

Breakout Session 2.2 Rethinking MDA campaigns: Leveraging integrated health campaigns for improved effectiveness and impact



Housekeeping

Interpretation is available in French, Portuguese, and English. Devices can be collected at the registration desk.

In case of emergency, locate the nearest exit and remain calm during evacuation.

This session is being audio recorded and will be available on <u>cor-ntd.org</u> and <u>arntd.org</u> after the meeting.

A breakout session report will also be shared post-meeting.



Overview

Context:

- Global health funding landscape = reduced resources available for preventive chemotherapy (PC)-NTD mass drug administration (MDA) campaigns.
- Jeopardizes the success and impact of PC-NTD programmes.

Action:

- Examine different models for delivering PC for schistosomiasis and other NTDs, leveraging existing health campaigns and platforms.
- Translate a potential crisis into an opportunity to improve sustainability and improve health services.

Breakout session

- Three speakers on this topic.
- Three group activities.
- Aim to identify factors that contribute to the success or failure of integration strategies and exploring the metrics and monitoring processes required to track progress on health deliverables.



Objectives and outcomes

- Identify the critical implementation and operational research questions needed to strengthen SCH, STH, and NTD integration and coordination with national and subnational health campaigns.
- Capture actionable outcomes and recommendations, such as policy recommendations, that will support a move from vertical, siloed PC MDA programmes to integrated, effective and sustainable public health campaigns.
- Brainstorm and share ideas and opportunities for schistosomiasis PC implementation through non-NTD health platforms.





Talks on integrating PC-NTDs



Muhammed Afolabi, London School Hygiene and Tropical Medicine A Paradigm shift from parallel, top-down, vertical disease control programmes to integrated, locally relevant, evidence-based and sustainable health campaigns. Example of Schistosomiasis and Malaria.



Florence Wakesho, Ministry of Health, Kenya

Integrating NTD processes into national electronic community health system (eCHIS) and Ministry of Health Integrated Campaign Delivery (ICD) platform.

Wendy Harrison, Unlimit health

Approaching integration and codelivery using a sustainability lens.



Group Activity



What do we know about integrated preventive chemotherapy (PC) codelivery approaches?

Group Activity 2

What are the metrics for evaluating integrated co-delivery progress in health programs?

Group Activity 3

What do we need to strengthen integration and codelivery for sustainable public health interventions?



Breakout session structure

Welcome and overview	Anouk Gouvras, Fiona Fleming and Karen Palacio
A Paradigm shift from parallel, top-down, vertical disease control programmes to integrated, locally relevant, evidence-based and sustainable health campaigns. Example of Schistosomiasis and Malaria.	Dr Muhammed Afolabi, London School Hygiene and Tropical Medicine
Group Activity 1: What do we know about integrated, co-delivery approaches? Discussion & report back	Karen Palacio
Integrating NTD processes into national electronic community health system (eCHIS) and Ministry of Health Integrated Campaign Delivery (ICD) platform.	Florence Wakesho, Ministry of Health, Kenya
Group Activity 2: What are the metrics for evaluating integrated co-delivery progress in health programs? Discussion & report back COFFEE BREAK	Fiona Fleming
Approaching integration and codelivery using a sustainability lens.	Wendy Harrison, Unlimit health
Group Activity 3: What do we need to strengthen integration and codelivery for sustainable public health interventions? Discussion & report back	Anouk Gouvras
Final activity - consolidate questions Next steps and wrap up	Anouk Gouvras

Feasibility, safety and acceptability of integrating MDA for helminth control with Seasonal Malaria Chemoprevention in West African children

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Geographical pattern of malaria-helminth coinfection





Burden of Neglected Tropical Diseases

http://www.who.int/neglected_diseases/EB_resolution_2013/en/ http://www.who.int/neglected_diseases NTD_RoadMap_2012_Fullversion.pdf



- 1.4 billion of world's poorest suffer from NTDs, including 500 million children
- Many NTDs can cause disability



Distribution of co-incidental distribution of *Plasmodium falciparum* and hookworm in SSA (adapted from Brooker et al., 2006)

Study rationale





Overlap in the epidemiology of malaria and helminths identified as a potential area to exploit for the development of an integrated control strategy that may help to achieve the WHO targets of eliminating malaria and helminths by 2030



In many countries with co-endemic parasitic infections, control programmes are often implemented without comprehensive baseline data, mainly because of financial challenges and logistical factors related to undocumented channels of accessing the control



Most impact assessment studies deploy traditional diagnostic methods which tend to underestimate the prevalence of parasitic infections, especially in low transmission settings



Changing landscape of transmission of malaria, STH and schistosomiasis warrants obtaining reliable data on the prevalence of co-infection in endemic areas becomes an increasingly important prerequisite to developing locally appropriate control strategies that could interrupt transmission of these co-infections

Global burden of malaria-helminth co-infections

PLOS NEGLECTED TROPICAL DISEASES

RESEARCH ARTICLE Malaria and helminth co-infections in children living in endemic countries: A systematic review with meta-analysis

Muhammed O. Afolabio¹*, Boni M. Ale², Edgard D. Dabira³, Schadrac C. Agbla⁴, Amaya L. Bustinduy⁵, Jean Louis A. Ndiaye^{6,7}, Brian Greenwood¹

Author, Year	Cases	Total	Prevalence, %	[95% C.I.]	Weight		Prev	alence , %
Coinfection Malaria - S	histo							
Adedoja, 2015	106	209	50.7	[43.7; 57.7]	1.9%			
Adedoja, 2015	86	159	54.1	[46.0; 62.0]	1.9%			<u> </u>
Dejon_Agobe, 2018	66	216	30.6	[24.5; 37.2]	1.9%			
Doumbo, 2014	39	62	62.9	[49.7; 74.8]	1.8%			
Doumbo, 2018	15	688	2.2	[1.2; 3.6]	2.0%	+		
Elfaki, 2015	16	250	6.4	[3.7; 10.2]	1.9%	+		
Elfaki, 2015	10	250	4.0	[1.9; 7.2]	1.9%	+		
Kabatereine, 2011	839	3569	23.5	[22.1; 24.9]	2.0%		+	
Kinugh'hi, 2014	157	1546	10.2	[8.7; 11.8]	2.0%	+		
Matangila, 2014	7	467	1.5	[0.6; 3.1]	2.0%	+		
Mboera, 2011	63	400	15.8	[12.3; 19.7]	1.9%	+	-	
Morenikeji, 2016	84	147	57.1	[48.7; 65.3]	1.9%			<u> </u>
Obi, 1996	57	268	21.3	[16.5; 26.7]	1.9%	(S.		
Salim, 2015	2	992	0.2	[0.0; 0.7]	2.0%	ni.		
Sangwerne, 2010	91	296	30.7	[25.5; 36.3]	1.9%			
Yapi, 2014	16	284	5.6	[3.3; 9.0]	1.9%	+		
Subgroup prevalence Heterogeneity: / ² = 99.1%,	p = 0	9803	19.2	[9.6; 31.1]	31.0%	V		

