Report of the
WHO Strategic and Technical Advisory Group
for Neglected Tropical Diseases

Château de Penthes, Geneva, Switzerland
12–13 April 2016
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Abbreviations

ALB  albendazole
DEC  diethylcarbamazine
FAO  Food and Agriculture Organization of the United Nations
GLP  Global Leprosy Programme
ICCDE International Commission for the Certification of Dracunculiasis Eradication
IDM  innovative and intensified disease management
IDSP  Integrated Disease Surveillance Programme
LF  lymphatic filariasis
IVM  ivermectin
M&E  monitoring and evaluation
NTD  neglected tropical disease
OIE  World Organisation for Animal Health
ONCHO onchocerciasis
PC  preventive chemotherapy
PZQ  praziquantel
SCH  schistosomiasis
SDG  sustainable development goal
STH  soil-transmitted helminthiases
VCAG  Vector Control Advisory Group
WHO  World Health Organization
zNTD  neglected zoonotic disease
The ninth meeting of the Strategic and Technical Advisory Group for Neglected Tropical Diseases (STAG-NTD) was held at Château de Penthes, Geneva, Switzerland on 12–13 April 2016.

**Day 1 – closed session**

Dr Ren Minghui, Assistant Director-General, HIV, Tuberculosis, Malaria and Neglected Tropical Diseases, opened the meeting by welcoming all STAG members and other participants on behalf of WHO. Dr Dirk Engels, Director, WHO Department of Control of Neglected Tropical Diseases, added his welcome and introduced the Chairperson, Professor Nilanthi de Silva. Professor de Silva also welcomed the members and noted those who could not be present. At the Chairperson’s request, all those present introduced themselves. Professor Eric Fèvre and Dr Uzoma Nwankwo were elected as Rapporteurs.

1. **Status, progress and challenges of NTD control**

Dr Dirk Engels (Director/NTD) presented his report on the status, progress and challenges of NTD control during the past year (2015–2016). The highlights included:

- Mainstreaming and monitoring of NTDs in the context of the SDGs and the need to adjust classical reporting formats accordingly;
- Success recorded with dracunculiasis eradication, with just 22 human cases reported in 2015;
- Over 1.1 billion individuals protected through PC treatments in 2014 (> 850 million people under treatment, 230 million people under post-treatment surveillance);
- New IDM Coordinator appointed; new corporate identity for IDM using skin manifestations and stigma as an entry point for advocacy and a syndromic approach;
- Launch of a joint WASH-NTD strategy aimed at accelerating and sustaining achievements in NTD control and elimination, particularly among the poorest and most vulnerable populations, through better targeted WASH efforts;
- Vector control support to the Zika/microcephaly outbreak response provides an opportunity to advocate for entomological surveillance and sustained vector control;
- More work on zNTDs with a focus thus far on rabies;
- Access to non-donated medicines; prequalification to identify good-quality generic medicines for partners to purchase;
- Building managerial and technical capacity as formal training for health personnel and in-service trainings through the corporate country strategy.
2. Systematic, technically driven process for adoption of additional diseases as NTDs

STAG deliberated a draft proposal, prepared by the Secretariat and presented by Director/NTD, outlining the process for the adoption of additional diseases as NTDs. This discussion had been triggered by a request that had been submitted to the Executive Board to adopt mycetoma as an NTD. The Executive Board had subsequently referred the process to STAG.

STAG agreed the following elements to be outlined and included in the standard process for the adoption of additional diseases as NTDs:

a) A clear set of criteria for inclusion (and possible exclusion) of a disease. STAG favoured a two-tier classification, with a primary NTD list and a secondary list of “other NTDs” for advocacy purposes;

b) The required content of the dossier of such diseases, to provide the body of evidence for consideration, as well as the frequency of consideration.

A sub-committee of STAG was established to further deliberate and review the draft proposal. The sub-committee will report back to STAG before the Sixty-ninth World Health Assembly (Geneva, 23–28 May 2016) on the following items:

a) A clear set of criteria for inclusion of NTDs in the global list to which WHO gives priority, through the portfolio of WHO’s NTD Department, and “other neglected tropical diseases or conditions” as listed on WHO’s NTD website;

b) The process by which the STAG would periodically review the global list of NTDs, including requests for inclusion of additional NTDs, and make recommendations to WHO as to their eligibility for inclusion in the portfolio of WHO’s NTD Department;

c) The compendium of basic evidence that should accompany any request for inclusion of an additional NTD, to enable the STAG to make an informed decision and recommendation to WHO.

