STH Advisory Committee Annual Meeting 2021

Report & Recommendations

This document summarizes discussions and presents priority action items from the STH Advisory Committee meeting held virtually, November 1st and 4th 2021.
THE STH ADVISORY COMMITTEE

The STH Advisory Committee (STHAC) is an independent group of experts in the areas of policy, strategy, research, and program implementation related to soil-transmitted helminthiasis (STH) control. Individual STHAC members are specialists in child health; clinical medicine; diagnostic sciences; education; epidemiology; parasitology, public health program implementation; spatial statistics; and water, sanitation and hygiene (WASH). The Children Without Worms (CWW) is the secretariat of the STHAC. Children Without Worms was established in 2006 as a partnership between Johnson and Johnson and the Task Force for Global Health. CWW was the first program focused exclusively on reducing the burden of soil-transmitted helminth infections in school-age children around the world. GSK joined this partnership in 2012. While the drug donations are now being managed directly by the World Health Organization (WHO), CWW continues to work with partners to advance STH control and elimination through operational research, strengthening partnerships, and technical leadership.

As the technical and scientific arm of the STH Coalition, the STHAC holds an annual meeting to address current programmatic and technical issues relevant to the global campaign to control STH. While considering the latest research, the STHAC formulates guidance to support the World Health Organization (WHO), STH Coalition partners, implementers, pharma, and researchers. The 2021 meeting participants included STHAC members and observers. Children Without Worms serves as the secretariat for the STHAC.

STH Advisory Committee Membership
Juerg Utzinger (Chair)
Bruno Levecke
Rachel Pullan
Matthew Freeman
Theresa Gyorkos
Alejandro Krolewiecki
Lisa Rotondo
Hadley Matendechero Sultani
Sueng Lee

Publication: This report will be disseminated and placed on the CWW website. Please contact Children Without Worms (cww@taskforce.org) with comments or questions.

Disclaimer: Inclusion of information in this report does not constitute ‘publication.’
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ACRONYMS

AG      Adolescent Girls
COVID-19 Corona Virus 19
CWW     Children Without Worms
STH     Soil-transmitted Helminthiasis
GSK     GlaxoSmithKline
ICSPM   Integrated Community Based Surveillance for Program Monitoring
JAP     Joint Action Package
JNJ     Johnson & Johnson
M&E     Monitoring and Evaluation
MDA     Mass Drug Administration
MOH     Ministry of Health
NTDs    Neglected Tropical Diseases
PSAC    Pre-school age children
PC      Preventive Chemotherapy
SAC     School age children
SCH     Schistosomiasis
STAG    Strategic and Technical Advisory Group, World Health Organization
STH     Soil-transmitted Helminthiasis
STHAC   STH Advisory Committee
TRoP    Target Policy Profile
USAID   United States Agency for International Development
WASH    Water, Sanitation, and Hygiene
WHO     World Health Organization
WRA     Women of Reproductive Age
OPENING SESSION

The annual meeting of the STH Advisory Committee was held on November 1st and 4th, 2021, and included the World Health Organization in an official capacity. Prof. Juerg Utzinger (STHAC Chair) opened the meeting, welcoming the members and invited participants and shared the key highlights of this year’s meeting agenda.

REVIEW OF STATUS OF STHAC 2020 MEETINGS RECOMMENDATIONS

The 2020 STHAC Meeting held virtually focused on four main areas:

The Strongyloidiasis control added to the STH goals in the WHO NTD2030 roadmap
The Strongyloidiasis agenda has progressed and a diagnostics approach identified. This should now pave the way for further evidence from the pilot and subsequent mapping data towards the National Program Guidance. Strongyloides should not be included with STH because clinically and epidemiologically distinct from species in classic STH trio. STH has been classified as classical trio for many years. Changing definition now would lead to confusion. Lastly, different diagnostics are required for Strongyloides.

