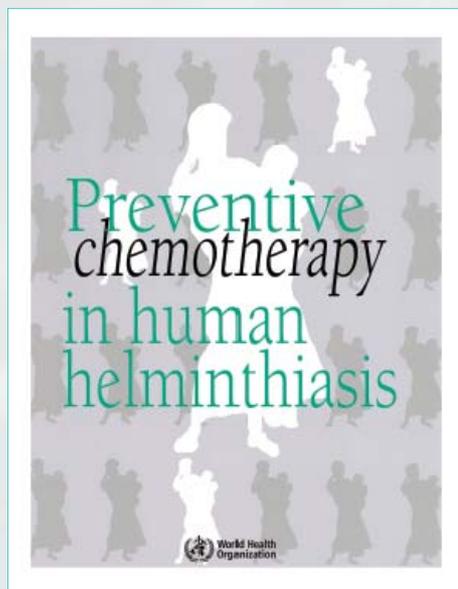


**World Health
Organization**

www.who.int/neglected_diseases/

NEWSLETTER

WHAT DOES INTEGRATED PREVENTIVE CHEMOTHERAPY MEAN – AND NOT MEAN ?



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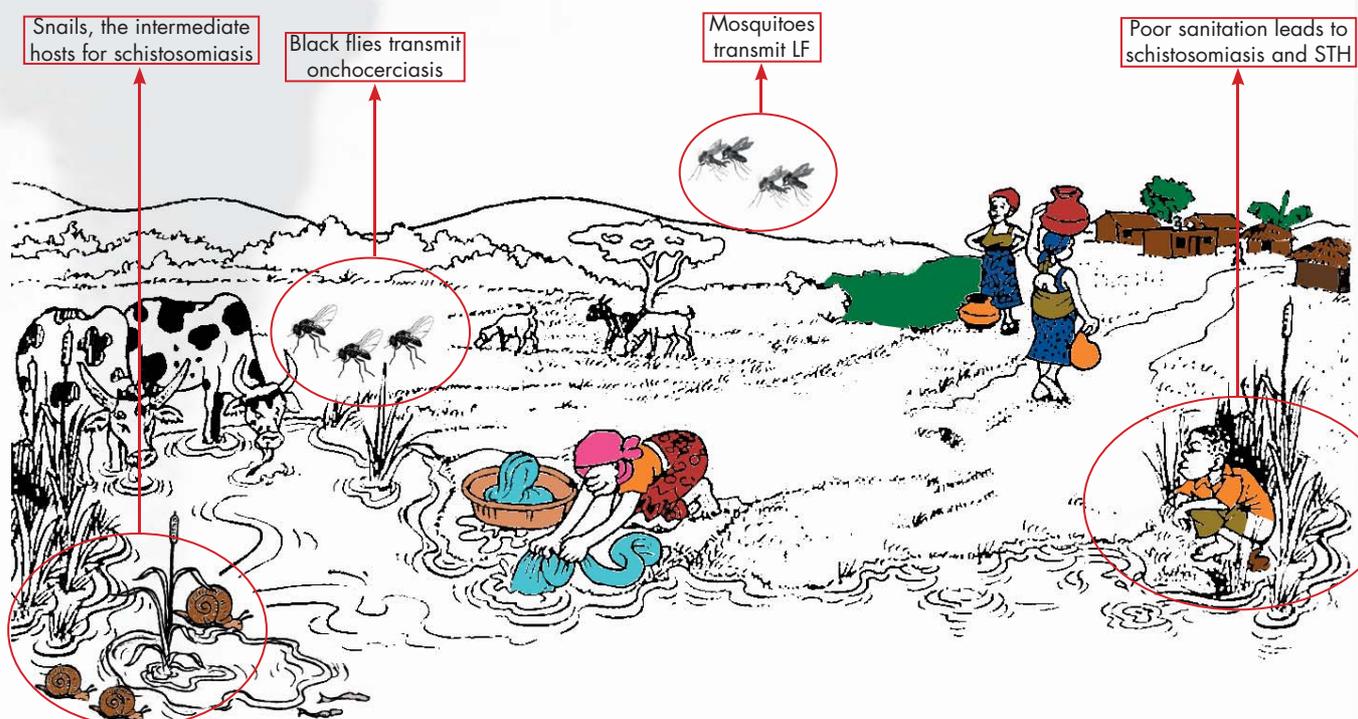
Preventive chemotherapy involves the delivery of *drugs of assured quality*, either alone or in combination, to *as many people in need as possible* at *regular* intervals throughout their lives. The *aim* of preventive chemotherapy is to *prevent* the overt illness and more subtle morbidity that these diseases cause when left untreated.

