

**COR-NTD 2020**

**Virtual Meeting, November 12 – 14**

**Integrating for Impact**

**STH: OR needs to sustain the gains**

**Session Date:** 11/12/20

**Session Time:** 11:00 AM - 2:00 PM EST

**Session Description:** Generating and using high-quality, sub-national STH data for local programmatic decisions, and identifying WASH elements that influence STH outcomes, will enable efficient and informative planning for STH morbidity elimination through 2030, as prevalence reduces through standard MDA.

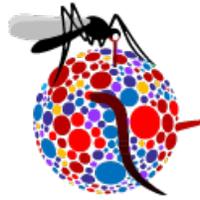
Process and timeline: The STH Coalition was requested by the COR-NTD organizers to serve as a coordinator for a synthesized session highlighting the OR agenda and needs for STH towards the 2030 goals. The earlier breakout session (virtual and held in October) would combine learnings from the three selected sessions below. Session organizers will next synthesize OR learnings and proposals from this presentation (with input from individual session leaders) and the “synthesized” summary will be subsequently presented at the main COR-NTD meeting in November.

Sessions included in this synthesis:

1. India’s new helminth control paradigm – Large-scale successes: India’s implementation, evaluation & Roadmap development for STH control (Chair: Don Bundy)
2. Approaches for areas not responding to MDA – Integrated strategies for hotspots: beyond ecology and towards cross-cutting programmatic challenges (Chair: Goylette Chami)
3. WASH: Where’s the evidence? – Understanding the role of WASH in the control of NTDs and the current research gaps (Chairs: Yael Velleman & Pauline Mwinzi)

**Summary:**

These three sessions highlight improved program metrics and methods for collecting robust data to evaluate current STH interventions. These three sessions highlight improved program metrics and methods for collecting robust data to evaluate current STH interventions. One session will focus on the success of the India’s national deworming day – the largest single day public health program globally - and the knowledge gaps that are emerging as prevalence



**COR-NTD 2020**

**Virtual Meeting, November 12 – 14**

**Integrating for Impact**

reduces and more granular program data become available. The other sessions address specific challenges for advanced and mature deworming programs, including how best to assess “hotspots” (common across STH and schistosomiasis), and how best to link environmental factors and WASH with programmatic efforts.

The STH program in India has invested into gathering baseline and impact measures for parasitological outcomes from both school-based and community-based sampling. Presentations will highlight the use and comparative advantages of each approach for national programs. They will also highlight the contribution of the High Level Scientific Committee on STH to approach operational research questions and provide recommendations to the National Deworming Program.

As countries conduct parasitologic surveys, advanced programs are picking up “hotspots” or areas of continued high transmission following multiple MDAs. The definition, assessment and interventions for such “hotspot” areas will be shared for STH and schistosomiasis.

The session on WASH will present the latest data from operational research studies and a Cochrane review to show the association between specific WASH elements and STH control. Areas for further operational research in this area will be recommended.

Together, this session will identify priority research areas to assist countries and partners in achieving the WHO 2030 Roadmap goals.

**Session Chairs:** Goylette Chami, Rubina Imtiaz, Anna Phillips & Priya Jha

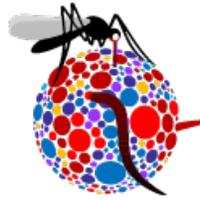
**Session Rapporteur:** Girija Sankar

---

## **KEY DISCUSSION POINTS**

*What key findings and data did the group identify via presentations? What issues were raised in discussions?*

The presentations covered topics including strategies for integrated hotspots (for SCH & STH), successes and next steps in India’s Helminth Program, and the interlinkages between STH and WASH interventions and opportunities to improve the impact of WASH on STH and SCH interventions.



**COR-NTD 2020**

**Virtual Meeting, November 12 – 14**

**Integrating for Impact**

The discussions on integrated hotspots looked at how some of the more mature SCH and STH programs that have delivered many years of consistent interventions (MDA), are now running into challenges related to issues of measurement of disease prevalence particularly when prevalence is low. In such countries and programs, better integration of STH and SCH service provision requires a better understanding of disease “hotspots.”