Monitoring and Evaluation Guidance
There remains an unmet need to develop clear Monitoring & Evaluation guidance for increasing numbers of countries with advanced programs. As global STH programs mature, there is more need for technical expertise and support. The STH Advisory Committee (STHAC) offers support to the WHO in the development of an expert group with the STH Coalition, including experts and implementing partners to address this gap. This guidance can be used to inform the developing the WHO NTD M&E framework. In July 2021, WHO did a call for experts to serve as members of the new Technical Advisory Group (TAG) on the control and elimination of schistosomiasis (SCH) and soil-transmitted helminthiases (STH).

COVID-19 Funding
Given its widespread endemicity, STH can be positioned as an indicator disease for systems equity measures. Several upcoming opportunities for new COVID-19 funding could be leveraged for health system positioning inclusive of STH & NTDs. Existing health systems platforms should be optimized for STH& NTD intervention delivery.
Policy Maker highlights
STHAC members noted several additional, important issues that need policy-makers’ attention as below:

• With 1.6 billion schoolchildren out of schools due to COVID-19, what is the role of the education sector in continuing/future school-based deworming? Should we be re-engaging in this partnership across the health and education sectors in a more meaningful manner? Communities could take a lead role in school health programs.
• Leverage the STHAC members’ positions to strengthening national capacity for quality research and initiate cross-sectoral research linkages.
• STHAC to develop a paper on STH research gaps that are linked to the 2030 roadmap goals. Issues of drug efficacy, generic drugs, availability mapping, unprogrammed deworming drivers, modeling women of reproductive age lifetime deworming, and the effects of climate change on STH & NTDs are important themes to consider. The STHAC could play a role in shaping research areas and filling some of the gaps with national research institutes.

**STH GUIDELINES & PROGRAMMATIC DECISIONS BASED ON PREVALENCE OF STH RATHER THAN POLICY**

Cara Tupps provided an overview of the current guidelines available to country programs for pre-school age children (PSAC), school-age children (SAC), and women of reproductive age (WRA). She presented specific examples of prevalence data from the CWW integrated community-based surveillance for program monitoring (ICSPM) surveys conducted in 10 districts in Bangladesh with the geospatial analysis. She created an interactive vote using Poll platform within the Zoom meeting. Until recently, there have been very few large surveys that provide robust, comparable data for SAC and WRA. Now, there are a number of recent surveys connecting these data. A systematic analysis looking at these together would be helpful and important to remember that many countries do have successful deworming programs reaching WRA, like the LF program.

**Observations/Recommendations:** The group reviewed various key programmatic decisions for a national program reviewing district data that could lead to policy decisions along with changes to a country Joint Application Package (JAP). The 2030 NTD Roadmap focuses on the elimination of STH morbidity due to moderate-to-high intensity infection (MHII). In the WHO guidelines for STH, the points discussed were: Target for pre-school and school-age children only as elimination as a public health problem.
Paul Emerson focused on the continuation of the COVID pandemic, everyone has been affected by loss and restrictions. Inequities and systemic problems in access to health care have been exposed and amplified. Economic and budgetary effects will be a multi-year and focus on innovation to improve efficiencies. The commitment remains the same, and we all have to focus on things that remain in our control. Key activities were outlined: Listening to what partners want from CWW was outline in the landscape analysis review. The need to continue supporting Bangladesh to facilitate efficiencies in the deworming program and shift to a prevalence-based program rather than a policy-based program. The Kenya program in their “break transmission strategy’ was highlighted for its innovations and integration of all NTDs. CWW initiated new linkages with Georgia Tech working with BioMedical Engineer students to focus on a replacement for the Kato Katz diagnostic.

Paul presented that CWW has adopted three milestones from the WHO’s 2030 Targets for STH Control Programmes.

![Milestones Image]

**Observations/Recommendations:** The Committee agreed that clarity of purpose and alignment around a common goal was key. focuses on the continued support of Bangladesh, Kenya and Uganda. None of the principle partners strongly promoted a focus on the control of Strongyloides, despite its recent inclusion among the STH. In addition, the overlap with Schistosomiasis control was also mentioned but not over emphasized.
HARMONIZATION BETWEEN THE STH ADVISORY COMMITTEE AND THE WHO TECHNICAL ADVISORY GROUP (TAG) ON STH AND SCH CONTROL AND ELIMINATION

Antonio Montresor outlined the anticipated roles and responsibilities of the WHO TAG on STH and SCH Control and Elimination and how WHO would like to see harmonization between the Technical Advisory Group and the Advisory Committee.