- Pooled prevalence of *Plasmodium-Schistosoma* co-infections in 9,803 * children was 19.2% (95% CI: 9.6–31.1%)
- Pooled prevalence of *Plasmodium*-STH co-infections in 12,311 children * was 17% (95%CI: 11.4-23.4%)

Heterogeneity: / ² = 98.7%, p =	= 0	22114	17.7	[12.1, 23.2]	100.0%			-1	1	_
Pooled Prevalence		22114	17 7	[12 7. 23 2]	100 0%		-			
Heterogeneity: $I^2 = 98.5\%$, p =	= 0									
Subgroup prevalence		12311	17.0	[11.4; 23.4]	69.0%	<	Ż			
Zeukeng, 2014	7	152	4.6	[1.9; 9.3]	1.9%	-				
Zeukeng, 2014	32	152	21.1	[14.9; 28.4]	1.9%		+			
Tchinda, 2012	69	503	13.7	[10.8; 17.0]	2.0%	-+				
Salim, 2015	1	992	0.1	[0.0; 0.6]	2.0%	41				
Salim, 2015	14	992	1.4	[0.8; 2.4]	2.0%					
Salim, 2015	50	992	5.0	[3.8; 6.6]	2.0%	+				
Ojurongbe, 2011	1	30	3.3	[0.1; 17.2]	1.7%	+	-			
Ojurongbe, 2011	2	30	6.7	[0.8; 22.1]	1.7%					
Ojurongbe, 2011	4	30	13.3	[3.8; 30.7]	1.7%					
Nkuo-Akenji, 2006	33	425	7.8	[5.4; 10.7]	1.9%	+				
Nkuo-Akenji, 2006	1	425	0.2	[0.0; 1.3]	1.9%					
Nkuo-Akenji, 2006	32	425	7.5	[5.2; 10.5]	1.9%	+				
Nkuo-Akenji, 2006	66	425	15.5	[12.2; 19.3]	1.9%	-	-			
Nankabirwa, 2013	2	3	66.7	[9.4; 99.2]	0.9%		-			
Nankabirwa, 2013	6	15	40.0	[16.3; 67.7]	1.6%			+		
Nankabirwa, 2013	11	38	28.9	[15.4: 45.9]	1.8%					
Mboera, 2011	31	400	7.8	[5.3; 10.8]	1.9%	+-				
Mazigoi, 2010	9	400	2.2	[1.0: 4.2]	1.9%	+				
Matangila, 2014	29	616	4.7	[3.2; 6.7]	2.0%	+				
Kinugh'hi, 2014	245	460	53.3	[48.6; 57.9]	2.0%					
Kinugh'hi, 2014	276	460	60.0	[55.4; 64.5]	2.0%					
Elfaki, 2015	31	250	12.4	[8.6: 17.1]	1.9%	-+-	-			
Dejon Agobe, 2018	41	167	24.6	[18.2; 31.8]	1.9%		<u> </u>			
Dejon_Agobe, 2018	11	167	6.6	[3.3; 11.5]	1.9%	+-				
Dejon_Agobe, 2018	30	167	18.0	[12.5; 24.6]	1.9%	-	-			
Dejon_Agobe, 2018	52	739	7.0	[5.3; 9.1]	2.0%	+				
Degarege, 2014	136	702	19.4	[16.5; 22.5]	2.0%		+			
Carmona Fonseca, 2006	71	93	76.3	[66.4; 84.5]	1.9%				_	
Bwanika, 2018	7	33	21.2	[9.0; 38.9]	1.8%	_		_		
Bwanika, 2018	7	33	21.2	[9.0: 38.9]	1.8%	<u> </u>	i			
Burdam, 2016	19	269	7.1	[43:10.8]	1.9%	+-				
Alemu 2012	20	108	18.5	[11.7:27.1]	1.9%	-	<u> </u>			
Alavi 2015	45	105	42.9	[33 2: 52 9]	1.9%					
Adio 2004	64	243	26.3	[20.9: 32.3]	1.9%					
Adedoja, 2015	61	209	29.2	[23.1:35.9]	1.9%		-	-		
Adedoia, 2015	208	1017	20.5	[18.0: 23.1]	2.0%		+			
	20		00.0	100.1.79.01	1.070					

Residual heterogeneity: $I^2 = 98.7\%$, p = 0

Test for subgroup differences: $\gamma_{4}^{2} = 0.13$, df = 1 (p = 0.7182)

Prevalence of malaria-helminth co-infection in Senegal



Frontiers | Frontiers in Public Health

TYPE Original Research PUBLISHED 02 March 2023 DOI 10.3389/fpubh.2023.1087044

A low prevalence of malaria-helminth co-infection in two epidemiologically diverse settings in Senegal.

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SPECIALTY SECTION

This article was submitted to Infectious Diseases: Epidemiology and Prevention, a section of the journal Frontiers in Public Health

RECEIVED 01 November 2022 ACCEPTED 14 February 2023 PUBLISHED 02 March 2023 Prevalence of malaria-helminth co-infections among children living in a setting of high coverage of standard interventions for malaria and helminths: Two population-based studies in Senegal

Muhammed O. Afolabi^{1*}, Doudou Sow², Ibrahima Mbaye³, Marie Pierre Diouf³, Mor Absa Loum⁴, Elhadji Babacar Fall⁴, Amadou Seck³, Isaac A. Manga⁴, Cheikh Cissé³, Baba Camara⁵, Awa Diouf³, Ndéye Aida Gaye³, Aminata Colle Lo⁴, Brian Greenwood¹ and Jean Louis A. Ndiaye³ The low prevalence may play a major role in sub-clinical infections acting as reservoirs that make interruption of cycles of infection transmission challenging.

Prevalence of mono-infection with schistosomiasis and intestinal protozoans was high among the pre-school and school-aged children

The incidental finding of a silent high burden of intestinal protozoans suggests that preventive chemotherapy for helminths should also take into consideration intestinal protozoans

Overall findings underscore the importance of country-specific evidence to guide the development of cross-cutting approaches to address the critical gaps in implementation of strategies that may help achieve elimination of malaria and NTD.