Finally, the sub-committee was requested to specifically consider the case of mycetoma against the criteria set. Eight STAG members volunteered to serve on the sub-committee:

- Dr Abdul Hakim Al-Kholani
- Dr Be-Nazir Ahmed
- Professor Nilanthi de Silva
- Professor Steve Lindsay
- Dr Lee Ching Ng
- Dr Uzoma Nwankwo
- Dr Frank Richards
- Professor Mamadou Traoré
3. Dracunculiasis eradication

Dr Gautam Biswas presented an update on the ICCDE process for eradication. In 2015, a total of 22 cases of dracunculiasis were reported in humans that were mapped to the village level. These cases occurred mainly in Chad, but also in Ethiopia, Mali and South Sudan. The remaining affected areas suffer from civil insecurity. The ICCDE is not satisfied with the levels of surveillance in some countries and has encouraged improved surveillance. One case of human infection has been reported from Chad in 2016 and confirmed; another human case is under investigation. The meeting also noted the unusual cases of Dracunculus medinensis infections in dogs. To date in Chad, 503 dog infections have been recorded. Molecular evidence has confirmed that the species found in dogs is identical to that in humans; however, more research is required to understand these cases.

STAG affirmed the recommendations of ICCDE 11 (March 2016), especially that WHO should seek continued support from partners for the eradication goal.

4. Verification of interruption of yaws transmission in India – process for future verification

Dr Ron Ballard reported on the findings of an International Verification Team appointed by WHO to visit India (October 2015). No cases have been reported since 2003, in the presence of a good surveillance system, and the team considered that transmission of yaws in India has been interrupted.

Recommendations of the International Verification Team, as further endorsed by STAG:
- Yaws activities in India should be downscaled (sero-surveys should be halted, but surveillance should continue);
- Systematic case searches should be discontinued;
- Awareness of diseases should be maintained among health-care workers and communities;
- Rumours should be fully investigated in the way they always have been;
- Laboratory services for yaws should be reviewed – including a national-level PCR diagnostic and point-of-care tests;
- The IDSP should continue to specify yaws on reporting forms.

5. Vector control and response to Zika virus disease

Dr Raman Velayudhan reported that as of 11 April 2016, a total of 61 countries have been affected by the Zika virus outbreak which was declared a Public Health Event of International Concern by WHO on 1 February 2016. Vector control efforts are focussed on Aedes aegypti; control of A. aegypti is the remit of the NTD Department. There is a need to move away from outbreak response to pre-emptive vector control measures. The issue of emerging resistance of Aedes to pyrethroids has increased emphasis on reduced human-mosquito contact (repellents, insect screens, curtains, etc.) as a control mechanism. El Niño has been an important factor in generating the conditions that have led to the current Zika outbreak. There is a clear need to build capacity in medical entomology skillsets globally.
6. STAG working group reports

Each of the seven STAG working groups made a brief report and presented recommendations for endorsement by STAG and transmission to the WHO. After lively discussions and debate, STAG noted and endorsed the recommendations of the Working Groups as summarized below.

I. Working Group on Access to Quality-Assured Essential Medicines
Report from Professor Nilanthi de Silva, Chair

Recommendations:
- WHO should continue support for a partners’ meeting to coordinate procurement of donated medicines for PC. However, the proposed downscaling of drug procurements by DFID and USAID from 2018 onwards carries important implications for financing needs;
- WHO should continue activities to improve the quality of PC medicines through the prequalification and Expert Review Panel processes, and make these outcomes known to key stakeholders;
- WHO should continue to promote pharmacovigilance and safety monitoring during PC activities;
- WHO should continue to improve the quality and availability of medicines for leishmaniasis, trypanosomiasis, fascioliasis and paragonimiasis.

II. Working Group for Investment for Impact
Report from Dr Uzoma Nwanko, Chair

Recommendations:
- Establish a task force on SDG-NTD mainstreaming and monitoring to address strategic and technical issues for inclusion of NTDs within the SDG monitoring framework;
- Assist countries in initiating a “financing dialogue” with relevant stakeholders to improve financing for NTD implementation in the context of the SDGs, with particular focus on increased domestic financing and optimized donor funds.