When WHO initiated the concept of integrated NTD control in 2006, concerns were raised that it would result in job losses. Integration does not mean the loss of positions, or of disease-specific expertise. Nor does it mean a single programme manager for all the diseases, or a change to the global targets. It does mean:

- working as a *multidisciplinary team* in order to more regularly and more efficiently treat more people;
- *co-implementation and synchronization*, while recognizing areas where programmes overlap and can benefit mutually, *improved coordination and better management*;
- using the national health system and every opportunity to strengthen any appropriate existing channels to deliver drugs.



THE NEGLECTED ENVIRONMENT: RISKY BEHAVIOURS AND VECTORS



SEVEN REASONS WHY INTEGRATION IS LOGICAL

1. Individual diagnosis is not necessary mass treatment is possible

These diseases do not require complicated or expensive diagnostic tests to determine whether someone is infected. The drugs have excellent safety records, enabling rapid surveys to be carried out on a sample population and the results applied to the entire area. Everyone is treated, regardless of their infection status.



Children in Cameroon with their urine samples

2. Living in poverty leads to multiple infections

Most people living in poverty are not infected with one but multiple diseases. This weakens their immune system, making them susceptible to further illness and vulnerable to an impaired quality of life. A person who presents for treatment may have walked many miles to reach the distribution post; treating him/her for as many of their infections simultaneously makes more sense than launching a separate programme for each disease.



A village in Cameroon

3. The same people deliver the drugs – to the same communities

It is often the same health staff who work at the front line of these programmes. And it is often the same communities that they are reaching. It therefore makes sense to carry out integrated training sessions for the health staff, to use integrated coverage registers and to launch all-inclusive social mobilization campaigns to raise awareness of NTDs as a whole.



Health workers visiting a remote village in Madagascar

4. Drugs are available

Generous donations for some of the NTD drugs has made them available free-of-charge to the governments of many endemic countries. And although these donations do not cover all the needs of every country worldwide, the price of these drugs has decreased dramatically over the past years. Moreover, they can now be produced locally at extremely low prices since the patents have been lifted. For example, one tablet of generic, quality-assured albendazole should cost US\$ 0.02. There is also a considerable overlap between the drugs used to control NTDs. In other words, a single drug can treat more than one disease (albendazole is used in both LF elimination and STH control) and a single disease can be treated by more than one drug (STH is treated by albendazole, mebendazole, pyrantel and levamisole) (see page 5). This means synergies are possible.



Tablets of albendazole (400-mg)



© Keith Feldon/Unicef

An integrated campaign in India

5. Delivery channels are already in place

Existing channels for the delivery of drugs also provide opportunities to integrate NTD control. Some countries have a long history of community directed treatment. Others are launching Child Health Days twice a year as part of their national health system which provided an excellent opportunity to add albendazole + ivermectin to the first round (to control lymphatic filariasis) and albendazole to the second round (to control STH infections if a second round is needed). Mass immunization campaigns, vitamin A deliveries and other established systems also offer opportunities for linkage.

6. Added benefits

Preventive chemotherapy not only reduces the morbidity associated with the 5 diseases mentioned here, but also yields additional benefits. For instance, the drugs provide welcome relief from other helminth infections such as scabies and lice which impact a person's daily life. Treating STH infections also lessens the burden of malaria and may help to lessen the burden of TB and HIV acceleration.

7. Disease-specific partnerships can be used

Each disease has a specific partnership with its own particular characteristics. Integration does not mean dissolving these affiliations – it does mean harnessing their joint strengths and collaborating more effectively.