Methods for RCT







Eligible children aged 1-14 years randomized 1:1:1 to 3 study arms

1st arm = Vit A + Zn on Day 0, then D1-3 SMC ; 2nd arm = PZQ + Vit A on Day 0, then Day 1-3 SMC; 3rd arm= ALB & PZQ on Day 0, then Day 1-3 SMC

Safety assessment performed by collecting AEs from all children for 6 subsequent days following administration of the study drugs

Pre-and post-intervention analysis of blood samples for determination of Hb concentration, malaria microscopy, and PCR assays

Pre-and post-intervention analysis of stool samples using Kato-Katz, MIF and PCR methods & urine samples using filtration, PCR, POC-CCA

F	Results				Control group: (SMC + Vit A+ Zn) n=214 (%)	Treatment group 1: (SMC+ PZQ + Vit A) (n=207 (%)	Treatment group 2 (SMC + PZQ + ALB) n=206 (%)
Enrolment	Assessed for e	eligibility (n = 644) Exclu • P • C	uded (n = 17) Not meeting inclusion criteria (n = 10) Refused to participate (n = 5) Other reasons (n = 2)	Age group 1-4 years 5-14 years Gender Male Female	72 (33.6) 142 (66.4) 106 (49.5) 108 (50.5)	69 (33.3) 138 (66.7) 101 (48.8) 106 (51.2)	65 (31.5) 141 (68.5) 103 (50.0) 103 (50.0)
Allocation	Allocated to control group (n = 214) Received allocated intervention (n=208) Did not receive allocated Allocated (Treatme 207)	ized (n = 627) I to intervention ent Group 1, n = allocated	Allocated to intervention (Treatment group 2, n = 206) Received allocated	WFA < -2.5 SD >-2.5 SD HFA < -2.5 SD >-2.5 SD >-2.5 SD	11 (14.3) 66 (85.7) 39 (33.0) 79 (67.0)	7 (9.5) 67 (90.5) 41 (33.3) 82 (66.7)	8 (9.3) 78 (90.7) 40 (31.8) 86 (68.2)
Follow up	Intervention (n=6) intervention (n=6) (reasons: travelled, unwell) Did not reintervention intervention intervention Lost to follow up (n Lost to follow up (n =10): did not attend post-intervention survey, Discontinued (n = 0) Lost to follow up (n	on (n=198) ceive allocated on (n=9) bllow up (n =12): tend post- on survey ued intervention	intervention (n=195) Did not receive allocated intervention (n=11) Lost to follow up (n =12): did not attend post- intervention survey Discontinued intervention	Hb concentration <7g/dl 7-9.9 g/dl 10-10.9g/dl ≥11g/dl (Normal)	199 (100) 0 (0.0) 23 (11.6) 32 (16.1) 144 (72.4)	191 (100) 0 (0.0) 21 (10.9) 33 (17.1) 139 (72.0)	192 (100) 0 (0.0) 15 (7.8) 29 (15.1) 148 (77.1)
sis	Analysed (n =214) Excluded from analysis	l (n=207)	(n=0) Analysed (n=206) Evoluted from analysis	Plasmodium spp Number examined Infected n (%)	208 18 (8.6)	203 16 (7.9)	204 14 (6.9)
Key	(n=0) (n =0) (r: Group 1: (SMC + Vit A+ Zn); Group 2: (SM	1C+ PZQ + Vit A); Gr	(n =0) oup 3: (SMC + PZQ + ALB)	<i>S.mansoni</i> Number examined Infected n (%)	188 1 (0.5)	173 2 (1.2)	178 2 (1.1)

Fig. 2 CONSORT diagram showing the flow of the study participants, Saraya, 2022

Post-drug administration safety assessments



	Control group	Treatment group 1	Treatment group 2	P-value***	P-value*** Post-drug administration AEs								
Number of participants, n (%)	214 (100)	207 (100)	206 (100)	-	30 —								
Proportion of participants who experienced at lea	st one AEs, n (%) [1]												
Overall	19 (8.9)	30 (14.5)	36 (17.5)	0.03				_					
Fever	7 (3.3)	7(3.4)	6 (2.9)	0.99	25 —								
Abdominal pain	10 (4.7)	8 (3.9)	9 (4.4)	0.94									
Vomiting	9 (4.2)	22 (10.6)	26 (12.6)	0.005									
Skin rash	2 (0.9)	2 (1.0)	3 (1.5)	0.81	20 —								
Excessive crying	β (1.4)	1 (0.5)	1 (0.5)	0.63									
Refusal of food/poor appetite	5 (2.3)	7 (3.4)	4 (1.9)	0.67									
Body weakness	8 (3.7)	10 (4.8)	6 (2.9)	0.59	15 —								
Diarrhoea	4 (1.9)	2 (1.0)	4 (1.9)	0.73									
Total number of reported AEs ^a	53	63	63	13_11									
Incidence i.e. number of reported AEs per 100 par	ticipants (95% CI) ^a				10 —								
Overall	25 (19-32)	30 (23–39)	31 (24–39)	0.81*								_	
Fever	3.3 (1.3-6.7)	3.4 (1.4–7.0)	3.9 (1.7–7.7)	0.96*		-							
Abdominal pain	5.1 (2.6-9.2)	4.8 (2.3-8.9)	4.4 (2.0-8.3)	0.94*	5 -		_					-	
Vomiting	4.2 (1.9-8.0)	11 (7–16)	13 (8-18)	0.01*					_	-			
Skin rash	1.4 (0.3-4.1)	1.0 (0.1–3.5)	1.9 (0.5–5.0)	0.75*									
Excessive crying	1.4 (0.3-4.1)	0.5 (0.01-2.7)	0.5 (0.01-2.7)	0.51*	0								
Refusal of food/poor appetite	3.3 (1.3-6.7)	3.9 (1.7–7.6)	1.9 (0.5-5.0)	0.54*		Fever	Abdominal	Vomiting	Skin rash	Excessive	Refusal of	Body	Diarrhoe
Body weakness	4.2 (1.9-8.0)	5.3 (2.7–9.5)	2.9 (1.1-6.3)	0.51*			pain			crying	tood/poor	weakness	
Diarrhoea	1.9 (0.5-4.8)	1.0 (0.1–3.5)	2.4 (0.8–5.7)	0.57*							appente		
Number of SAEs reported	0	0	0	-				Co	ontrol 📕 Gro	up 1 🔳 Gro	up 2		
Number of participants with SAEs, n (%) [2]	0 (0.0)	0 (0.0)	0 (0.0)										
Severity of all AEs**													
Grade 1 = mild	18 (94.7)	28 (93.3)	35 (97.2)	0.38									
Grade 2=moderate	0 (0.0)	2 (6.7)	1 (2.8)										
Grade 3=severe	1 (5.3)	0 (0.0)	0 (0.0)										
Grade 4=life threatening	0 (0.0)	0 (0.0)	0 (0.0)										

^[1] Participants who experienced one or more AEs or SAEs are counted only once

Summary of findings



Post-intervention

RESEARCH

Feasibility and safety of integrating mass drug administration for helminth control with seasonal malaria chemoprevention among Senegalese children: a randomized controlled, observer-blind trial