III. Working Group for Monitoring and Evaluation
Report from Dr Rosa Castalia, Chair

Recommendations (focused on improving the quality of information supplied by national NTD programmes):
- Coverage evaluation – implement coverage evaluation surveys using Probability Sampling with Segmentation;
- Coverage supervision tool – make this tool immediately available to national programmes after community-level supervisors have reviewed the evidence of its use;
- Capacity strengthening for M&E – shift focus from development of tools to strengthening national and sub-national M&E capacities in using the M&E tools.

IV. Working Group for Monitoring Drug Efficacy
Report from Dr Amadou Garba on behalf of the Chair

Recommendations from the ivermectin subgroup:
- Make available data from sentinel sites (WHO) for LF model development and testing;
- Develop standard protocols to assess IVM efficacy against ONCHO and LF (see example from STH and SCH);
- Test the moxidectin efficacy spectrum for other parasitic nematodes;
- Further test the efficacy, safety and acceptability of triple therapy (IVM+DEC+ALB) for LF.
Recommendations from the benzimidazole subgroup:
- Identified drug combinations to be tested in multi-centric trial(s);
- Test the efficacy of moxidectin against STH;
- Advocate integration of monitoring and surveillance of drug efficacy in control programmes, in priority countries with high drug pressure;
- Promote the use of STH predictive models to evaluate drug efficacy.

Recommendations from the praziquantel subgroup:
- Further research on the mechanism of PZQ action is needed;
- Application of SCH predictive modelling;
- Evaluate the role of animals (including snails) in maintaining transmission (with particular emphasis on hybrids);
- Assess alternative existing drug combinations.

V. Working Group on Zoonotic Neglected Tropical Diseases
Report from Professor Eric Fèvre, Chair. The working group currently focuses on four diseases: rabies, *Taenia solium* cysticercosis, echinococcosis and food-borne trematodiasis (with specific focus on rabies and cysticercosis during the first year).

Primary recommendations:
- Support tripartite involvement of FAO, OIE and WHO in zNTD activities, including at country level;
- Support activities leading to the stated goal of zero human deaths from dog-mediated human rabies by 2030, including finding a major champion to advance rabies control;
- Promote and support cysticercosis control concurrently within the framework of NTDs, food safety, WASH and mental health.

Secondary recommendations:
- Promote the investment case for rabies at country level and with donors;
- Develop evidence-based guidelines for optimal delivery of cysticercosis control tools (pig vaccination, human mass or selective treatment);
- Promote the investment case for cysticercosis at country level and with donors;
- Support the next stages of diagnostic tool development according to the target product profiles prepared during the zNTDs/TDR stakeholder meeting;
- Support the revived informal Working Group on Echinococcus.

VI. Vector Control Advisory Group
Professor Steve Lindsay reported on behalf of the Chair of the VCAG. Several new paradigms and products are currently under review by VCAG. An emergency meeting was called in March 2016 in response to the Zika outbreak in South America. Recommendations made at this meeting included that:
- Well implemented vector control programmes using existing tools and strategies are effective in reducing transmission of *Aedes*-borne diseases, including Zika virus. These tools should be promoted and used to control the Zika virus. They include: (i) targeted residual spraying; (ii) space spraying; (iii) larval control; and (iv) personal protection measures;
- Full-scale programmatic deployment is not currently recommended for any of the five new potential tools reviewed by VCAG;
- Carefully planned pilot deployment under operational conditions of two tools (*Wolbachia*-based biocontrol and OX513A transgenic mosquitoes) accompanied by rigorous independent monitoring and evaluation; and
More evidence is required before consideration of the pilot deployment of the three additional tools reviewed (sterile insect technique, vector traps and attractive toxic sugar baits).

VII. Working Group on Capacity Strengthening
Report from Professor David Molyneux, Chair

Recommendations:

- There is a need to decentralize capacity strengthening activities from WHO to Regional Offices and other appropriate institutional hubs, such as Collaborating Centres, to establish that the training courses necessary to maintain the technical skills are devolved to create more sustainable continuum of activities;
- Ensure that curricula for NTDs are incorporated into the training courses of country health programmes to sustain NTD knowledge, based on the material already available prepared by WHO, such as that developed for national programme managers and district-level material;
- Provide resources to ensure that laboratories that underpin NTD programmes (e.g. monitoring and evaluation; drug efficacy monitoring) meet the necessary international quality standards;
- Disseminate training materials through the use of mobile technologies, novel training methods and Applications to ensure the widest availability of NTD material focussing on district-level training through to the lower levels of the health system including to community and village health workers.
Day 2 – Open session
The second day of the meeting was open to partners in NTD control and other invited stakeholders.

