Effectiveness, acceptability, and feasibility of co-delivery of two Mass Drug Administrations with partial integrations of three other complementary health interventions campaigns: Implementation research in Ethiopia

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Introduction and Background

• The WHO roadmap for ending NTD pays greater attention to actions within an integrated approach to facilitate co-delivery of NTD interventions (WHO, 2021).

• Ethiopian NTD strategy elimination also pays attention to integrated approach for the co-delivery of NTD health services (MOH 2021).

• Integration of effective social mobilization, advocacy, and behavioral change interventions (SBCC) are essential.

An integrated approach to NTD intervention

• improve health outcomes, efficiency and effectiveness, and better program management

• Yet, in Ethiopia, multiple health campaigns occur each year with inadequate integration and coordination (MOH, 2021)

• Evidence are meager regarding how effective, acceptable and feasible of such integration
Study Objective
To evaluate the **effectiveness, acceptability and feasibility** of the full integration of two MDA campaigns and three other complementary health interventions (2MDA+3) in the Ethiopian healthcare context

**Safety in administering medicines**
for neglected tropical diseases

**Co-delivered** to eligible populations
The same team & same logistics, led by HEWs & supported by community volunteers

**WaSH**
- Awareness raising, promoting sanitation & hygiene behaviors

**MDA 1:** De-worming for Soil-transmitted helminthes (ALB/MEB)
- Target population: Male 5-19 yrs & female 5-49 yrs
- Existing modality: school based
- Administered by HEWs facilitated by school teachers

**MDA 2:** Preventive Chemotherapy for Onchocerciasis (IVM)
- Target population: >5 yrs
- Dose: Depends on height
- Existing modality: community based distribution by Community Drug Distributors (CDDs)

**COVID-19**
Awareness raising, promoting self-protective behaviors

**STH**
- SBCC-Education
- Identifications & referral of unvaccinated/drop out < yr child
A program of Map of Study Location

- Oromia region, Jimma Zone is the Setting for the Implementation Research
- Five districts Gomma, Mana, Kersa, Omo Nadda & Omo Beyam) selected considering co-endemicity for soil transmitted Helminths and Onchocerciasis
- Ten villages (2 villages per District)
  - Gomma (Yachi & Belfie Koche)
  - Mana (Guddata Bula & Haro)
  - Kersa (Awayi Sebu & Kitimbille)
  - Omo Nadda (Toli Sebeta & Nadda chala)
  - Omo Beyam (Meti Segeda & Oda Buli)

Fig 1. Map of the study location
Methods


**Study process and methods**

- **July-Sep 2021**
  - Formative – qualitative
    - Qualitative (FGDs, KIs, & EGDs) (explored barriers, enablers & opportunities)
  - Formative - Household survey informed by qualitative
    - Households survey conducted on 732 (KAPs)

- **Dec 2021-Jan 2022**
  - Development of BCC and formats and community registration (n=77, 428 registered household members)
  - Diverse BCC materials, messages, & formats
  - Participatory designs of co-delivery strategy (micorplan) and capacity development for frontline HWs

- **May 2022**
  - Implementing of the co-delivery (village level) by HEWs and volunteers (co-administration)

- **Co-delivery effectiveness outcomes (reach/coverage)**
  - Implementation effectiveness: facilitators/enablers shaped it

- **Oct-Nov 2021**
  - Formative - Household survey informed by qualitative
    - Households survey conducted on 732 (KAPs)

- **Feb-Apr 2022**
  - Participatory designs of co-delivery strategy (micorplan)
  - Capacity development for frontline HWs

- **Jun-Sep 2022**
  - Post MDA validation KAP integrated survey and analysis
  - Sampled 776 HHs & 4,343 people

**Ethics:** Approved by JU-IRB
Results: Sanitation awareness, & practices

Community KAPs and understandings on target diseases, sanitation and hygiene behaviors

- **SBCC exposure:** Overall 88.5%
- Community awareness and knowledge regarding target diseases, and practices were substantially improved
- Knowledge of causation (bite by black fly) onchocerciasis (increased by 20%)
- Knowledge of IVM drug for treatment of Oncho (by 30.1%)
- Knowledge of risk factors for STH increased substantially (contact with soil/feces transmit STH by 13%)
- Hand washing practice before handling/eating food (by 32.8%), after toilet (by 31.7%), after touching soil (by 14.1%).

General awareness related to COVID-19

- Knowledge of symptoms
  - Fever from 45.5% to 68.8%
  - Dry cough from 66.0% to 78.3%
  - Shortness of breath from 31.1% to 50.7%
  - Headache from 27.0% to 46.3%

**Knowledge of transmissions:** Air droplet (during coughing, sneezing, talking) (82.2% vs 88.0%)

**Knowledge of prevention:** Wearing mask (by 15.2%)
- Avoid touching eye/nose/mouth before washing hand (by 36.8%);
- Use of alcohol/sanitizer (by 12.3%).

**Awareness of COVID-19 vaccine**
- Awareness increased from 52.5% to 88.8% and willingness to 92.8% to 96.9%

Identification and referral of unvaccinated/dropout children:
- 2617 children were identified, 332 (12.7%) were not vaccinated and/or dropout/discontinued and referred.
Results: Co-administration Treatment Coverage

Fig 3a. Treatment coverage, Ivermectin (by sex)

Fig 3b. Treatment coverage, ALB/MEB (by sex)
The co-administration was perceived to be effective, acceptable, and feasible to the beneficiaries and stakeholders.

