

Activity Evaluation Report

drive-AMS Kenya: 2025 Antimicrobial Stewardship Masterclass

21 – 23 May 2025

Trademark Hotel, Nairobi, Kenya



Group photo on Day 1 of the drive-AMS Masterclass in Nairobi, May 2025

Background

[drive-AMS](#) is a program developed by the Radboudumc (the Netherlands) in collaboration with the University of Antwerp/[Global-PPS](#) (Antwerp, Belgium) offering sustainable capacity development, equipping hospitals and healthcare systems worldwide to respond to the antimicrobial resistance (AMR) threat in their own environment and successfully contribute to reaching national antimicrobial stewardship (AMS) targets. The program is carried out in close collaboration with national faculty (AMS champions) of the country where the program takes place.

The drive-AMS program has three core pillars:

- I. Measurement always accompanies the development and performance of AMS interventions. The drive-AMS program provides support for measurement, and teaches professionals how to use quantity and quality indicators of antimicrobial use in their work.
- II. Teams learn about changing prescribing practices by doing. The (3-day theoretical) course has a step-by-step approach in which implementation and behavioral science play an important role and where hospital AMS teams (not individuals) design and execute their own project based on observed problems in their own practice.
- III. Teams perform and evaluate their own project in their own setting with further support from the program. After the theoretical course, the project is carried out in-house (hospital) with the support of drive-AMS experts and other experts in the field (through an expert registry called [SPICE](#)) for 18 months.



drive-AMS program in Kenya

The initiation of the drive-AMS program in Kenya is part of the drive-AMS East Africa program based on a collaboration between the sponsor (International Centre for Antimicrobial Resistance Solutions [ICARS]), Radboudumc and local stakeholders:

- In November 2023 a first (pilot) course took place in Moshi, Tanzania where approximately 40 participants from hospitals in four East African countries (Rwanda, Uganda, Tanzania, Zimbabwe) took part;
- The second step in the agreement consisted of the performance of 'train the trainer' courses in three countries and took place in Tanzania (Dar es Salaam), Rwanda (Kigali) and Kenya (Nairobi) in 2024/2025.

The planning of the 'train the trainer' course in Kenya started in November 2024, and the organising committee consisted of people from Radboudumc (Teske Schoffelen, Neda Milevska-Kostova, Jeroen Schouten), ICARS (Gloria Cordoba Currea, Fabian Maza Arnedo) and the Aga Khan University Hospital Nairobi (Gunturu Revathi, Owino Maxwell Okoth). The drive-AMS course was supported by ReAct Africa (Tracie Muraya).

The drive-AMS program is closely aligned with WHO's 'people-centered approach to addressing [antimicrobial resistance in human health](#)' which is currently being rolled out worldwide. The drive-AMS program's focus on 'how to develop and perform antimicrobial stewardship interventions in your own practice' meets the perceived need for education, skills and support for healthcare professionals who are part of AMS teams in hospitals.

drive-AMS: Antimicrobial Stewardship Masterclass

The 3-day course took place in the Trademark Hotel in Nairobi on 21-23 May 2025. The course was hosted by the Aga Khan University Hospital Nairobi (AKUHN). The stakeholders that were present included the Ministry of Health Kenya; the Aga Khan University; ICARS; BioMerieux; Commonwealth Pharmacists Association; and the East, Central and Southern Africa Health Community (ECSA-HC).

The course was conducted by faculty consisting of Dutch, Ghanaese, Kenyan and Belgian experts on AMS and implementation science: Assoc. Prof. dr. Jeroen Schouten, dr. Teske Schoffelen (Radboudumc, the Netherlands), mr. Joseph Acolatse (Cape Coast Teaching hospital, Ghana), Prof. dr. Gunturu Revathi, dr. Adeel Ahmad Shah, dr. Mark Hawken, dr. Rohini Radia (AKUHN, Kenya), dr. Paul Yonga (CA Medlynks, Kenya) and dr. Ann Versporten [online] (Global-PPS/University of Antwerp, Belgium).