7. Summary of discussions and deliberations from Day 1
The Chairperson welcomed the observers and partners in NTD control to the second day of the meeting. Dr Engels presented a brief update on the progress achieved by the NTD Department during the past year and summarized his presentation to the STAG which had been shared electronically with all present.

Professor de Silva summarized the discussions of the previous day and the recommendations of each of the Working Groups.

8. NTDs and SDGs: from target to indicator and tracers of equity
Mr Christopher Fitzpatrick gave a presentation on STD-NTD mainstreaming and monitoring. He chronicled the process that had led to the explicit mention of NTDs alongside HIV, TB and malaria within SDG3 (target 3.3): “By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases”. Progress towards this target will be monitored by an NTD-specific indicator (3.3.5): “Number of people requiring interventions against neglected tropical diseases”. Plans to monitor this NTD indicator were discussed as were several opportunities for mainstreaming the NTDs into many of the other non-health SDGs (examples include Goal 6: clean water and sanitation; Goal 11: sustainable cities and communities; Goal 13: climate action; and Goal 17: partnerships for goals).

In the context of safe cities, discussion focussed on the need to "build out" Aedes vectors through improvements to the peri-domestic environment, (engaging with UNHABITAT and other agencies where appropriate). The NTDs clearly fit within a wider development dialogue, which should provide an opportunity for their continued mainstreaming. Discussion also focussed on how to translate the 2020 NTD roadmap goals onto the 2030 SDG goals, and the importance of staying focussed on the 2020 NTD goals as already set.

9. Extended Special Programme for Elimination of NTDs (ESPEN)
Dr Benido Impouma joined the meeting via teleconference to update STAG on the establishment of ESPEN, a special programme set up to provide technical assistance and capacity building to endemic countries with focus on the five PC NTDs. Dr Impouma listed the progress made thus far to include: the launch of ESPEN; induction of a steering committee, and ongoing recruitment to meet human resource needs. The Regional Programme Review Group is expected to be the main technical committee and will inform the activities of the steering committee. Discussion centred on the transition from APOC to ESPEN, and especially ESPEN’s more expansive remit.
10. Leprosy elimination

Dr Erwin Cooreman from the Global Leprosy Programme (GLP, which is based in the WHO Regional Office for South-East Asia) made a presentation. Trends in the past decade have shown a very striking feature: a dramatic and sudden decline in new case detection of over 60% over a short period of time (2001–2005). Understanding the possible explanations for this dramatic fall is very important.

Possible explanations were shared:

- The dramatic fall in new case detection may represent a true fall in the incidence of leprosy following reductions in transmission of *Mycobacterium leprae* infection, but a large, sudden fall in transmission seems biologically implausible given the long and variable incubation period in leprosy and the evidence of continuing, significant rates of new cases in children.
- There may have been substantial over-diagnosis of leprosy before 2001, which has inflated the previous levels of new case detection. This may be a factor to explain the peak of new case detection between 1996 and 2001, a period of intensified case detection activities such as Leprosy Elimination Campaigns and Special Action Projects for the Elimination of Leprosy. However, the new case detection trends between 1985 and 1996 are remarkably stable and sustained over-diagnosis seems unlikely during this period.
- The most probable explanation is that the dramatic fall in new case detection is a result of a decline in leprosy activities following the declaration of elimination as a public health problem globally, and in individual countries. This decline includes reduced intensity and coverage of case detection activities, community awareness, and training in the diagnosis and treatment of leprosy often associated with the move from vertical leprosy control activities to integrated approaches. The recent rise in disability in new cases detected and the increasing delay in diagnosis reported by many countries support this explanation.

STAG noted the challenges faced by the Global Leprosy Programme in terms of its sustainability, research needs and better integration with other NTDs. STAG further noted the request for participation of STAG members in the Technical Advisory Committee of the Global Leprosy Programme.