Muhammed O. Afolabi^{1*}, Doudou Sow², Schadrac C. Agbla^{1,3}, El Hadji Babacar Fall⁴, Fatimata Bintou Sall⁴, Amadou Seck⁴, Isaac Akhénaton Manga⁵, Ibrahima Marietou Mbaye⁴, Mor Absa Loum⁴, Baba Camara⁶, Diatou Niang⁶, Babacar Gueye⁷, Doudou Sene⁷, Ndéye M'backé Kane⁷, Boubacar Diop⁷, Awa Diouf⁴, Ndéye Aida Gaye⁴, Marie Pierre Diouf⁴, Aminata Colle Lo⁵, Brian Greenwood¹ and Jean Louis A. Ndiaye⁴

2000 P.falciparum Intensity Geometric Mean Pre-intervention difference: P=0.61 Post-intervention difference: P=0.03 500 1000 500 0 Group 1 Group 2 Group 3 **Trial Group**

> Fig. 4 Pre-and post-intervention P. falciparum Intensity Geometric Mean and 95% confidence intervals across the three study groups. Key: Group 1 = control group, Group 2 = Treatment group 1, Group 3 = Treatment group 2

Pre-intervention

- Integration of MDA for helminths with SMC drugs was safe, well tolerated, and feasible among Senegalese children *
- Malaria parasitaemia was much higher in the control group than in the intervention arms *
- Children who received PZQ and SMC drugs had a lower risk of developing severe anaemia than those who received SMC * drugs alone
- Findings support a paradigm shift from parallel, top-down, vertical disease control programmes to integrated, locally relevant, evidence-based and sustainable health campaigns.

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Provider and User Acceptability of Integrated SMC-MDA

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

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Provider and User Acceptability of Integrated Treatment for the Control of Malaria and Helminths in Saraya, South-Eastern Senegal

Muhammed O. Afolabi,^{1*} Aminata Diaw,² El Hadji Babacar Fall,³ Fatimata Bintou Sall,³ Adams Diédhiou,² Amadou Seck,³ Baba Camara,⁴ Diatou Niang,⁴ Isaac A. Manga,² Ibrahima Mbaye,⁴ Ndèye Mareme Sougou,² Doudou Sow,⁵ Brian Greenwood,¹ and Jean Louis A. Ndiaye³

Target group	Number interviewed	Gender	Age range (years)	Site		Data collection technique	
				Saraya	4		
				Khondokhu	4	- Structured	
Derents/corogiuers	26	Male=15	22-50	Mandakholi	6	interviews	
Farentsy caregivers	20	Female=11	22-30	Bembou	4	participant	
				Badioula	4	observations	
				Dioulafoundou	4	_	
Study participants aged ≥ 10 years				Saraya			
	10	Male=6	10.14	Bembou		One-to-one	
	10	Female=4	10-14	Badioula		interviews	
				Dioulafoundou			
Health care	4	Male=3	28.40	Saraya Health		In-depth	
providers	4	Female=1	28-40	center		interviews	
Trial staff	15	Male=13	19 65	Saraya	8	Focus group	
	15	Female=2	10-05	Bembou 7		[–] discussions	
Program Managers	2	Male=1 Female=1	50-55	SMC and NTD Programs, Ministry of Health and Social Action		In-depth interviews	

Perceptions about the integrated model

Most parents were happy for their children to participate in the study. They thought it was a good initiative as the diseases targeted by the study were perceived as dangerous diseases, whose occurrence remained very high in their locality, especially in the rainy period, affecting all layers of the population but especially children.

It's a feeling of satisfaction and a bit of worry because I'm like, 'Is this going to continue?: they can get us used to this program this year, and later let us down, that's my concern... (PC7, Bembou, parent/caregiver)

Barriers to acceptability of the combined approach Refusal of the medications due to the size and taste -The drug like praziquantel is a bit big. Now I don't know what to do, but I think we will have to try to see another alternative. And, if it's possible to do it with a little sugar, so swallowing it will be much easier. (MA6, Badioula, trial staff)

Gender sensitivity: For the boys it must be men and for the women too because they are ashamed to see a woman take their stool like that, it bothers them" (PC22, Khondokhu, parent).

Enablers of acceptability of the integrated model

Perceived effectiveness of SMC: Because we understood the usefulness of SMC drugs in successfully rolling back malaria. We understood, we saw the results. The same thing will happen for this new approach" (PC13, Dioulafoundou, parent/caregiver)

"I accepted because I saw the benefits of the SMC malaria campaign. I agreed because I believe the benefits of this combined treatment will be successful like that of SMC and I don't want my kids to get sick again because of malaria and worms". (PC16, Badioula, parent/caregiver)

Trust in government health programmes: If it was another project different from the government, I'd be afraid and worried, but because government is supporting this combined project, I am rest assured...(PC17, Saraya, parent/caregiver)

Recommendations

If they really can change the taste and the smell, that would be good; because the taste and smell of some of the drugs are problems to the children. That's what makes children vomit. (PC21, Dioulafoundou, parent)

"Use all possible channels, currently social networks are very popular with this age group, we have TikTok, we have Facebook, we have all these current tools.. (PM2, Program Manager).

Culturally appropriate strategies need to be put in place to cater for the inclusion of children aged 10-14 years in this approach(MA2, Saraya, Trial staff)

Current steps



DOI: 10.1111/tmi.14062 Group 1: 60 children/school in 10 schools: A minimum of 1200 eligible male and female Vitamin A+ Zinc on Day 0, followed by SMC RESEARCH ARTICLE school aged children 5-10 years in Pru East course on Day 1, 2 and 3 = 600 children district will be enrolled Group 2: 60 children/school in 10 schools: Administration of guestionnaire after parental Evaluating the effectiveness and cost-effectiveness of integrating ALB+ PZQ on Day 0, followed by SMC course consent, and assent where required on Days 1, 2 and 3 = 600 children mass drug administration for helminth control with seasonal Collection of blood, stool and urine samples from the children malaria chemoprevention in Ghanaian children: Protocol for a Precluster randomised controlled trial Intervention intervention Muhammed O. Afolabi¹ Dennis Adu-Gyasi^{2,3} Lucy Paintain¹ Theresa Tawiah² | Mohammed Sanni Ali¹ | Brian Greenwood¹ Cost-Kwaku Poku Asante² Posteffectiveness intervention study Safety follow-up of children in both arms in Analysis of the economic and financial costs of the intervention study an integrated delivery model for SMC and MDA with anthelminthic drugs among children Collection of blood, stool and urine samples collected from the children, one month after Cost-effectiveness of an integrated delivery the last SMC cycle model for SMC and MDA with anthelminthic drugs among children compared to SMC alone (incremental cost per incremental DALY averted)



Funder and partners





Jean Louis Ndiaye Doudou Sow Ibrahima Mbaye Fatmata B. Sall Elhadji B. Fall Amadou Seck



Kwaku Poku Asante Dennis Adu-Gyasi Mathilda Thivura Theresa Tawiah **Richmond Kessie**







Brian Greenwood Daniel Chandramohan Lucy Paintain Sanni Ali Karen Slater



Future Leaders Fellowships



Aminata Colle Lo Marie Pierre Diouf Isaac A. Manga Ndéye Maréme Sougou Aminata Diaw









Ministère de la Santé et de l'Action sociale

Babacar Gueye Ndéye M Kane Baba Camara

Doudou Sene Boubacar Diop **Diatou** Niang

Thank you for listening







Group Activity 1 – Moderator Karen Palacio





Group Activity Format

- Participants will split into 5 groups (depending on numbers)
- Each group will have:
 - A facilitator and someone to capture key messages
 - A flipchart and pens to record key points
- Each group will be asked to identify 1 or 2 key messages/research questions to share in the report back to the main breakout session.
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Group Activity 1: What do we know about integrated preventive chemotherapy (PC) codelivery approaches?