A total of 40 participants from 8 hospitals across Kenya and 1 hospital in Somalia attended the course. The hospitals were carefully selected by the Kenyan organizers. Each hospital sent a team of 3-5 healthcare professionals, including AMS focal points, clinicians, clinical pharmacists, IPC nurses, and microbiologists. All Kenyan hospitals had an AMS team and met the basic requirements for an Antimicrobial Stewardship Program (ASP). The Somali hospital did not yet have a formal ASP in place. An additional team of Zambian and Kenyan ReAct Africa clinicians and pharmacists were present for the three days of the course.

Pre-course

Prior to the course, participants were instructed to review the preparatory material, '*WHO practical toolkit on Antimicrobial Stewardship Programmes in health-care facilities in low- and middle income countries*'.

During the pre-course phase, the focus was on measuring antibiotic use through a Point Prevalence Survey (using either the Global-PPS or the WHO-PPS module). As part of the preparatory activities, participants were asked to create a PowerPoint presentation of up to three slides describing the biggest problem they face in their hospital regarding antimicrobial use practices.

On-site course

The first day provided information on the context of AMR and AMS in Kenya and an overview of the three drive-AMS building blocks of a hospital Antimicrobial Stewardship Program (ASP): the prerequisites, the WHAT and the HOW. In the afternoon, hospital teams shared their problems with antibiotic use in their hospital.

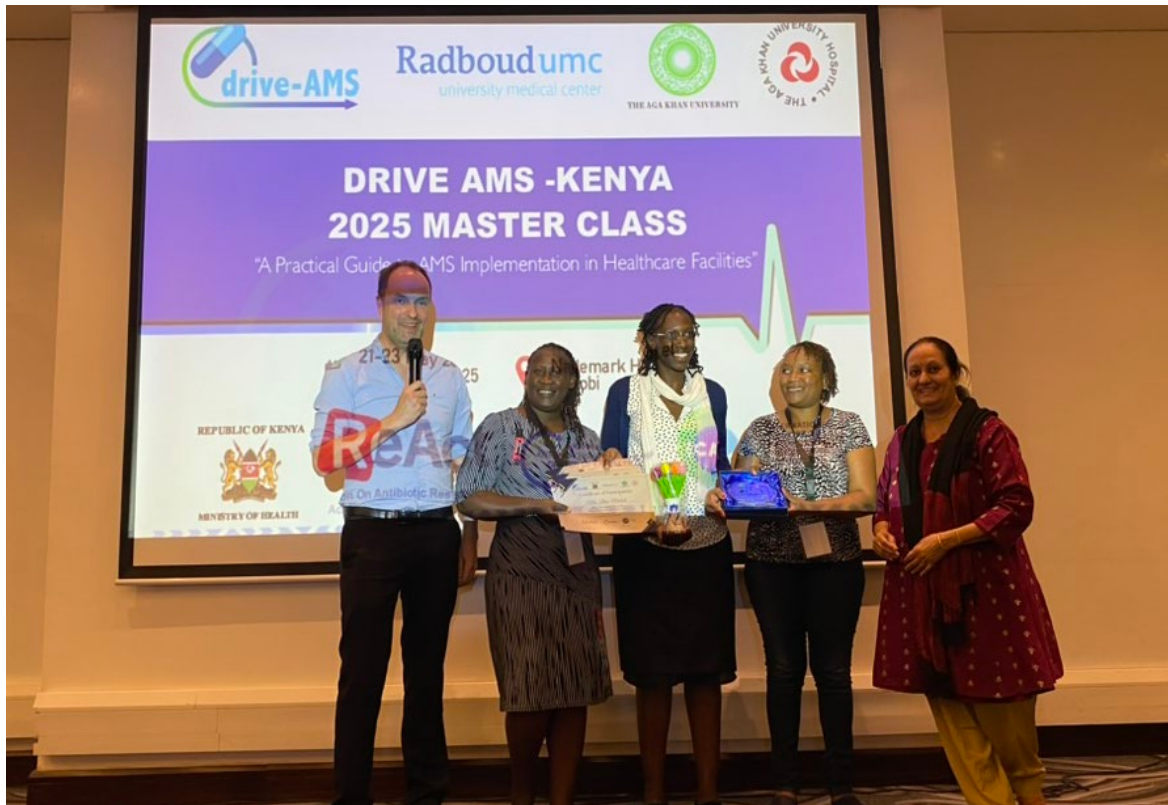
During day 2 and day 3 of the course, participants were taught about and guided through a step-by-step approach to planning an improvement intervention in their own hospital setting, which included: (1) defining their antibiotic use problem, (2) measuring the current antibiotic use in relation to that specific problem, (3) analyzing barriers and facilitators to improve this antibiotic use practice, (4) developing an improvement strategy to address these barriers and facilitators, (5) planning and performing the AMS intervention and re-measuring antibiotic use. The program contained a mix of alternating lectures and workshops and the participants were working with their own hospital team on the assignments.