Functions of the WHO Technical Advisory Group on schistosomiasis and soil-transmitted helminthiases control and elimination

1. To review current and evolving scientific evidence on the elimination of schistosomiasis and STH as public health problems and, based on that evidence, make recommendations for consideration by WHO for development of guidance to countries;
2. To review current WHO recommendations (or strategies) for schistosomiasis and STH control and elimination and identify where additional detail (guidance) is needed to overcome specific programmatic challenges identified by neglected tropical disease programmes;
3. To develop strategic approaches on addressing such programmatic challenges where there is insufficient evidence available for a WHO recommendation;
4. To review gaps in the currently available evidence base and recommend priorities for research to address issues relevant to the elimination of schistosomiasis and STH;
5. To provide expert consensus when insufficient evidence is available to formulate recommendations in order that schistosomiasis and STH programmes can move forward with common strategies or with operational research the aims of which are to generate the evidence to support or refute the consensus recommendation;
6. To provide recommendations for consideration by WHO on the integration and/or coordination of schistosomiasis and STH control activities with those of appropriate programmes such as water, sanitation and hygiene (WASH) and veterinary public health, among others.

Observations/Recommendations: The Committee recommended that the STH Advisory Committee work to support the common goals of the global program and facilitate translation of the work of the WHO TAG into practice in the STH programs. Discussion focused on the need for the STHAC to consider the current skills, attributes, and specializations of the membership and, in consideration of the strategic goals of the CWW, seek suggestions on the above when recruiting new members as current members rotate off.
STH AND WOMEN OF REPRODUCTIVE AGE (WRA)

WHO with partners (including Theresa Gyorkos, STHAC member), drafted a policy brief to encourage countries to better address this area. The brief includes findings from two studies based on the DHS data analyses that showed the overall, clinic-based deworming coverage for WRA during 2nd and 3rd trimesters is around 20%. WRA deworming data are also linked to the neonatal data which showed that deworming during pregnancy was associated with a 15% reduction of risk for neonatal mortality and 3-11% for that of low birth weight. The policy brief is expected to release in January 2022. The brief focuses on expanding the reach and coverage of deworming programs for STH and SCH leveraging opportunities and building capacities. The Deworming policy brief aims to provide information for extending the reach of deworming programs to adolescent girls (AG) and WRA and to encourage a variety of health services targeted to these two groups to offer deworming. Some examples include secondary schools (piggy-backing on school based public health interventions like HPV vaccination programs), antenatal care services, postnatal care services, and well-baby clinics. Theresa presented four key questions: How to identify AG and WRA in need of preventive chemotherapy for STH? How to implement a deworming program for AG and WRA? How to monitor and evaluate a deworming program for AG and WRA? And How to report data from AG and WRA deworming programs?

Theresa Gyorkos lead a discussion on what this means going forward, and ask the Advisory Committee to share their thoughts on topics such as:

- Whether all eligible women in endemic countries would benefit from deworming, or should there be a targeted approach? If so, should the criteria be any STH, or specifically hookworm?
- Can school-based data guide programs that target WRA?
- Are WRA going to be named in the donation programs?
- Is it necessary to measure baseline prevalence, track progress in delivery, and measure outcomes?
- Should the outcomes for M&E be purely parasitological or should alternative indicators that are routinely being recorded, such as pregnancy outcomes (maternal anemia, low birth weight etc.) be a measure of program success?

**Observations/Recommendations:** Target for women of reproductive age (including adolescent girls) established an STH control program. Key if the STHAC would come forward with a kind of a systematic review, both using peer-reviewed papers and data from the grey literature. Potential to develop a specific proposal to the COR-NTD to
address this issue. In regards to policy, countries that are implementing the LF (with albendazole and ivermectin) are already targeting WRA. Therefore, it would be important to take these into account before considering scaling up.

