

## Using a Systems Approach to Improve Effectiveness of MDA with PC-NTDs

<b>Session Date &amp; Time:</b>	Tuesday, November 19; 9:00 AM to 12:00 PM
<b>Session Location:</b>	Bellagio 1, MGM National Harbor
<b>Session Description:</b>	We aim to explore causes of the decay in the efficacy of therapeutic regimens used in mass drug administration (MDA) for neglected tropical diseases addressed by preventive chemotherapy (PC-NTDs), and will address key issues in operational and implementation research related to efforts to close the efficacy-effectiveness gap for MDA across PC-NTDs.
<b>Session Chairs:</b>	Margaret Gyapong and Olumide Ogundahunsi
<b>Session Rapporteur:</b>	Cara Tupps, Children Without Worms

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### KEY DISCUSSION POINTS

- The efficacy of MDA for PC-NTDs will inevitably decay on the way to community effectiveness, taking into account various practical, logistical, and behavioral barriers related to program implementation. The efficacy decay framework is a useful tool for organizing and describing this process in terms of access, eligibility, provider compliance, and participant compliance.
- Margaret Gyapong explained how the community-directed treatment approach has become the mainstay for MDA programs as studies have demonstrated its effectiveness over health service treatment. The approach allows communities to select trusted individuals to serve as their community drug distributors (CDDs), who are then trained by the health system.
  - While research supporting the CDD approach to MDA is strong, efficacy decay has still been an issue. In Ghana, despite significant progress over fifteen years of lymphatic filariasis (LF) programming, hotspots remain where prevalence is still above the 1% threshold.
- In terms of **access** (the extent to which those at risk of infection are served), the LF and onchocerciasis program in Niger observed three main categories of constraints. These challenges were presented by Olumide Ogundahunsi on behalf of Salissou Adamou, who was unable to attend.
  - Insecurity in the region, geographical barriers, and social and economic issues limited access of the population to interventions. Some solutions to improve access were the engagement of local security forces and NGOs, use of alternative transportation methods, use of mobile treatment units, increased motivation efforts for CDDs and engagement of community leaders.
  - Despite major challenges, LF is endemic in 11 districts in 2019, compared to 54 in 2003. However, several failures were detected during an impact survey despite good multi-

year coverage. The question remains whether this is due to sociocultural/behavioral issues preventing uptake, or to insecurity preventing access.

- **Eligibility** (how well programs identify individuals eligible to receive the health intervention) and **provider compliance** (how well the provider initiates the correct procedure for health problem) were discussed by Alison Krentel, who gave examples from MDA programs in multiple sites, including Kenya, Cote d'Ivoire and Indonesia.
  - Local re-interpretation of World Health Organization (WHO) exclusion criteria can sometimes lead to systematic exclusion of population groups and subsequently limited coverage. Training program managers on the purpose and adaptability of these guidelines was a solution in these cases.
- Directly Observed Treatment (DOT) is the preferred method for MDA. When it is not adhered to it results in overestimation of coverage, missed coverage-compliance gaps, drug wastage, and decreased trust among community members.
  - Solutions to encourage DOT include adding more time to the schedule, considering the timing of administration (following midday meal in India), use of dosing poles and finger marking to confirm treatment.
- CDD performance is influenced by a number of highly contextual factors. Volunteers are not homogenous and come from very different backgrounds. Key factors, such as urban/rural background, gender, age, education level, profession, and income, can affect motivation, expectation and efficiency of CDDs.
  - CDDs encountered adversity, such as opportunity costs, aggressive behavior from recipient families, and moral dilemmas around providing drugs to ineligible persons. This creates demand for increased and ongoing support and training.
  - CDD selection does not always include community participation, which results in CDDs who are not selected by community members and often not coming from within targeted communities. This is partially due to increased demand for CDDs across PC-NTDs, which makes it difficult to find available volunteers within communities.
- **Participant compliance** (how well the recipient/patient follows medical advice) was discussed by Caitlin Worrell, who described the use of a new rapid tool to identify behaviors influencing MDA compliance.
  - The RANAS technique, developed by the water, sanitation and hygiene (WASH) community, was piloted for this purpose in Indonesia's LF program which has a low average compliance rate of 49%. This framework assesses Risks, Attitudes, Norms, Abilities, and Self-regulation factors related to MDA compliance.
  - First, the RANAS tool was used to identify potential behavioral factors linked to participant compliance in MDA campaigns. Second, the potential behaviors were tested for correlation with compliance using a doer/non-doer study. Third, behaviors with significant correlation to compliance or non-compliance were targeted for change using appropriate behavior change strategies. Fourth, the strategies used were implemented and evaluated using a before-and-after trial to identify the best ones to apply at scale.

**KNOWLEDGE GAPS IDENTIFIED**

The following questions were raised by participants during the breakout session:

Efficacy Decay Framework

- How can we use systems thinking to support the determination of MDA adherence?
- How can we use the framework to determine when and where MDA is appropriate?
- How can we use this approach to contextualize MDA strategies?

Access

- What are the best context specific platforms for reaching hard-to-reach (mobile, migratory) groups?
- How can we address measurement challenges, including baselines and changing population sizes?
- How can we prepare for and manage the transition from campaigns to integration within the health system, and ultimately in Universal Health Coverage?

Provider Compliance

- What are the means to give agency to CDDs that they can apply to their work (motivation, empowerment, adult learning principles in training, flexibility of scheduling)? Will this have positive outcomes on the program overall?
- How can we measure quality in MDA coverage beyond drugs distributed?
- What are the providers' perspectives on how to tackle areas of prevalence <5%?

Participant Compliance

- What motivates compliance over time?
- How can we measure compliance without reliable denominators (changes due to political events, migration, displacement, etc.)?
- What role can incentives play in increasing level of compliance?

**RECOMMENDED NEXT STEPS**

- The Efficacy Decay Framework should be used to identify MDA efficacy challenges and inform solutions from a systems approach, especially in "hotspot" areas of persistent transmission. Lessons learned from these experiences should be documented and shared.
- Access among hard-to-reach groups, should be studied and innovative ways to measure and plan for improved access among these groups should be piloted and shared.
- PC-NTD partners should begin planning for how to best transition from campaigns to integration of PC into the health system, including advocacy for inclusion in universal health coverage (UHC) packages.
- WHO guidelines for PC-NTD treatment, including eligibility criteria, should be reviewed annually with both new and established program staff. Community leaders should be well informed about eligibility criteria and the purpose they serve for the program.

- Training guidelines for CDDs should be revisited and made more adaptive, incorporating interpersonal communication training, role play, and space for CDDs to share challenges with one another. Attention should be paid to the profiles of CDD volunteers in training, considering incentives and providing support.
- Communities should be engaged in describing challenges facing PC-NTD programs and developing appropriate solutions. Having communities co-develop strategies will help to ensure they are appropriate and acceptable, and increase motivation.
- Research is needed to identify the extent to which behaviors, socio-cultural factors, program delivery, and other contextual aspects influence MDA compliance, and what works in addressing them.
- The effectiveness of the RANAS technique should be studied further in different contexts and at different scales, and other behavior change tools should be tested and/or adapted to identify and understand key influential behaviors for participant compliance in MDA.