Workshops during the drive-AMS Masterclass in Nairobi, May 2025

As expected, this course turned out to be a highly interactive experience, as it has been in previous editions. All hospital teams actively participated, openly sharing their experiences

and problems with the whole group. Each hospital team developed a project plan using the step-by-step approach. On day 3, all Kenyan hospital teams presented their final plan to the whole group and received feedback from their peers and the course faculty. The project plan judged by the faculty to be the best, based on pre-defined criteria, was awarded a small prize.



Award ceremony during the drive-AMS Masterclass in Nairobi, May 2025

Post-course

To apply the learned skills, all hospital teams will implement their project plan in their local setting. Progress of the AMS projects will be monitored in follow-up surveys and on post-course webinars after 3 and 12 months. Expert consultancy and coaching (online and on-site) will be provided when requested by the participating hospitals by drive-AMS and other experts through the global Specialized Program for Infectious Disease Care Everywhere ([SPICE](#)) registry, an implementation support program hosted by Radboudumc. If necessary, site visits to provide guidance and monitor progress will be planned and conducted. At the end of the follow-up at 18 months, hospital teams are expected to submit a report on their project.

Participants' evaluation of the course

After the course, participants were asked to complete an online evaluation form about the course structure, objectives, usefulness, comprehensibility, and dynamics, as well as to share their views and ideas on how it could be improved. The response rate was 63% (25/40). The majority of respondents had a very positive experience and valued the course to be extremely useful for their professional activities (88%) and fulfilling their educational goals and expected learning outcomes (92%). The overall rating of the course was 9.2 (on a scale of 1 to 10).

In support of their satisfaction, the respondents wrote:

- 'The integration of local case studies, interactive discussions, and expert-led sessions made the learning deeply practical and relevant. It bridged the gap between textbook knowledge and real-life challenges we face in our health facilities'
- 'The course was extremely useful and of very high quality'
- 'It is an extremely useful course. Please roll it out across Kenya for all hospitals to benefit'
- 'I believe that this program can shift the overall AMS behaviors globally'

Some participants also expressed that they wished to extend the course to last more than 3 days:

- 'The program was so packed, it requires more time'
- 'Could have been spread to 4 days so classes don't end late'
- 'Training a bit broad and diverse time frame should be considered 5 days'

Faculty evaluation of the course

There was consensus among faculty members that the course was very successful, based on the engagement, the enthusiasm and the learning experience that was observed from the participants.