11. Yaws in India

Dr Sudhir Kumar Jain of the Ministry of Health and Family Welfare, India, narrated the history of the Yaws Eradication Programme in India and the strategies adopted by India to control and subsequently achieve interruption of transmission. The surveillance and cash reward systems for reporting any confirmed case have increased rumour reporting but no rumour was ever confirmed as a true yaws case. Discussion centred on the request for WHO to formally acknowledge the interruption of transmission of yaws in India.

12. Zoonotic Neglected Tropical Diseases (zNTDs)

Jointly presented by Dr Bernadette Abela-Ridder and Professor Eric Fèvre

The current focus of the WHO zNTD team and the STAG Working Group is on rabies, *Taenia solium* cysticercosis, echinococcosis and food-borne trematodes. The continuing importance of integration with the Tripartite Group (WHO/FAO/OIE) was emphasized. Major successes in mobilizing commitment to rabies control and the 2030 aim of "zero human deaths from dog-mediated human rabies" was noted. Rabies has, as from this week, been incorporated as a
working group of the Strategic Advisory Group of Experts (SAGE) on Immunization, to review issues of rabies vaccination. WHO and rabies research partners have also won an award from the Global Alliance for Vaccines to undertake prospective and retrospective studies in both Africa and Asia. The zNTD team is building a business plan to support investment.

The importance of *Taenia solium* cysticercosis has been highlighted by both FAO (in a recent multi-criteria ranking) and the Global Burden of Foodborne Diseases report. A pilot study undertaking integrated control was highlighted, as were the WHO produced investment case and report identifying target product profiles for new or improved diagnostics. The need for integration of zNTDs with other work across WHO and in countries (e.g. rabies/echinococcus/vaccines and health system strengthening; cysticercosis/WASH/mental health/NTD control) was highlighted, as was the need to continue supporting efforts against zoonotic diseases.

13. Second NTD partners’ meeting 2017 and fourth WHO report on NTDs

Dr Engels presented the proposed outline for the fourth NTD report, which is due for publication in 2017. The proposed overall themes are:

- towards 2020 targets and beyond; and
- mainstreaming NTDs on the health and development agendas.

He suggested that a further report be produced in late 2019 to outline the progress made and set the 2030 goals for NTDs.

London Declaration: 2017 is the fifth anniversary of the London Declaration and when the fourth report is due. It is proposed that this event be marked by an inclusive NTD partners’ summit planned to last about 3 days, targeting a broader stakeholder group spanning across various sectors. The location and details of the summit have yet to be decided within the Secretariat.

Several perspectives for framing the NTDs in the report and at the partners’ meeting were advanced. For example:

- The content of the fourth report and the second partners’ meeting should argue that the NTDs are broader than the public health community. If the meeting attracts individuals from sectors other than health, it might attract individuals from such sectors who could be powerful in advancing the NTD agenda.

- Projected investments in NTDs could be presented as an answer to achieving robust and resilient health systems capable of responding to emerging threats from vector borne diseases rather than projecting the NTDs as “victims”. Investments in NTDs build capacity that prepares the health and economic systems for the shocks of the future related to the emergence of novel diseases.

- Vector control platforms built for NTD control are being used to counter recent outbreaks such as Zika, and should be strengthened.
14. Open statements from partners, and Q&A

STAG received statements from the following partners who were represented at the meeting:
   • DNDi
   • MSF
   • The Carter Centre
   • The Global Alliance for Rabies Control
   • The Bill & Melinda Gates Foundation
   • Imperial College London
   • Regional Network for Asian Schistosomiasis and other Helminth Zoonoses
   • Evidence for Action

A number of independent comments were also received from the floor.

15. Closing session

The Chair summarized the outcomes of the meeting, and STAG thanked the WHO Secretariat for a year of excellent work. The Chair and the STAG thanked the partners for their inputs during the course of the deliberations.

Dr Ren Minghui closed the meeting by thanking STAG and its partners. He noted that STAG had reviewed and addressed important issues such as the inclusion of new diseases on the list of NTDs, and how dynamic change is key to WHO’s ongoing reform – not a silo approach, but an integrated approach across issues.

Discussions on the SDGs were also very important as they will be key to moving forward in the future. NTD successes show that the NTD community is not overambitious when discussing elimination of disease – the evidence shows that on several fronts, progress is being made towards this goal.