Anticipated release date: January 2022

DEWORM3 UPDATE

Judd Walson provided an overview of the projected declines in prevalence from 2015-2030.

- If current trends continue, we would expect to see a 70% reduction in prevalence between 2015-2030.
- Unlikely to achieve less than 2% prevalence in many settings – MDA for disease control will need to continue.
- If MDA is stopped, infection prevalence will return to pre-MDA levels (in the absence of WASH or other interventions).

Judd then provided an overview of the DeWorm3 project objectives that include (1) Define the goal, (2) Evaluate intervention impact, and (3) Develop a strategy for implementation at scale. The three DeWorm3 countries are Malawi, Benin, and India. In 2021 they will continue with their assessments for outcome 1 and then outcome 2 assessments would carry through 2022 with the final analysis completed in Q3 of 2023. Final analysis would include qualitative, readiness, process mapping, and stakeholder mapping analyses all completed. Then, at the end of 2023 they will conduct a final economic evaluation analysis. One final area presented was
the Target Policy Profile (TPoP) has been developed based upon interviews and surveys with STH stakeholders. This TPoP outlines ideal characteristics of potential future guidelines, and could be used to inform potential future updates to STH policy. A survey was sent out to the STHAC members to review and provide feedback on ‘optimal’ and ‘minimally acceptable’ characteristics of guidelines.

**Observations/Recommendations:** Discussions led to the future of STH with the current drug donations ending their commitments until 2025. High risk groups such as pregnant women and other vulnerable groups remain untreated, then STH may be left behind as LF is eliminated. The group then looked at what is the Endgame for STH that led to discussion of what if we stop MDA. If stopping MDA then when can we stop; where can we stop; what does it take to get there; and what is the frequency and duration needed to eliminate. If we don’t stop MDA then how do we maximize program efficiency and effectiveness; how do we maximize the coverage; who is most likely to be missed, how do we reach the most vulnerable; and what is the frequency and duration to maximize impact. There was discussion that led to how DeWorm3 proposes to directly inform stopping decisions from the evidence that they are generating. DeWorm3 will directly inform guidelines and policy. Informing policies would be instrumental. Additional specific issues for discussion are the utility of Kato-Katz assessment of the endline for programmatic and policy decision making, use of cutoffs for molecular detection assays, strategies to communicate current state of the evidence given some countries are moving forward towards piloting elimination strategies, and opportunities to harmonize and pool data.

**USE OF GEOSPATIAL METHODS IN STH PROGRAMS**

Penelope Vounatsou from Swiss TPH and Peter Diggle from Lancaster both presented geospatial approaches. Geospatial methods are being used in two different approaches to improve efficiency in deworming programs. First, in the analysis of survey data to fill in the gaps for unsurveyed areas with predicted prevalence, and second, to optimize survey sample sizes for efficient use of resources in surveillance.

**Penelope Vounatsou** presented the methods and preliminary findings of a geospatial analysis of survey data from districts in Bangladesh to predict the prevalence and intensity of STH in districts where surveys have not been conducted. The objectives outlined were (1) to identify environmental and socio-economic risk factors that are related to geographical distribution of species-specific STH prevalence, (2) to predict the disease risk by species at high spatial
resolution and detect high prevalence areas, and (3) to estimate the number of required treatments by district.

**Peter Diggle** will present progress in the use of geospatial methods to optimize survey design in Kenya. Peter pointed out that several countries are approaching a phase where, after 5 to 6 years of intervention of mass drug administration (MDA), there is a need to evaluate the current levels of STH prevalence and to decide how to move forward need optimal survey designs that can achieve these goals with limited resources. Any sample size calculation is based on assumptions about the quantity that we wish to measure. To design any prevalence survey it is essential to have an idea of the likely geographical distribution of prevalence when collecting data. Impact survey is a special case – lots of information at our disposal. Information available include: baseline pre-intervention prevalence data; covariates potentially associated with prevalence; and post-baseline MDA treatment history.