- 1. What examples/case studies do you have from your context of integrated PC delivery?
- 2. What were the drivers and expected benefits behind these integrated delivery approaches?
- 3. Can you share some of the barriers to implementation, to scale up, to sustainability from these examples?





MINISTRY OF HEALTH

Integrating NTD processes into national electronic community health system (eCHIS) and Ministry of Health Integrated Campaign Delivery (ICD) platform

Florence Wakesho/Dickson Kioko Soil Transmitted Helminthiasis and Schistosomiasis Program Manage/ M and E Manager eCHIS (*electronic Community Health Information System*) is a government-owned digital platform built on the Community Health Toolkit to improve the quality and accessibility of healthcare services at the community level. NTD program, in collaboration with CHAI, adopted eCHIS and developed the Campaign Module

NTD Workflows Designed and Configured on eCHIS

- Campaign Module (STH, SCH, Trachoma)
 - Service Delivery
 - Medication Decline & Follow-up
 - Commodity Management
 - Adverse Events Report & Follow-up
 - Performance Tracking
- Standalone Workflows
 - MMDF for Lymphatic Filariasis

2025 Hind-Sight Iteration Plan

- Design and Configuration of Jiggers Workflow
- **Geographical Scale-up** of the campaign module to regions implementing MDAs across the different disease areas.
- Technological Iterations on eCHIS to incorporate other key use cases (microplanning, digital payments) relevant to the overall campaign processes.

High-Level Overview of LF MMDP Workflow on eCHIS



1.1 Synopsis of Campaign Digitization Journey



High-Level Overview of Digitized Campaign Workflow on eCHIS



4

NTD Campaign Status Quo

Before digitization

Inefficiencies in campaign planning due to the absence of verifiable and accurate population data to quantify resources and identify the target population. Similarly, the Manual registration of Household Members and tallying processes was a time-consuming and cumbersome activity.

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With digitization

The eCHIS Household-level registry of households provides accurate population statistics that effectively serve **as a reliable** population data source.

- Approximately **90% of households** have been enumerated within the implementation units, i.e. in Chekalini & Bunyala Central Wards, forming a comprehensive registry.
- Due to the registry's ability to be updated frequently during routine activities, it serves as the most accurate single source of accurate and reliable denominator for planning and executing public health campaigns.
- Geo-tagging functionalities on the campaign module make it easy to track CHP movement and offer near-real-time satellite supervision.
- The ease-of-use and navigation through eCHIS registry makes it easy to offer treatment to an expansive target population within a short period of time.

Executive eCHIS Pilot Summary

Key Hypothesis:

Digitizing MDA campaign data tracking (such as treatment coverage and commodity management) through eCHIS will be more effective, accurate, and efficient compared to traditional **manual registers**.

Pilot Objectives

Improve Treatment Coverage Tracking

- *Individualized Tracking*: eCHIS enables **personalized tracking** of treatments for each individual, unlike paper-based registers which may lose specificity or overlook certain people. This ensures **no individual is left behind** in the treatment process.
- *Better Data Quality & Accuracy:* **Manual registers** are prone to human error (e.g., illegible handwriting or missed entries). **eCHIS** reduces these errors, providing more **accurate and reliable data** on who has been treated and who requires follow-up.

Enhance Campaign Data Accessibility & Real-Time Monitoring

- *Instant Access to Data:* eCHIS provides **real-time access** to treatment coverage data, which is crucial for **timely decision-making** by Ministry of Health officials.
- Integration with National Health Systems (IDB): eCHIS can integrate seamlessly with existing national or regional health management systems, such as the Integrated Disease Database (IDB), to allow for better coordination and comprehensive monitoring.

Improve Decision-Making & Resource Allocation

- Data-Driven Decision-Making: With digital tools, MoH officials can make informed, data-backed decisions to allocate resources to areas with insufficient treatment coverage quickly or where follow-up is needed.
- *Resource Optimization:* eCHIS enables **real-time tracking**, allowing resources like medicines, personnel, and supplies to be allocated more efficiently, minimizing waste and ensuring **maximum campaign impact**

Facilitate Monitoring and Evaluation (M&E):

- *Monitoring effectiveness*: The pilot will test how effectively eCHIS can track key performance indicators such as treatment coverage rates, follow-up rates, and other health outcomes, offering a clearer picture of how well the public health campaign is performing.
- *Reporting and feedback mechanisms*: eCHIS allows for the creation of detailed reports, which can be used to provide feedback to stakeholders, adjust strategies during the campaign, and conduct post-campaign evaluations to measure long-term impact.

Identify Barriers and Opportunities for Scaling:

4

- *Technical and logistical challenges*: By implementing eCHIS in this pilot, it will be possible to identify potential barriers to the digitization of public health campaigns, such as connectivity issues, user training needs, or system limitations.
- *Scalability*: The findings from this pilot can help determine how scalable the eCHIS solution is across different regions or countries, and whether it can be adapted to other types of health campaigns beyond STH and SCH.

Methodology

A combination of qualitative and observational approaches was employed including structured interviews and field observations to capture diverse experiences Purposive sampling focused on specific campaign focal persons across the community units, sub-counties, counties, and national officials

Focus Group Discussions, Key Informant Interviews(KIIs) and structured observations were the primary data collection methods

Key Stats

Successfully carried out surveys on a total 110 sample size that included CHAs & CHPs with 62 complete surveys:

96% of respondents prefer using eCHIS to paper

89% of respondent state experience of using eCHIS is good(45%) and very good(44%).

88% of respondent state Ease of using eCHIS is Easy (44%) and Very Easy(44%).

79% of respondent state they received adequate training on use of eCHIS.

Mean System Usability Score of **69.8** which is above average with room for improvement

Treatment Coverage



Treated Pop
Not Treated Pop

Ward-Specific Coverage:

1.Bunyala Central (SCH):

- 1. Targeted: 35,256 individuals
- 2. Treated: 22,228 individuals
- 3. Coverage: 65.91%

2.Bunyala Central (STH):

- 1. Targeted: 38,586 individuals
- 2. Treated: 26,094 individuals
- 3. Coverage: 67.6%

Low Coverage Factors: Less Tech-savvy CHPs and age demographic differences.