The WHO manual on preventive chemotherapy deals only with drug delivery; programme managers are responsible for adding key supporting components (health education, sanitation, safe water supply and vector control) to make their programmes as comprehensive as possible within the limits of the resources available.

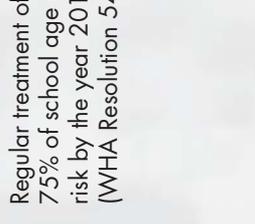
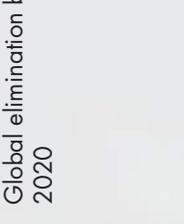


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A safe water point in an urban slum in Madagascar

The real essence of preventive chemotherapy is shown in charts 1 and 2 which show the appropriate drug combinations in a LF endemic area (chart 1) and in a non-LF endemic area (chart 2) and the sequence in which the drugs should be delivered: or, in simple terms, "how to do it". The first step is to carry out an assessment of the burden of disease in the area. With this information, a programme manager then uses the correct chart to prepare a coordinated plan of action which describes which drugs need to be delivered during the first mass drug administration followed up by targeted treatments to specific groups.

THE DRUGS AND CUT OFFS FOR ACTION

Drugs	Tablets	Threshold for action and frequency	Who do you treat Who do you exclude Always exclude severely ill people	The Global Targets
STH Albendazole (400-mg) Mebendazole (500-mg)		If the prevalence of STH infection in school age children is: ≥20% and <50% Treat x1 per year ≥50% Treat x2 per year	Treat • School age children • Pre-school age children • Women of child bearing age • PW in their 2nd and 3rd trimester • Lactating women • High risk adults (e.g. miners) Exclude • Pregnant women in 1st trimester	Regular treatment of at least 75% of school age children at risk by the year 2010 (WHA Resolution 54.19)
SCH Praziquantel (40-mg/kg)		If the prevalence of infection in school age children (using parasitological methods) is: ≥50% Treat x1 per year ≥10- <50% Treat every 2 years <10% Treat once on entry and once on exit from primary school	Treat • School age children • High risk adults (e.g. fishermen) Exclude • Children < 4 years old (or <94cm)	Global elimination by the year 2020 (GAEIF)
LF Ivermectin + Albendazole DEC + Albendazole		If the prevalence of LF infection is ≥1% in the general population Treat x1 per year	Treat • The whole population Exclude • Pregnant women • Lactating women 1 week > birth • Children <90cm in height Treat • The whole population Exclude • Pregnant women • Children <2 years old	Global elimination by the year 2020 (no year specified)
ONC Ivermectin		If the prevalence of infection is ≥40% or if the prevalence of palpable nodules is >20% Treat x1 per year	Treat • The whole population Exclude • Pregnant women • Lactating women 1 week > birth • Children <90cm in height	Global elimination by the year 2020
TRA Azithromycin (Zithromax®) tablets or syrup Tetracycline ointment (1%)		If there is active trachoma >5% in 1-9 year olds at the district level Treat x1 per year	Treat • The whole population Exclude • People allergic to Zithromax®	Global elimination by the year 2020

Many of these drugs have a broad spectrum, allowing several diseases to be tackled simultaneously. Preventive chemotherapy should be conceived as drug-based rather than disease-based: emphasis should be placed on the best, coordinated use of the available drugs rather than on specific forms of helminthiasis.

COORDINATED

CHART 1 – COORDINATED IMPLEMENTATION OF PREVENTIVE CHEMOTHERAPY INTERVENTIONS WHERE LF IS ENDEMIC

LF = Lymphatic filariasis
 ONCHO = Onchocerciasis
 SCH = Schistosomiasis
 STH = Soil-transmitted helminthiasis

Legend

Mass drug administration
 MDA1^a IVM+ALB
 MDA2^a DEC+ALB
 MDA3 IVM

Colour coding
Yellow: first annual drug distribution
Green: second annual drug distribution, to be carried out 6 months after the first annual drug distribution
Blue: second annual drug distribution, to be carried out anytime, but at least 1 week after the first annual drug distribution. In some instances ALB, IVM and PZQ can be coadministered, see Box B, page 14.