**Observations/Recommendations:** Discussion on the use of the estimated prevalence to guide deworming policy in Bangladesh. Using data to inform programmatic decisions is key in using geospatial modeling to do national predictive mapping. The two approaches have two goals and one is implemented prior to MDA whereas the other is post MDA. Moving forward we need to bridge the gap between the complexity of the approach and the knowledge of the end user. We need to focus on the WHO Manual, develop user friendly web applications, and provide in country training.
1. COVID continues to open new conversations across diseases, countries and partners towards ensuring efficiency and safety of joint operations and services.
2. Current WHO Monitoring and Evaluation guidelines will help the collaboration dialogue between STH stakeholders in coordination with both the STH Advisory Committee and the WHO Technical Advisory Group.
3. National research institutes and leaders could play a pivotal role in bringing government and private sector thought leaders together through national inter-sectoral work groups.

2021 Annual STH Advisory Committee and WHO representatives, Virtual Meeting

Front top left to bottom right: Juerg Utzinger (STHAC chairman), Mariana Stephens (CWW), Paul Emerson (CWW Director, STHAC), Theresa Gyorkos (STHAC), Antonio Montresor (WHO Geneva), Penelope Vounatsou (Swiss TPH), Lynn Leonard (Johnson & Johnson), Khumbo Kalua (BICO Malawi), David Ross (CEO, TFGH), Cara Tupps (CWW), Darin Evans (USAID), Matthew Freeman (STHAC), Rachel Pullan (STHAC), Sanjaya Dhakal (CWW), Lisa Rotondo (STHAC), Minne Iwamoto (GSK), Ploi Swatdisuk (USAID), Denise Mupfasoni (WHO Geneva), and Sultani Hadley Matendeche (STHAC).

Not pictured but in attendance: Judd Walson (DeWorm3), Peter Diggle (Lancaster), Bruno Levecke (STHAC), and Alejandro Krolewiecki (STHAC)
Appendix A – Meeting Agenda

Agenda
2021 Meeting of the STH Advisory Committee
November 1st and 4th, 2021, Virtual Meeting

Day 1: Monday November 1st

<table>
<thead>
<tr>
<th>Time</th>
<th>Topics</th>
<th>Person(s)</th>
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<tbody>
<tr>
<td>8:00 – 8:50am</td>
<td>Welcome, and administrative announcements</td>
<td>Juerg Utzinger, Mariana Stephens</td>
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<td>Juerg Utzinger will welcome participants and outline the objectives for the meeting. A final version of the agenda will be adopted.</td>
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<td>Mariana Stephens will make administrative announcements.</td>
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<td>Using the current guidelines to make programmatic decisions based on prevalence of STH rather than policy</td>
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Please note that in order to allow the amount of time required for each section, time slots are not fixed. The meeting will be closed early if all the allocated time is not required.

All times shown are Eastern Daylight Time (UTC -4). Watch out! The clocks have gone back in Europe, but not in the USA. The UK will be +4 and Switzerland +5 hours from Atlanta.
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>8:50am</td>
<td>Break followed by Group photo after break</td>
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<tr>
<td>9:00 – 9:50am</td>
<td>Director’s Report and discussion</td>
<td>Paul Emerson</td>
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<td><strong>Cara Tupps</strong> will provide an overview of the current guidelines available to country programs for pre-school age children, school-aged children, and women of reproductive age. She will then provide specific examples of prevalence data from community-based surveys conducted in districts in Bangladesh and ask members of the Advisory Committee to interactively vote on how they would advise the national program to implement in the given scenarios. Committee members should be ready to justify their responses, when <strong>Paul Emerson</strong> leads a brief discussion on the findings. <strong>Antonio Montresor</strong> will round out the session with how WHO is interpreting and advising countries on the guidelines.</td>
<td>Cara Tupps, Paul Emerson, Antonio Montresor</td>
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<td>9:50am</td>
<td>Break (10 minutes)</td>
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<td>10:00 – 10:50am</td>
<td>Harmonization between the Advisory Committee and the WHO Technical Advisory Group on Soil Transmitted Helminthiasis and Schistosomiasis Control and Elimination</td>
<td>Antonio Montresor, Juerg Utzinger</td>
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</table>
Control and Elimination and how WHO would like to see harmonization between the TAG and the Advisory Committee. He will also provide any other updates from the recent Regional Webinar series and from Geneva.