Following points were considered very positive and constructive:

- The timing of the course – especially the training of clinical teams (instead of individuals), with a data-driven, stepwise approach, using interactive lectures and workshops focusing on behaviour change and resulting in a project plan, combined with the planned expert coaching – was excellent. This is because the participants had demonstrated a strong grasp of the fundamentals of AMS, but now require guidance on its implementation in real practice. Prof. Revathi aptly captured the momentum going into the program, observing, "Everyone was already primed. Now this course was what they needed. It was the dressing over the salad." Her words reflect the readiness of the participants, who came eager to elevate their approach with the structured guidance drive-AMS provided.
- One of the highlights was the insightful delivery of the 5-step model, particularly the 'diagnostic phase' which involves identifying determinants to appropriate antibiotic use and applying matching AMS strategies, which was noted as especially powerful in helping participants critically assess and understand the root challenges in AMS.

The next point should be improved:

- The packed program meant there was not enough time for the interactive antimicrobial stewardship case scenarios. The agenda should be less packed next time.

Follow-up of the drive-AMS program Kenya in 2025-2026:

The next phase of the program will focus on sustaining momentum and expanding its impact through structured follow-up and capacity building. The upcoming steps include:

- (I) Ongoing support for the implementation of the AMS projects (2025-2026)
- To ensure the successful implementation of these projects and their long-term sustainability in the participating hospitals, a support and monitoring framework will be put in place over the next 18 months. This will include:
- Two interactive webinars for progress review and peer learning, which will be scheduled for September 2025 (3 months post-course) and May 2026 (12 months post-course). These sessions will be organised and moderated by the Kenyan organisers and the drive-AMS faculty will be present to provide expert insights and coaching. The webinars aim to facilitate peer exchange, discuss challenges and successes, and refine project strategies.
 - Expert consultancy and coaching will be available via the SPICE Registry. Hospital teams will need to apply for ongoing expert consultancy and coaching via the SPICE Registry. The platform will match each hospital team with a drive-AMS expert depending on their requests. The expert will be involved in the execution of the AMS project, providing tailored advice and problem-solving support to enhance the implementation process in real time.
 - Each hospital will be responsible for submitting a written report, documenting the progress, outcomes, and lessons learned from their respective AMS projects. These reports will serve as both a learning tool and a means of evaluating the broader impact of the drive-AMS approach.
- (II) To plan a follow-up (own) course as part of the capacity-building strategy. The Kenyan faculty will take the lead in organizing a follow-up drive-AMS course in 2026. This next iteration will target a new cohort of Kenyan hospitals. Another option would be to combine part of the previous cohort with new hospitals. While Radboudumc will provide minimal supervisory support, the course will be primarily designed and delivered by the Kenyan team—signaling a transition to local ownership and sustainability of the program.





Appendix 1

DRIVE-AMS Kenya – 2025 Antimicrobial Stewardship Masterclass Nairobi, Kenya; 21-23 May 2025

Local time	Plenary sessions
WEDNESDAY 21 May 2025 – Morning	
General introduction, basic principles of Antibiotic Stewardship Program (ASP)	
08:00-08:30	Arrival, Coffee, and Registration
08:30-08:35	Welcoming the guest and participants - Prof. Gunturu Revathi
08:35-08:40	Opening of the Workshop and Remarks - Dr Charles Kandie; Director Health Systems Standards; Ministry of Health Kenya.
08:40-08:45	Welcoming Remarks - Prof. John Weru; Associate Dean Clinical Affairs, AKUHN
08:45-09:00	Welcoming Remarks - Prof. Shahin Sayed; Chairperson and Director Department of Pathology
09:00-09:15	Welcome Remarks and Introduction to ICARS – Dr Fabian Maza; Science Officer ICARS
09:15-09:30	Antimicrobial use in Kenya -A Perspective of Ministry of Health - Emmanuel Tanui
09:30-09:45	The current landscape of AMS in Kenya/East-Africa - Prof. Gunturu Revathi
09:45-10:15	Introduction to the Drive AMS Project – Prof. Jeroen Schouten; Lead Drive AMS
10:15-10:45	The Basic requirements of an ASP: An overview - Prof. Jeroen Schouten
10:45-11:15	The WHAT of ASP: What appropriate antibiotic use leads to better outcomes? – Dr Paul Yonga; Director Medlynks
11:15-11:45	Group Photo, Tea Break, and Networking - All
11:45-12:05	Pre-assessment - Prof. Gunturu Revathi, Rebecca
12:05-12:30	AMS Capacity building experience in two Kenya Facilities – Dr Tracie Muraya; Kenya Lead ReACT
12:30-13:30	LUNCH
WEDNESDAY 21 MAY 2025 – Afternoon	
Workshop implementation in practice, part I: "What exactly is your problem?"	
13:30-14:00	The HOW of ASP: how does the AMS team make sure that appropriate antibiotic use practices are provided by professionals in their setting? - Dr Teske Schoffelen
14:00-14:40	Impact of AMS Masterclass and its follow through on local practice - Dr Joseph Acolatse, Ghana
14:40-15:30	Presentation of participants (10 minutes per group) part 1