Targeted Treatment
 T1 ALB+PZQ or MBD+PZQ
 T2 PZQ
 T3 ALB ou MBD

^a MDA1/2: if the country is endemic for ONCHO, IVM (instead of DEC) should be used to control LF even if ONCHO is not transmitted in the targeted areas. To control LF therefore, IVM should be used in ONCHO-endemic countries (MDA1) and DEC in ONCHO-free countries (MDA2), irrespective of whether ONCHO is transmitted in the targeted area.

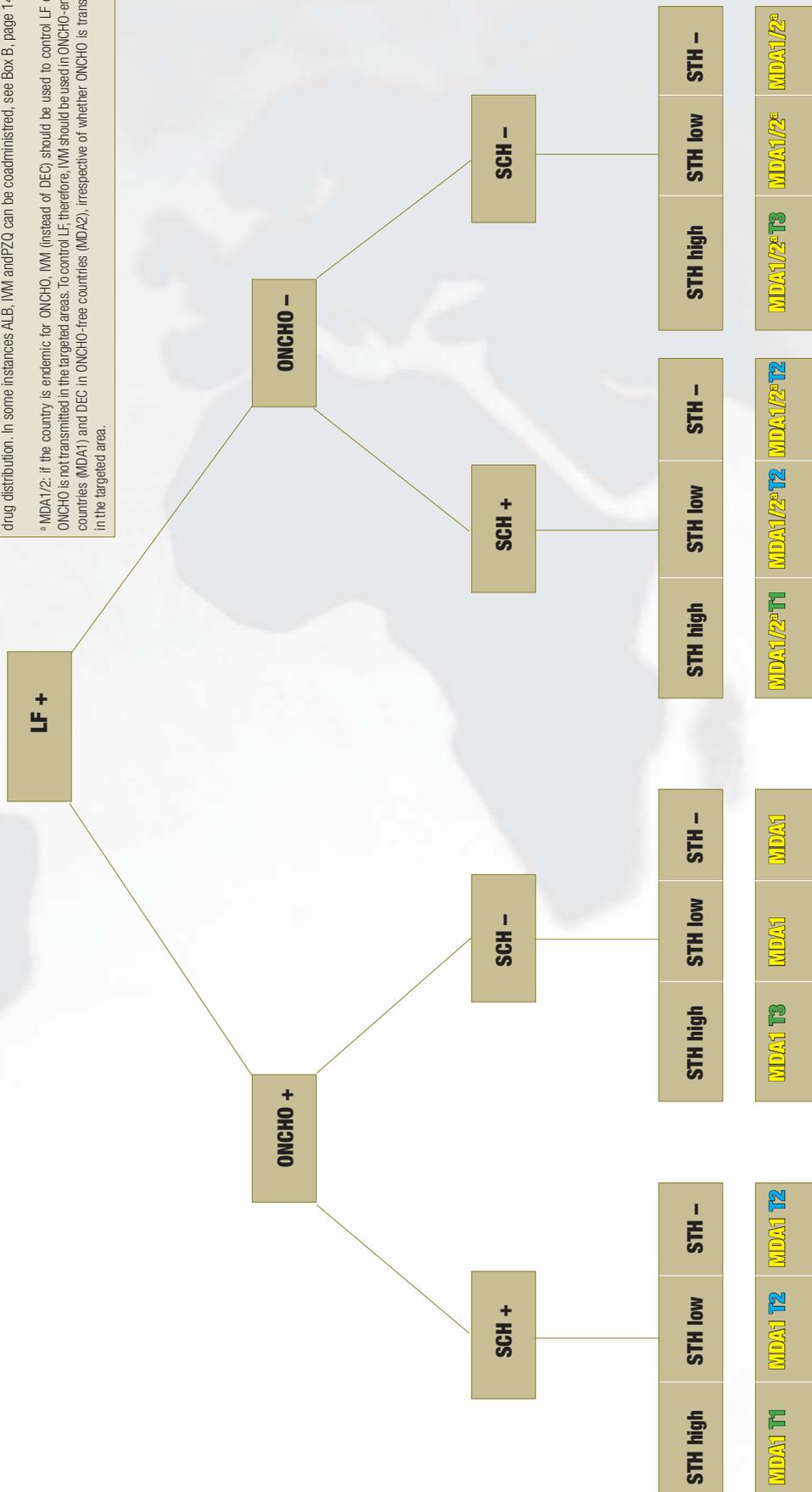


CHART 2 – COORDINATED IMPLEMENTATION OF PREVENTIVE CHEMOTHERAPY INTERVENTIONS WHERE LF IS NOT ENDEMIC

LF = Lymphatic filariasis
 ONCHO = Onchocerciasis
 SCH = Schistosomiasis
 STH = Soil-transmitted helminthiasis