3.Chekalini (STH):

- 1. Targeted: 20,276 individuals
- 2. Treated: 15,273 individuals
- 3. Coverage: 75.3%

Key Insights:

•Both campaigns demonstrated significant **reach**, but **continued efforts** are needed to increase coverage, particularly in areas with lower **CHP engagement** or logistical challenges.

•The **digitization** of the public health campaign via **eCHIS** enabled more **precise tracking**, highlighting areas where targeted interventions were needed.

Spatial Analysis : Daily Movement Tracker - Chekalini



Key Insights

- The campaign effectively covered a wide geographic area, as evidenced by the spread of dots across different regions. However, there are pockets that were not covered and this could be attributed to medical declines or absteesign during campaign
- The gradual increase in household coverage suggests improved efficiency or expanded efforts after the initial day
- Poor GPS Accuracy attributed to low grade Neon Ray phone model with minimal GPS accuracy features and there is need to upgrade to the Ultra model.

Spatial Analysis : Daily Movement Tracker - Bunyala Central



Key Insights

- The campaign effectively covered a wide geographic area, as evidenced by the spread of dots across different regions. However, there are pockets that were not covered and this could be attributed to medical declines or absteesign during campaign
- The gradual increase in household coverage suggests improved efficiency or expanded efforts after the initial day and also helped in identifying areas for mop up for day 6 and 7
- Poor GPS Accuracy attributed to low grade Neon Ray phone model with minimal GPS accuracy features and there is need to upgrade to the Ultra model.

Treatment Coverage

Key Insights

- Standard Deviation: The standard deviation of 2.28% indicates the amount of variability or dispersion in the treatment coverage percentages across the three age groups. This small standard deviation suggests that while there is some variation in treatment coverage, the percentages are relatively close to each other, meaning the treatment coverage is somewhat consistent across age groups, but not perfectly so.
- Significance of Difference: The chi-square value of 7.8, with 2 degrees of freedom, exceeds the critical value of 5.991 at the 0.05 significance level. This outcome leads us to reject the null hypothesis (There is no significant difference in the distribution of treatment coverage across the age groups). Rejecting it means we have statistical evidence that there is a significant difference in how treatment coverage is distributed among the age groups
- The significant chi-square value (7.8) indicates there are notable differences in how treatment coverage is distributed among the age groups (1 to 4, 5 to 14, and 15 and above). This suggests that treatment strategies or effectiveness vary by age, with policy implications to adjust interventions for more equitable treatment across all age groups.

STH Treatment Coverage By Age Group



Treatment Coverage

Key Insights

- The age group significantly influences treatment coverage, with the 5 to 14 years group experiencing more **consistent** treatment than the 15+ years group. The Chi-Square test confirms that the difference in treatment distribution between these two groups is statistically significant (Chi-Square = 80.72, df = 1, critical value = 3.841).
- The higher standard deviation for the 15+ years group indicates more significant variability in adult treatment access.

These findings underscore the need for targeted community approaches to improve treatment **consistency** and **accessibility**, particularly for the adult population. Addressing the variability in treatment rates and enhancing campaign processes will help ensure that individuals across all age groups receive timely and equitable treatment.

63.4% 36.6% 15 + Yrs 67.6% 32.4% 5 to 14 Yrs 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% Treated Not Treated

SCH Treatment Coverage By Age Group



Mebendazole Utilization

Meb Utilized - #Meb Returned

Key Insights

Standard Deviation: The standard deviation of 0.574 indicates a moderate level of variability in the ratio of Meb utilized to Meb returned across the CUs. Some CUs (like Musembe) have a higher ratio, suggesting that fewer Meb are returned relative to those utilized, while others have a lower ratio (such as Buchangu A), suggesting an imbalanced return rate.

A Chi-Square value of 0 suggests that there is no difference between the observed and expected frequencies.

• This means there is no significant difference in how Meb Utilized and Meb Returned are distributed across the community units, implying that the utilization and return rates are exactly as expected in this case



Albedazole Commodity Utilization

Alb Utilized —#Alb Returned

Key Insights

The standard deviation of 0.567 in the ratios of Alb Utilized to Alb Returned across the various **Community Units (CUs)** reveals moderate variability in how Albendazole (Alb) is used and returned.

• This suggests that some CUs have a disproportionate amount of medication being returned relative to what is utilized, while others may have underutilization or wastage of Albendazole.

The Chi-Square value of 38.6 significantly exceeds the critical value of 3.841 (for 1 degree of freedom at a 0.05 significance level).

• This result indicates that there is a statistically significant difference between the number of **Albendazole** tablets utilized and the number of Albendazole tablets returned across the various CUs.

Key Insights

The standard deviation of 0.887 suggests high variability in the Pzq utilization to return ratios across the CUs.

• The moderate to high variability points to inefficiencies in the return process and inconsistencies in medication usage, which could be attributed to either overuse in certain areas or underutilization in others.

The calculated Chi-Square value of **58.94** substantially exceeds the critical value of **3.841** (for 1 degree of freedom at the 0.05 significance level), indicating a **statistically significant** difference between the number of **Pzq utilized** and **Pzq returned**.

• The result suggests that the **utilization and return rates of Pzq** across the **CUs** are **significantly influenced by factors other than random chance**. The substantial difference between the observed and expected return rates indicates that systematic patterns affect how Pzq is used and returned in each community. Praziquantel Commodity Utilization



Pzq Utilized — Pzq Returned

Treatment Uptake & Barriers

Community Awareness and Education

- Lack of enough awareness about treatment **importance** and **safety**.
- Misinformation and misunderstandings of campaign activity led to lower uptake.
- --- Action Needed: Targeted education and awareness campaigns to improve community understanding.

Social and Cultural Factors:

- Resistance to treatment in certain communities due to cultural beliefs and religious belief
- 2. Particularly prevalent in areas with limited MDA campaign experience.
- ---- Action Needed: Ongoing community engagement to build trust and ensure treatment acceptance.

Next Steps for Improving Uptake Strengthen community education programs to correct misinformation.

- Increase trust-building efforts to address cultural resistance and improve treatment uptake.
- Engage CHPs more in areas with low uptake to improve relationships with the community.

Key Successes

Impact of Digitization on Campaign Operations

Enhanced Efficiency: The use of eCHIS streamlined data collection and reporting processes, significantly reducing the time spent on manual paperwork. Health workers reported faster data entry and retrieval, allowing for quicker decision-making.

Real-Time Monitoring: The ability to monitor campaign progress in real-time facilitated timely interventions and adjustments, improving overall operational effectiveness.