	Current situation in your own hospital, what is your largest problem/concern related to antimicrobial use? – Drive-AMS / Kenya faculty
15:30-15:50	Coffee BREAK
15:50-16:30	Presentation of participants (10 minutes per group) part 2 Current situation in your own hospital, what is your largest problem/concern related to antimicrobial use? - Drive-AMS / Kenya faculty
16:30-17:00	Group work: Reflect on step 1 of 'Our AMS project' - Drive-AMS / Kenya faculty

THURSDAY 22 MAY 2025 – Morning	
How do you measure the quantity and quality of antimicrobial use?"	
08:30-09:00	Coffee BREAK
09:00-09:15	Recap Day 1 - Prof. Jeroen Schouten
09:15-09:45	Quantity of antimicrobial use: the BASICS - Prof. Jeroen Schouten
09:45-10:45	Workshop 1: How to use Quantity metrics in my hospital? - Prof. Jeroen Schouten & Dr Teske Schoffelen
10:45-11:00	Mind reset BREAK
11:00-11:30	Quality of antimicrobial use: the BASICS - Dr Joseph Acolatse
11:30-12:30	Workshop 2a: How to operationalize the quality indicators for appropriate antimicrobial use? - Drive-AMS / Kenya faculty
12:30-13:30	LUNCH
THURSDAY 22 MAY 2025 – Afternoon	
Workshop implementation in practice, part II: "How do you measure the quality of antimicrobial use?"	
13:30-14:00	Presentation on PPS - WHO and G-PPS- Ann VERSPORTEN [ONLINE]
14:00-15:00	Workshop 2b: Discussion of PPS data of participating hospitals, presentation by 2-3 groups - Drive-AMS / Kenya faculty
15:00-15:30	Coffee BREAK
15:30-16:00	How to make effective use of antibiotic data in your hospital? - Prof. Jeroen Schouten
16:00-17:00	Structured ROUND TABLE on prescribing difficulties: treating UTI in the community (OPD) – Dr Mark Hawken
17:00-18:00	Group work: Reflect on step 1 and 2 of 'Our AMS project' - Drive-AMS / Kenya faculty

FRIDAY 23 MAY 2025 – Morning	
Workshop implementation in practice, part III: "How do you analyse barriers?"	
08:30-9:00	Coffee BREAK

09:00-09:15	Recap Day 2 - Dr Teske Schoffelen
09:15-09:45	Determinants of antibiotic use practices - Dr Teske Schoffelen
09:45-11:15	Workshop 3: How to assess the barriers and facilitators of the selected antimicrobial use practice? - Drive-AMS faculty
11:15-11:30	Mind reset BREAK
11:30-12:30	Workshop 4: From barriers to an intervention - tools and tricks - DRIVE-AMS faculty
12:30-13:30	LUNCH
FRIDAY 23 MAY 2025 – Afternoon	
Workshop implementation in practice, part IV: "How do you choose an effective intervention?"	
13:30-14:00	Group work: Reflect on <i>step 3-5</i> of ‘Our AMS project’: Which are the possible barriers? Which interventions may help overcome the possible barriers? - Drive-AMS / Kenya faculty
14:00-15:10	Antimicrobial stewardship case scenarios (role play) – Kenya faculty (moderator Prof. Jeroen Schouten)
15:10-15:30	Coffee BREAK
15:30-15:45	Next steps: SPICE registry and follow up webinars - Prof. Jeroen Schouten
15:45-17:45	Plenary presentation of group project plans (step 1-5) to the group of experts & discussion (10-15 min per group) <i>Expert panel: Drive-AMS / Kenya faculty</i>
17:45-18:30	Certificate ceremony - All