Prof. Dan Colley’s presentation on studies from Sub-Saharan Africa focusing on SCH revealed that hotspots (for SCH) could be identifiable after two rounds of MDA and that community participation and leadership is key to this identification.

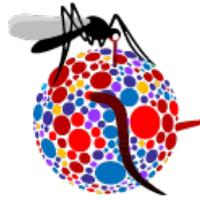
Prof. Peter Diggle’s presentation on co-sampling strategies for STH and SCH based on prevalence data from primary schools in Kenya showed that despite the different spatial scales, a similar sampling strategy using a geostatistical framework can be applicable to both diseases.

Dr. Narcis Kabateriene’s presentation looked at challenges due to severe morbidities from SCH around Lake Albert in Uganda (in an area that had been in continuous treatment since 2003).

Dr. Rubina Imtiaz’s presentation on using a 46-item checklist on assessing the STH program in Bangladesh showed that hotspots could arise due to broad sweeping issues that include intervention coverage issues, design errors, drug efficacy, and resistance.

The presentation by Dr. Sila Deb on India’s Helminth program provided an overview of the considerable progress made through nation-wide national deworming day campaigns through which over 200 million children are treated with deworming drugs. The presentation also looked at critical operational research questions that need to be addressed as STH prevalence continues to drop and interventions may need to be more focused to capture increased differentiation in worm burden across sub-national areas.

Presentations on WASH and STH interlinkages included discussions of recent systematic reviews and published trials on WASH and STH. Discussions highlighted that some of the heterogeneity across WASH trials could be due to the complexity of intervention designs, the type of STH species and the level of STH prevalence, among other reasons. Presentations also looked at developing a WASH and NTDs research agenda that can support the new NTD roadmap.



**COR-NTD 2020**

**Virtual Meeting, November 12 – 14**

**Integrating for Impact**

## **KNOWLEDGE GAPS IDENTIFIED**

*What data and tools need to be generated to address the issues raised by the group?*

*Integrated Hotspots:*

- Poor identification of disease hotspots possibly stymies the integration of STH and SCH surveillance and intervention.
- With SCH, the emphasis now is on precision mapping and sub-district mapping, whereas with STH, the current focus appears to be on strategies to reduce the number of treatments (with deworming drugs). Hence, more focal mapping in STH does not necessarily reduce the number of treatments. Consequently, there is a need to reconcile these two differences in order to identify and use integrated hotspot approaches.
- Co-sampling or spatially regulated sampling framework requires considerable statistical expertise that may not be currently accessible in endemic countries. This kind of sampling also requires robust environmental and location data.
- It remains unclear how best to define/quantify “response” to MDA (for SCH). What should be optimized? Prevalence or intensity? What is the period for assessing responsiveness? There seems to be variation in reinfection rates and drug efficacy between STH and SCH, which need to be taken into consideration in defining responsiveness.
- The need for capacity strengthening to improve statistical expertise for using co-sampling or spatially regulated sampling frameworks for STH and SCH surveillance was identified, as was the need for high-quality environmental and location data to enable spatially regulated sampling frameworks.

*India’s Helminth Program:*

- In India, deworming has historically been managed and executed at the state level. However, it remains to be seen how treatment can remain cost-effective in a shifting prevalence environment, and in light of state and sub-state differences.
- There is a need for alternate diagnostics as prevalence drops and for drug efficacy surveys as MDA continues, over time.
- School-based and community-based surveys were conducted in two states and results showed that school-based surveys were more cost effective than community-based surveys in the given states. In what contexts should the national program undertake community-based surveys to determine STH prevalence and intensity?