Improved Data Accuracy: Digitization minimized human errors associated with paper-based systems, leading to more reliable data and insights for planning and resource allocation.

Changes in Coverage:

•Increased Coverage Rates: Coverage estimates for target populations rose significantly post-digitization, suggesting a positive impact of eCHIS on reaching more individuals effectively.

•Targeted Approaches: The tool enabled more targeted outreach strategies based on real-time data, directly contributing to increased engagement in hard-to-reach areas.

Attributing Changes to Digitization

•Yes, Due to Digitization: The correlation between the implementation of eCHIS and the observed improvements in campaign operations and coverage supports the assertion that digitization played a significant role. The real-time data access and streamlined processes uniquely facilitated improvements that would not have been possible with paper-based systems.

Alternative Explanations:

•Increased Funding and Resources: Additional resources allocated to the campaigns, such as increased manpower or financial support, could also explain some of the observed changes.

•Community Engagement: Enhanced community engagement strategies contributed to improved outreach and coverage.

Key Opportunities Realized During the Pilot

Real-Time Monitoring of Data

•lssue:

The **MoH Superset tool**, intended for real-time data tracking, faced **technical failures**, preventing daily, longitudinal monitoring of treatment coverage.

•Impact:

- Manual Workaround: Raw data had to be manually extracted from eCHIS to create provisional dashboards.
- Consequences:
 - The time-consuming process led to delayed data visibility.
 - Limited ability to make rapid, data-driven adjustments to improve campaign effectiveness.
 - Hindered the identification of lagging coverage areas and impacted resource allocation.

•Key Takeaway:

The failure of the main MoH Superset significantly affected **real-time decision-making** and **campaign responsiveness**.



Delay in Provision of Internet Bundles for Data Syncing:

•Issue: Delayed internet bundles meant CHPs were unable to sync data on eCHIS, particularly in remote or rural areas with existing connectivity challenges.

Impact:

- **Delayed Syncing:** Without real-time updates, the monitoring of treatment coverage became **inaccurate** and **untimely**.
- Consequences:
 - Slowed visibility of campaign progress.
 - Reduced ability to address areas with **low treatment coverage** and make **immediate adjustments** to strategy.
 - Inefficient resource allocation and missed follow-up opportunities in critical areas.

•Key Takeaway:

Timely and reliable internet access is crucial for ensuring **real-time data synchronization**.

eCHIS Bug in Tracking Medication Declines

 Issue: A bug in eCHIS caused discrepancies in tracking individuals who initially declined treatment but later agreed after further engagement.
 Impact:

- **Tracking Errors:** People who had declined treatment were erroneously recorded as "non-compliant" on subsequent visits, despite having accepted treatment later.
- Consequences:
 - Skewed individual-level data.
 - Affected the **overall treatment coverage statistics**, leading to inaccurate reporting of coverage.

•Key Takeaway:

The technical glitch in eCHIS almost resulted in data discrepancies, undermining the accuracy of treatment coverage metrics.

Way Forward

Intensive System Iteration & Troubleshooting for Superset:

Goal: Address issues with real-time monitoring and optimize Superset for future use.

Key Actions:

- Bug Fixes & System Updates --- Ensure Superset functions without interruptions, allowing for accurate data processing and visualization.
- User Training --- Train technical and field staff to ensure they are proficient in using Superset and can resolve minor issues independently.
- Stress Testing ---- Test the Superset under simulated field conditions to ensure it can handle large volumes of data in real time.

Expected Outcomes:

•Reliable Real-Time Monitoring of treatment coverage.

Improved decision-making with up-to-date data.
Better visibility into coverage gaps, enabling prompt adjustments to campaign strategies.



Ensure Timely Provision of Internet Bundles:

Goal: Resolve data syncing delays by ensuring timely internet access.

Key Actions:

- Collaborate with Partners & Service Providers --- Work with implementing partners and internet providers to ensure the availability of adequate internet bundles.
- Focus on Remote Areas: --- Plan and ensure that internet access remains consistent, particularly in remote and rural areas where connectivity challenges are more common.

Expected Outcomes:

•Seamless Data Syncing for accurate and real-time monitoring of campaign progress.

•Improved campaign visibility and faster response times in addressing issues during field activities.

Conduct a Needs Assessment: Evaluate the specific needs and challenges of the target population and stakeholders. Understand the data gaps and what digitization can effectively address.

Engage Stakeholders Early: The involvement of MoH, system end-users, community leaders and relevant key stakeholders from the beginning is crucial. This ensures their buy-in and allows you to gather insights on local contexts and challenges, which are essential for successful implementation.

Invest in Training and Capacity Building: Providing comprehensive training for users on the eCHIS platform is important. However, it's equally crucial to offer ongoing support and refresher training to maintain user competence over time.

Ensure Robust Technical Support: It's essential to establish a reliable technical support system. This ensures that any challenges, including troubleshooting and software updates, are addressed promptly, minimizing disruptions to the system.

Prioritize Data Quality and Integrity: Implement protocols for regular data validation and monitoring to ensure accuracy and completeness. Encourage a culture of data use for decision-making among health workers.

Plan for Sustainability: Consider the long-term technical and financial resources required to sustain digitization. Seek partnerships with government and other stakeholders to secure ongoing funding and support.

Learn from Pilot Implementations: Conduct pilot tests in diverse settings to gather insights and refine the tool before full-scale implementation. Analyze the successes and challenges to inform future campaigns.

Facilitate Feedback Mechanisms: Establish channels for user feedback on the eCHIS tool, allowing for continuous improvement based on practical experiences and challenges faced by health workers.

Acknowledgement













Group Activity 2 – Moderator Fiona Fleming





Group Activity Format

- Participants will split into 5 groups (depending on numbers)
- Each group will have:
 - A facilitator and someone to capture key messages
 - A flipchart and pens to record key points
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Group Activity 2: What are the metrics for evaluating integrated co-delivery progress in health programs?

- What metrics need to be captured during the implementation stage, through coverage evaluation and through impact assessments (data types: treatment coverage, geographical coverage, acceptability, compliance, epidemiology, cost, quality-control etc)?
- 2. What metrics need to be shared with relevant stakeholders e.g. to meet the WHO medicine donation criteria and supporting organisations, and what needs to be standardized?
- 3. What data can be fed into models to assess effectiveness, cost effectiveness and impact of different co-delivery approaches vs standard vertical approaches?