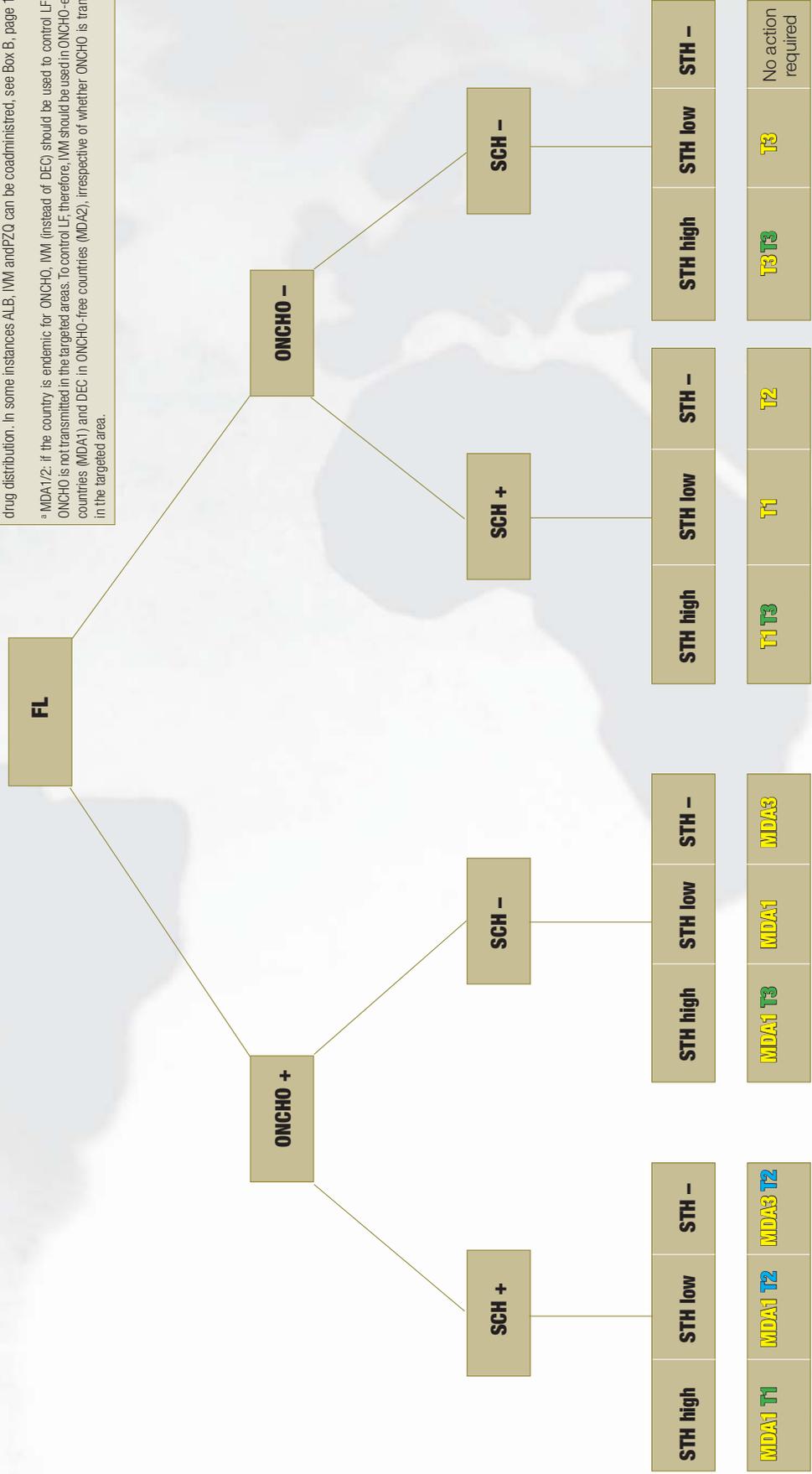
Legend

Mass drug administration
 MDA1^a IVM+ALB
 MDA2^a DEC+ALB
 MDA3 IVM

Targeted Treatment
 T1 ALB+PZQ or MBD+PZQ
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IMPLEMENTATION

CHALLENGES TO INTEGRATED CONTROL

Integrated preventive chemotherapy, while logical, poses challenges. Six of them are detailed below.

1 My Kingdom Syndrome

Many of the disease-specific programmes have evolved with their own donors, their own budget lines, dedicated programme managers and a strong individual identity. Integrating and coordinating with possibly smaller programmes, which may be less wealthy, less well established or which may work in different ways, may provoke resistance and unease. People fear they may lose funding, power or both.

- Experienced programme managers who command respect and authority can oversee and coordinate the integration of multiple programmes have been employed in some countries embarking on integrated NTD control.
- Stating the advantages and disadvantages of integration from the start, with clarity and honesty, is helpful.
- Start small to demonstrate the feasibility, advantages and challenges of integration before scaling up.

2 Some drugs are donated, others are not



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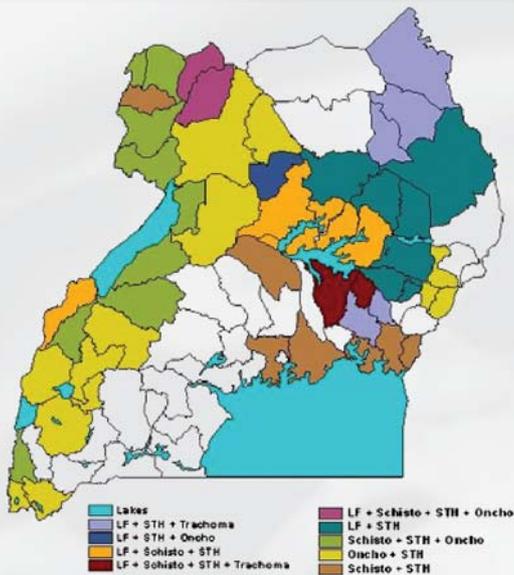
A drug store in a rural district in Nepal

Coordinating shipments. For many of the NTDs, two drugs are co-delivered simultaneously but the source of the drugs can vary. For example, albendazole for LF elimination is donated, but albendazole for STH control is not. Similarly, a country may have a secured mebendazole donation but needs to procure praziquantel through its national system – which orders just twice a year. A familiar scenario arises whereby the