**Juerg Utzinger** will lead a discussion on how the Advisory Committee can work to support the common goals of the global program and facilitate translating the work of the STAG into practice in the programs.

**Juerg** will ask the Advisory Committee to consider the current skills, attributes, and specializations of the membership and, in consideration of the strategic goals of CWW, seek suggestions on under-represented skills, attributes, and specializations that we should seek when recruiting new members as current members rotate off.

| 10:50am | Break (10 min) |
| 11:00am – 12:00pm | This time will be reserved and used if the discussions and deliberations have not concluded. |

**Juerg Utzinger** will close the meeting for the day.
## Day 2: Thursday November 4th

<table>
<thead>
<tr>
<th>Time</th>
<th>Topics</th>
<th>Person(s)</th>
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<tbody>
<tr>
<td>8:00 – 8:50am</td>
<td><strong>Focus on efficiency:</strong> Getting the pills to those at risk of morbidity from intestinal worms and leaving nobody behind</td>
<td>Theresa Gyorkos</td>
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<td><strong>Women of reproductive age (WRA)</strong></td>
<td>Theresa Gyorkos</td>
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<td><strong>Theresa Gyorkos</strong> will give a summary overview of the history of inclusion of WRA in deworming programs, the current policy brief from WHO, and the implications of the brief on implementation and monitoring and evaluation in the programs. Theresa will then lead a discussion on what this means going forward, and ask the Advisory Committee to share their thoughts on topics such as:</td>
<td>Theresa Gyorkos</td>
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<td>• Whether all eligible women in endemic countries would benefit from deworming, or should there be a targeted approach? If so, should the criteria be any STH, or specifically hookworm?</td>
<td>Theresa Gyorkos</td>
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<td>• Can school-based data guide programs that target WRA?</td>
<td>Theresa Gyorkos</td>
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<td>• Are WRA going to be named in the donation programs?</td>
<td>Theresa Gyorkos</td>
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<td>• Is it necessary to measure baseline prevalence, track progress in delivery, and measure outcomes?</td>
<td>Theresa Gyorkos</td>
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<td>• Should the outcomes for M&amp;E be purely parasitological or should alternative indicators that are routinely being recorded, such as pregnancy outcomes (maternal anemia, low birth weight etc.) be a measure of program success?</td>
<td>Theresa Gyorkos</td>
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<tr>
<td>8:50am</td>
<td><strong>Break (10 min)</strong></td>
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<tr>
<td>9:00 – 9:50am</td>
<td><strong>Progress and implications of the DeWorm3 trial in India, Benin, and Malawi</strong></td>
<td>Judd Walson</td>
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<td><strong>Judd Walson</strong> will present on progress in the DeWorm3 trial and facilitate a discussion on how the Advisory Committee can assist in getting the results into practice.</td>
<td>Judd Walson</td>
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<tr>
<td>Time</td>
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<tr>
<td>9:50</td>
<td><strong>Break (10 minutes)</strong></td>
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| 10:00-10:50| **Use of geospatial methods in STH programs** | Geospatial methods are being used in two different approaches to improve efficiency in deworming programs. 
First, in the analysis of survey data to fill in the gaps for unsurveyed areas with predicted prevalence, and second, to optimize survey sample sizes for efficient use of resources in surveillance. | Penelope Vounatsou, Peter Diggle, and Juerg Utzinger |
<p>| 10:50      | <strong>Break (10 minutes)</strong>     |                                                                                                |                                                  |
| 11:00am – 12:00pm | <strong>This time will be reserved and used if the discussions and deliberations have not concluded.</strong> | Considering the discussions we have had, the strategic direction of CWW, and ties with the WHO Technical Advisory Group (TAG) on STH and SCH | Juerg Utzinger |</p>
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<tr>
<td>Control and Elimination. <strong>Juerg Utzinger</strong> will ask Advisory Committee members for suggestions for agenda items for future meetings. <strong>Juerg</strong> will close the meeting.</td>
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</table>