DRIVE-AMS Kenya – 2025 Antimicrobial Stewardship Masterclass Nairobi, Kenya; 21-23 May 2025

Participants list

	TITLE	NAME	INSTITUTION
1	DR.	IBRAHIM MOHAMED ALI	BENADIR HOSPITAL
2	DR.	ALI MOHAMOUD SAMATAR	BENADIR HOSPITAL
3	DR.	ILHAN OMAR GELLE HASSAN	BENADIR HOSPITAL
4	DR.	MOHAMED MOHAMUD SHOBOW	NATIONAL INSTITUTE OF HEALTH
5	DR.	MUKTAR BARYARE MATAN	BENADIR HOSPITAL
6	DR.	EVE KOILE	JARAMOGI OGINGA ODINGA TEACHING & REFERRAL HOSPITAL
7	DR.	NETO OBALA	JARAMOGI OGINGA ODINGA TEACHING & REFERRAL HOSPITAL
8	DR.	CAROLINE WAFULA	JARAMOGI OGINGA ODINGA TEACHING & REFERRAL HOSPITAL
9	MISS.	PAMELA ANYANGO OPEPO	JARAMOGI OGINGA ODINGA TEACHING & REFERRAL HOSPITAL
10	DR.	SARAH KIBIRA	NYERI PROVINCIAL GENERAL HOSPITAL
11	MR.	PETER KIMENGI	NYERI PROVINCIAL GENERAL HOSPITAL
12	MRS.	JANE MURIITHI	NYERI PROVINCIAL GENERAL HOSPITAL
13	MRS.	ROSE WANJIRU NJOROGE	NYERI PROVINCIAL GENERAL HOSPITAL
14	DR.	BETH MAINA	MBAGATHI COUNTY REFERRAL HOSPITAL
15	DR.	MARION ONG'AYO	MBAGATHI COUNTY REFERRAL HOSPITAL
16	MRS.	ANGELA MOTANYA	MBAGATHI COUNTY REFERRAL HOSPITAL
17	DR.	IRENE NJERI	KIAMBU LEVEL 5 HOSPITAL
18	DR.	ROBERT MWANGI	KIAMBU LEVEL 5 HOSPITAL
19	MRS.	MAUREEN WILSON	KIAMBU LEVEL 5 HOSPITAL
20	DR.	CYNTHIA NDUTA	KIAMBU LEVEL 5 HOSPITAL
21	DR.	LUCY OCHOLA	MACHAKOS LEVEL 5 HOSPITAL
22	MRS.	LILIAN MWIKALI	MACHAKOS LEVEL 5 HOSPITAL
23	MRS.	CAROL MUTISYA	MACHAKOS LEVEL 5 HOSPITAL
24	DR.	ESBON NJAU	NANYUKI TEACHING & REFERRAL HOSPITAL
25	MR.	FRANKLIN MWITI	NANYUKI TEACHING & REFERRAL HOSPITAL
26	DR.	EDNA KUBAI	NANYUKI TEACHING & REFERRAL HOSPITAL
27	DR.	DUNCAN NJAU	NANYUKI TEACHING & REFERRAL HOSPITAL
28	DR.	SPELANZA WAHOME	NANYUKI TEACHING & REFERRAL HOSPITAL
29	DR.	D N WAMBUA	DEFENCE FORCES MEMORIAL HOSPITAL
30	DR.	SYLVIA GACHOKA	DEFENCE FORCES MEMORIAL HOSPITAL
31	MISS.	IRENE NYATHIRI	DEFENCE FORCES MEMORIAL HOSPITAL
32	DR.	AGATA KABERIA	DEFENCE FORCES MEMORIAL HOSPITAL
33	MR	ARGWINGS CHAGWIRA	AIC KIJABE MISSION HOSPITAL
34	DR.	GRACE MUSIIME	AIC KIJABE MISSION HOSPITAL