donated drugs arrive and are duly cleared through customs; the procured drugs arrive in a different container, in a different month and often take longer to be processed through the required customs procedures. The result is that if one shipment is delayed, coordinating the transport of both the drugs in the correct quantities to the districts becomes difficult and can delay the operation of the entire programme.

But we have to pay! Another familiar situation is as follows: a district endemic for LF and STH receives ivermectin + albendazole through the LF global drug donation. By default, the people treated for LF are automatically being treated for STH through the administration of albendazole. Meanwhile, the neighbouring district, which is STH endemic but not LF-endemic, receives no donation. The people living in this district are not automatically covered for STH unless the district health authority decides to buy the drugs with its own budget.

3 Mapping needs to be completed

Some diseases have not yet been mapped, which makes it impossible to know where to target treatment. Without up-to-date maps showing where the diseases exist, drugs may be indiscriminately distributed in areas where they are not needed which of course represents a significant waste of financial resources and staff time. Different areas also have different “mixes” or combinations of diseases. This means that an integrated plan of control needs to be tailored to specific areas, rather than a disease-specific approaches applied across the country. Map 1 shows nine different disease mixes in Uganda, each of which will require its own schedule to treat the affected populations. Based on this information, a second map showing “what to do” in each area could be created better guide activities in each area.