**Beneficiaries accepted co-administration for reasons:**
- Direct engagement of HEWs, “Professionalism”
- Perceived fairness, and increased access to drugs
- Better transparency, and impartiality and bias in the distribution
- No experience of drug shortage
- Perceived quality of drug administration (dosage determination)
- Provisions of information and counseling

“The community was really happy about receiving two drugs from extension workers than from Gare leaders as they have a good understanding about these drugs. The community is very interested in it. They advised the community very well. Previously, but some of the Gare leaders were not interested as they want to use the drug for different purposes. They want to distribute the rug to some people and save the rest for themselves. The community is saying “It is only this time we are started to get the drugs. Previously, people were taking either under dose or overdose. But during the recent campaign, we got the drug according to our height”[FGD, 46 years, old male].

**Stakeholders including frontline implementers believed co-delivery had advantages over the single-campaign approach for reasons:**
- Improved access, coverage and equity (effectiveness)
- Higher efficiency -“two birds with one stone”
- Quality of MDA (accurate dosage determination, & DOTs)
- Reduced misuse/abuse of drugs and enhanced reverse logistics
- Enhanced effective management of drugs
- Improved quality and timely documentation and reports.

“It [Co-delivery] has reduced the wastage 100 percent. The approach is very interesting; people acknowledged us very much. We are also very much happy with it. People liked it very much because when the Gare leaders distribute the drug, they won’t give it for those individuals whom they have personal conflict or dispute with. They used it as revenge. Previously, many people have been complaining about this issue. They reported that they never received the drugs in last three rounds. We loved it, even we wish we could implement it in more expanded and better way in next round of our campaign” (HEW, KII).
Results: Implementation metrics indicators

Fig 4. Implementation outcome dimensions (Perceived)

Pictures from field. Co-administration in practice: HEWs provide combined therapy for eligible beneficiaries at the setting community
Promising Practices (PP)

**PP1: Engaging through empowering** stakeholders (especially frontlines) at multiple levels (especially at community & PHCU level) is vital for success, gives power for informed decisions for ongoing adaptions and flexibility of co-delivery strategy.

**Participatory and collaborative planning and capacity development for community level actors such as** health workers, existing health volunteers (especially NTD volunteers, school teachers, students and volunteers) and community level government bodies (Village administrators etc).

**PP2: Direct engagement of community/frontline** health workers in co-administration of mass treatment found to helps to achieve better health campaign effectiveness characteristics: Community acceptance, participation and trust; ensured equity, transparency and fairness in the distribution of drugs; quality of the MDA including management, recording, documentations and report.

**PP3: Co-delivery strategy** should incorporate or supported by well design and locally sensitive social and behavioural change interventions whereby messages and educational materials, tools are developed based on the findings from the formative assessment.

Local tailored messages address silent beliefs and concerns, behaviours and practices regarding the co-delivery and post-MDA survey should integrate KAP assessment.

**PP4: Strong leadership, supportive supervision and timely feedback by the PHCU and District health staff make clear difference in achieving greater treatment coverage-and fidelity of the co-delivery implementation.**
Lessons Learned (LL)

**LL1: Co-delivery require supportive policy direction and environment, committed policymakers, and stakeholders, with strong community level health service delivery strategy**

Ethiopian health systems and communities are well receptive to uptake and adoption of co-delivery strategies.

**LL1**: Pre-campaign and intra-campaign strong community mobilization and educations, high level engagement of community leaders via local structures with its all chain of leaders and command is fundamental to ensure community participation, turn for services and hence, effective treatment coverage.

**LL2: Health campaign integration efforts must start by bringing together key partners and stakeholders while keeping the health system at center for serving as mediating and coordinating body**

Establishing common coordination platform for local, regional, national/international partners; navigating and alignment of their needs and interest; including fiscal plan, modalities of co-delivery and mostly importantly, supply chain coordination collaborative planning is necessary for effective integrations of health campaign.

**LL3: Human resource in community can adequately support the co-delivery of health campaign.**

Engagement of existing community volunteers (such as CDDs, village leaders) and recruiting new volunteers with especial consideration such as educational level (high school complete, college graduates) are very useful to support the health campaign.

However, managing potential conflict of interest and tensions among them, and re-orientation towards supportive role is vital.
The outcome from the present study has the potential to inform policy and practice for strengthening co-delivery strategy in delivering essential NTD services:

• The co-delivery strategy was found to be effective in terms of achieving target treatment coverage and reach with positive health campaign effectiveness characteristics such as community acceptance, feasibility, quality, fairness, trust, equity and safety of the co-administration.

• Regional and national NTD programs could adopt the approach as viable strategy; scale up or expand the approach to new districts through phase-in process.

Further research:
• Cost-effectiveness analysis
• Epidemiological evaluations on the burden of target diseases
• Further testing in other urban and rural areas of Ethiopia
• Effective strategies for collective engagement of community level actors
• Ways to establish common platform for health campaign actors at all levels
Summary of Key Messages

- **Co-delivery approach** requires integrating well-designed and tailored SBCC and education for building broader community understanding and engagement.

- **Creating harmonized co-delivery tools**, formats, and service delivery protocol through engaging key stakeholders.

**Direct engagement and empowerment of frontline health works**, with strong support from community volunteers, leaders of local government administrative structures and PHCU staff is key to achieve greater success in the co-delivery.

**Tailored capacity building through hands on training and microplanning** is essential for empowerment of implementers.

**Co-delivery approach involves multiple stakeholders and with multiple interest** and thus, concerted and coordinated efforts are key to establish common understanding; mobilize and bring them on board each stakeholder for collaborative planning and logistic supplies.

Moreover, clear volunteer engagement strategy, re-orientation of existing volunteers is needed to utilize community resources.

The co-delivery approach which is tested in the present research is effective and acceptable to communities and stakeholders with many positive health campaign effectiveness characteristics. Thus, it is a viable strategy to strengthen NTDs services in Ethiopia and beyond.
THANK YOU