35	DR.	ANN NJAMBI	AIC KIJABE MISSION HOSPITAL
36	MISS.	TABITHA MUCHENDU	AIC KIJABE MISSION HOSPITAL
37	DR.	DOROTHY AYWAK	COMMONWEALTH PHARMACIST
38	DR.	ERICK MURINGU	COMMONWEALTH PHARMACIST
39	DR.	NKATHA GITONGA	CLINICAL PHARMACIST
40	PROF.	GUNTURU REVATHI	AGA KHAN UNIVERSITY HOSPITAL
41	PROF.	SHAHIN SAYED	AGA KHAN UNIVERSITY HOSPITAL
42	PROF.	JOHN WERU	AGA KHAN UNIVERSITY HOSPITAL
43	DR.	ADEEL SHAH	AGA KHAN UNIVERSITY HOSPITAL
44	DR.	NATH ARWA	AGA KHAN UNIVERSITY HOSPITAL
45	DR.	MARK HAWKEN	AGA KHAN UNIVERSITY HOSPITAL
46	MR.	MAXWEL OKOTH	AGA KHAN UNIVERSITY HOSPITAL
47	DR.	MARYANNE ONG'UDI	AGA KHAN UNIVERSITY HOSPITAL
48	DR.	ROHINI RADIA	AGA KHAN UNIVERSITY HOSPITAL
49	DR.	BINDI TANK	AGA KHAN UNIVERSITY HOSPITAL
50	MISS.	RABECA BARASA	AGA KHAN UNIVERSITY HOSPITAL
51	DR.	KIPLANGAT SIGEI	BIOMERIEUX KENYA
52	MS.	SOUMEYA LOUCIF	BIOMERIEUX KENYA
53	MR.	KAMAU GATWECHI	BIOMERIEUX KENYA
54	DR.	PAUL YONGA	CA MEDLYNKS
55	DR.	MARYBETH MARITIM	UNIVERSITY OF NAIROBI
56	DR.	TRACIE MURAYA	REACT AFRICA
57	DR.	YAMANYA TEMBO	REACT AFRICA
58	DR.	MWITUPA MAKASHINYI	REACT AFRICA
59	DR.	GRACE WANJOHI	AAR HOSPITAL
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61	DR.	FELISTER MUTUMA	REACT AFRICA
62	DR.	TEBUHO MATEELE	LEVY MWANAWAHA UNIVERSITY TEACHING HOSPITAL
63	DR.	CHEELO MWIINGA	UTH CHILDREN'S HOSPITAL ZAMBIA
64	DR.	EVELYN NDUNGE MWANIA	ACCEZAR HEALTH AFRICA
64	DR.	CATHERINE MURITHI	ACCEZAR HEALTH AFRICA
65	DR.	TESKE SCHOFFELN	RADBOUD UMC UNIVERSITY MEDICAL CENTER
66	PROF.	JEROEN SCHOUTEN	RADBOUD UMC UNIVERSITY MEDICAL CENTER
67	DR.	FABIAN MAZA	ICARS
68	MR.	ACOLATSE JOSEPH ELIKEM	CAPE COST TEACHING HOSPITAL
69	DR.	EMMANUEL TANUI	MINISTRY OF HEALTH
70	DR.	IRUNGU KAMAU	MINISTRY OF HEALTH
71	DR.	EVELYN WESANGULA	ECSA-HEALTH COMMUNITY