4 Integrated monitoring

Integrating already established monitoring systems into a single system poses special challenges. Ideally, there should be one form which is easy to use and which clearly captures data on the number of people (and their ages and possibly their gender) treated with which drugs, on each round. These data are then tallied and passed up the system on a summary form. In reality, it is not so simple. The hurdles include:

- Community drug distributors with varying levels of education, some of whom are comfortable with numbers while others are only able to use simple tally sheets;
- Different donors (of funding and/or drugs) demand vastly different types of data – at different times of year, which can be a huge drain on a programme’s time and energy;
- Disease-specific programmes have developed their own monitoring systems – re-aligning these into a single, coherent system is difficult;
- The

expense of printing many thousands of registers – and the complexity of designing them – are often underestimated by donors, and yet well-designed monitoring tools are vital for measuring a programme’s success and progress.



- Look at and learn from integrated forms which are being created by other countries. Adapt and field test!
- Any request for data, whether it be to track donated drugs or a financial investment, must be practical and take into account the country’s routine data collection. Complicated requests or data should be carefully assessed in light of the burden they place on in-country programmes and what the donor actually needs.

5 Harmonizing recommendations

Although the programmes for LF elimination and STH control both use albendazole, the strategies recommended by WHO have evolved separately over the years. One result is that there are discrepancies. The LF elimination programme recommends that ivermectin + albendazole can be given to all children above 2 years of age; the STH programme advocates the use of albendazole to children from the age of 1 year and up. The LF strategy excludes pregnant women from treatment with ivermectin + albendazole; the STH programme advises that it is safe to treat pregnant women after their first trimester. Adding to the confusion, the manufacturers’ packaging on both albendazole and mebendazole indicates not to treat women at any stage of their pregnancy. For programme managers, these divergences are confusing. For the time being, the exclusion criteria outlined in the Preventive Chemotherapy Guidelines should be followed until WHO can safely harmonize the recommendations.



6 Drug safety

Before recommending the delivery of any drug, WHO ensures that it has passed through stringent safety testing and quality assurances. However, data are still being compiled on the co-delivery of several drugs at the same time, and until these data are available, WHO recommends an interval of at least one week between the delivery of some of the drug combinations. This is particularly relevant if a community has never been treated before and is therefore more likely to have high worm loads which increases the likelihood of side-effects. For more details, please refer to the Preventive Chemotherapy Guidelines in full.

THE IMPACT OF NEGLECTED TROPICAL DISEASES

Symptoms

Impact on well-being

- Painful red eyes, scratchy in-growing eyelashes
- Fever, nausea, vomiting
- Bloody in urine or faeces
- Painful, swollen belly
- Swollen limbs
- Itchy skin everywhere
- Burning pain around ulcers – secondary infections
- Weight loss
- Difficulty to perform sexually



- Chronic exhaustion
- Too sick to go to school
- Too sick to tend the fields
- Miss important vaccinations
- Constant, extreme pain
- Unable to walk
- Ostracization / social exclusion
- Loss of appetite
- Low self esteem
- House bound during daylight

Worst outcomes

- Trachoma → Blindness, eye-pain, inability to marry, rejection
- STH → Death, severe anaemia, low birth weights, maternal mortality
- LF → Disabled, unable to work, unable to marry, exclusion
- Schistosomiasis → Death, liver cancer, bladder cancer, unable to learn at school

While these diseases have unique characteristics, clear overlaps exist in the **drugs** used to treating patients, the **target groups** who benefit from the drugs and the **frequency** of the treatment regimen – making **co-implementation** of strategies for their control **possible**.

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We very much hope that 'Action Against Worms' is both enjoyable and informative. If you have any comments on existing issues or suggestions for areas you would like to be covered in the future, please do not hesitate to contact us by e-mail at wormcontrol@who.int



World Health Organization

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IMPACT