Approaching integration and co-delivery using a sustainability lens – opportunity to consider the subject of t

- Need for sustainability very clear
- Significant work been carried out to define and support sustainability of NTD services
 - WHO NTD Sustainability Framework
 - <u>NNN Statement on Sustainability.pdf</u>



Need for sustainable distribution of resources over time

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Requires identification of different sources of resources at different time points



Utilising different sources/ integration increasing complexities



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Vertical programmes achieved significant impact since 2010 integration will require more context specificity



Global impacts





Global Economic and geopolitical situations are currently

unfavourable



Global economy stagnating and very poor growth predicted in developed economies

DAC countries - Components of net official development assistance (ODA), 2000-23

USD billions (constant 2022 prices)

200

100



Humanitarian aid

Bilateral dev. projects and TC
 Multilateral ODA
 In-donor refugee costs
 Net debt relief grants

ODA not increasing in line with challenges and increasing amount on refugees in donor counters



Rise of right wing popularist governments in Europe & US



World Economic Outlook (October 2024) - Real GDP growth



Respiratory diseases

Increase in burden of NTD due to climate change

- LMICs most vulnerable to health-related consequences of climate change
- Nearly 20% of the health outcomes identified by studies that would be impacted by climate were NTD
- all health outcomes studied were projected to increase in burden and/or experience a geographic shift over the next century due to climate change

<u>Projected impact of climate change on human health in low- and middle-income</u> <u>countries: a systematic review - PMC</u>

Understand positive impact and the unintended consequences of being reliant on externally funded vertical on sustainability

- Opportunity to learn from our own experience and also of other health programmes
- Power shift towards country ownership
- Equity and impact more important than only the most cost -effective coverage

Second, I hope we change the dynamic of how we address these diseases with stronger and visible participation of people from countries in which the diseases are endemic. To decolonize global health, we must move from rhetoric to action. Dr Mwelecele Ntuli Malecela Forbes, 20 January 2021



Future focus





Group Activity 3: What do we need to strengthen integration and codelivery for sustainable public health interventions?



Policy/Governance: Building on the barriers identified in Group Activity 1, what policy changes might be needed - at the national level, at the local level and globally?



Financing: As external funding decreases, what is needed to advocate for co-delivery models at the country level? What do partners need to do to support this and advocate at the international level?



Workforce: What does this mean for the health system, including community workers, campaign workers, outreach programmes, volunteers, health service staff?

Areas of focus for our discussion





Policy/Governance: Building on the barriers identified in Group Activity 1, what policy changes might be needed - at the national level, at the local level and globally?

- Lack of political prioritisation
- Not included as part of Health Information Systems
- Interministerial / sector fragmentation of coordination
 between departments key for NTD services



Areas of focus for our discussion





Financing: As external funding decreases, what is needed to advocate for co-delivery models at the country level? What do partners need to do to support this and advocate at the international level?

- Demonstration of cost effectiveness / cost –benefit of integration over what time periods
- How to advocate to funders the need for more context specificity
- How to secure access to global financing mechanisms

Areas of focus for our discussion





Workforce: What does this mean for the health system, including community workers, campaign workers, outreach programmes, volunteers, health service staff?

Workforce

- Definition of health workforce
- Siloed structures can create competition different rates for different programmes different incentives
- Guidance of health work force training and capacity development capacity





Group Activity 3 – Moderator Anouk Gouvras





Group Activity Format

- Participants will split into 5 groups (depending on numbers)
- Each group will have:
 - A facilitator and someone to capture key messages
 - A flipchart and pens to record key points
- Each group will be asked to identify 1 or 2 key messages/research questions to share in the report back to the main breakout session.
- At the end of each group activity, each group will have 2mins to share their 1-2 key message/research question.
- All points will be included in the final report.



Group 1	Group 2	Group 3	Group 4	Group 5
Anouk Gouvras	Fiona Fleming	Stella Kepha	Poppy Lamberton	David Rollinson
Carlos Torres Vitolas	Mike French	Karen Palacio	Sylla Khadime	Akinola Oluwole
Muhammed Afolabi Louis Adu-Amoah Rana Afshar Anthony Afum-Adjei Awuah Sekeleghe Amos Kayuni Sharone backers Kalkidan Mekete Begashaw Simon Bolo Isaac Chikwanha Benoit DEMBELE Jean Coulibali Peter Dalhberg Emma Davis Tajudeen Uthman Oyetunde Oyeyemi	Florence Wakesho Meritxell Donadeu Nissou InesDossa Irene Dzathor Keisha Effiom Chinyelu Ekwunife Marina Gold John Gyapong Sukwan Handali Hazel Hasford Rachael Ireri Kimberly Kamara Neha Kamat Michal Bruck Naomi Caplan	Wendy Harrison Carol Karutu Alvine Christelle Kengne Epse Fokam Dickson Kioko Charles Kennedy Kissa Alejandro Krolewiecki Alyssa Lindrose Rosie Maddren Humphrey Mazigo Kevin McRae-McKee Ernest Moyo Richard Munyaneza Jamie Tallant Joyce Achan	Erick Muok Masceline Jenipher Mutsaka-Makuvaza Gerald Mwima Pauline Mwinzi Mutono Nyamai Patience Oduor Alison Ower Caleb Parker Gnossike Piham Joanna Pritchard Zahra Rashid Umar Saidu Zvi Bentwich Gaoussou COULIBALY Penelope Vounatsou	William E Secor Allison Shaffer Anselme Shyaka Anne Straily May Sule Kristin Sullivan Louis-Albert Tchuem Tchuenté Joe Timothy Joseph Timothy Lydia Trippler Govert van Dam Andreia Vasconcelos Titus Watitu Angela Weaver Wendy Worthington



- Policy/Governance: Building on the barriers identified in Group Activity 1, what policy changes might be needed - at the national level, at the local level and globally?
- 2. Financing: As external funding decreases, what is needed to advocate for co-delivery models at the country level? What do partners need to do to support this and advocate at the international level?
- 3. Workforce: What does this mean for the health system, including community workers, campaign workers, outreach programmes, volunteers, health service staff?







Identify the operational and implementation research questions



Operational and implementation research questions



Actionable items, such as policy recommendations

Next Steps: If there is not enough time to consolidate all the items, participants will be contacted after the conference to assist in finalizing and prioritizing the identified OR/IR and recommended actions for the report.



Thank you!

GIOBAL SCHISTOSOMIASIS ALLIANCE

- Muhammed Afolabi (LSHTM)
- Wendy Harrison (Unlimit Health)
- Florence Wakesho (MoH Kenya)
- Fiona Fleming (Unlimit Health)
- David Rollinson (GSA)
- Karen Palacio (The END Fund)
- Ladislas Nshimiyimana (RBC)
- Eugene Ruberanziza (The END Fund)
- Prudence Beinamaryo (MoH Uganda)

- Teshome Gebre (TFGH)
- Aimable Mbituyumuremyi (RBC)
- Carlos Torres Vitolas (Unlimit Health)
- Ida Marie Ameda (UNICEF)
- Yael Velleman (Unlimit Health)
- Ezra Jerome (UNICEF)
- Lynsey Blair (Unlimit Health)
- Kat Gulyas (GSA)
- Johannes Waltz (GSA/Merck)
- COR NTD & ARNTD





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