**COR-NTD 2020**

**Virtual Meeting, November 12 – 14**

**Integrating for Impact**

*WASH and NTDs:*

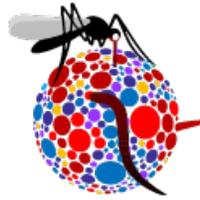
- It is not clear what kind of WASH intervention modalities might have the most impact on STH.
- WASH strategies are not currently standardized to achieve high coverage and use.
- With WASH, how can we quantify the magnitude of effects of targeted interventions on STH and SCH?
- How can the NTD community think about WASH and mainstream NTD-related behaviors into WASH programming?
- Few interventions utilize behavioral-centered design; interventions often focus on addressing risk and ability factors.
- Community engagement – need a solid understanding of community ideas, needs, & priorities, in order to design effective and accepted interventions.
- Opportunities of NTD surveys to include WASH: standardization is important to ensure relevant and comparable data is collected for stronger analysis.
- Role of gender and power dynamics in uptake of WASH interventions needs further research.
- How can we help large-scale NTD programs and WASH sectors become better integrated and leverage each other's resources to reduce burden of STH and SCH?

## **RECOMMENDED NEXT STEPS**

*What operational research and other actions need to be taken to address the knowledge gaps identified by the group?*

*Strategies for integrated hotspots:*

- How can we extend spatially regulated sampling frameworks (for STH and SCH, using school-based surveys) to community-based surveys?
- How many rounds of MDA are required before classifying an area as a hotspot? (SCORE studies showed that two rounds of MDA were enough to identify hotspots for SCH.)
- Can we reallocate resources from responsive to unresponsive areas (hotspots) in a country like Uganda where there appear to be many hotspots?
- What criteria can identify effective WASH interventions in hotspots – would WASH interventions that may be effective in hotspots for SCH also work for STH?
- How quickly is morbidity resolved for STH and SCH, and what are the differences in how morbidity is resolved in these two diseases?



**COR-NTD 2020**

**Virtual Meeting, November 12 – 14**

**Integrating for Impact**

- What is the applicability of the STH scoping tools/checklists for SCH?
- How can we monitor treatment areas over time to identify factors that can predict a potential hotspot?
- Are there shared reasons for why some areas become hotspots for STH and SCH?
- Integrated surveillance for STH and SCH at the sub-district level – given the move towards precision mapping for SCH, is this something that can also be explored for STH?

*India's Helminth Program:*

- What are the decision-making criteria to move from standard WHO state treatment frequency decisions to alternate approaches such as moving to sub-state level interventions, using alternate diagnostics, conducting drug efficacy surveys, and other operational questions for STH control?
- What impact are WASH efforts having on STH prevalence/intensity, and how can we best target them for improved outcomes?
- How and what type of modeling can best contribute to future deworming efforts in India?
- How, when, and at what scale should drug efficacy be addressed, given the risks posed by large-scale MDA programs?
- What is the best strategy to facilitate integration with other government agencies responsible for WASH, LF to enhance deworming impact?

*WASH and STH:*

- What kinds of individual WASH intervention modalities will have the most impact on STH?
- What are the minimum coverage thresholds necessary in WASH interventions to see a noticeable impact on STH?
- Is fecal egg count a good proxy for measuring impact of the effects of WASH targeted interventions on STH and SCH?
- What are the synergistic effects of WASH interventions alongside PC?
- What is the impact of sharing latrines on STH and SCH?
- What is the role of gender and power dynamics on the uptake of interventions as well as prevalence?
- How do we measure true usage of latrine and soaps?
- Does WASH influence school attendance?
- How can we standardize data collection on WASH and NTDs? How can we collect better quality data?



**COR-NTD 2020**

**Virtual Meeting, November 12 – 14**

**Integrating for Impact**

- Bringing in social sciences research to better understand community ideas, needs, & priorities, in order to design effective and accepted interventions.
- Leverage opportunities provided by COVID-19 landscape: messaging around handwashing, role of WASH in breaking transmission chain of diseases, funding available for hygiene, increased focus on water & sanitation systems.
- WASH and NTDs requires a systems-change, multi-stakeholder approach (environment, health, economics, education) to achieve gains.