

KEMRI | Wellcome



THE ANNUAL REPORT 2024

Advancing global health innovation,
and nurturing research leadership



Our mission is to conduct high quality, purposeful, and relevant research in human health, building sustainable research capacity and leadership



TABLE OF CONTENTS, LIST OF TABLES AND LIST OF FIGURES

MESSAGE FROM THE DIRECTOR	4
WHO WE ARE.....	5
2024 IN REVIEW.....	6
PEOPLE AND EXCELLENCE.....	7
RESEARCH	10
Pathogen Biology.....	10
Vaccines	9
Clinical Research	12
Population Health and Surveillance.....	14
Health Systems Research.....	16
ENGAGEMENT	17
PEOPLE AND CAPABILITIES.....	23
Research Capacity Development.....	25
Continuous Professional Development	27
RESEARCH ENVIRONMENT	28
STRATEGIC FINANCE SUMMARY	30
IMPACT	34
Research Impact	35
Policy Impact.....	36

LIST OF TABLES

Table 1: Study engagement	21
Table 2: Capacity Development highlights	25
Table 3: CPD trainings by department in 2024.....	27

LIST OF FIGURES

Figure 1: The Kilifi Health and Demographic Surveillance System (KHDSS)	14
Figure 2: The Kilifi Health and Demographic Surveillance System (KHDSS)	30
Figure 3: Trends in share of grant holding by LMIC researchers at KWRP	31
Figure 4: Annual expenditure by source in GBP in 2024	32
Figure 5: Share of grant awards by non-Wellcome funders in 2024.....	33

IMPACT SPOTLIGHTS

Impact Spotlight 1: Leveraging Genomic Science to Support National Outbreak Response.....	9
Impact Spotlight 2: Shaping Global Standards in Community Engagement.....	18
Impact Spotlight 3: Building Institutional Research Capacity – Collaboration with Pwani University	24
Impact Spotlight 4: From High School Attachee to Postdoctoral Researcher: Kazungu's Journey	29



2024 was a milestone year for the KEMRI-Wellcome, highlighted by renewed partnerships, £26.2 million in grant income, and 246 impactful publications. We empowered 175 trainees, celebrated 73 graduations, and strengthened our inclusive workplace. Our commitment to African-led science and capacity building remains steadfast, driving research that advances knowledge, informs policy, and transforms lives.

Edwine Barasa,

Interim Executive Director, KEMRI-Wellcome Research Programme



MESSAGE FROM THE DIRECTOR

2024 was a landmark year for the KEMRI-Wellcome Research Programme, marked by bold progress across our mission to deliver high-quality, impactful research and to strengthen research capacity and leadership in Africa.

A defining milestone was the renewal of the KEMRI-Wellcome partnership, with KEMRI, Wellcome, and the University of Oxford signing a new six-year Memorandum of Agreement. This reaffirmed our shared commitment to scientific excellence, long-term collaboration, and a common vision for advancing health through research.

We secured £26.2 million in grant income to support cutting-edge science and capacity development. Our research output remained strong, with 246 peer-reviewed publications, and we made deliberate efforts to ensure our findings are accessible and useful to policymakers and the public. From basic discovery to real-world policy influence, our work continues to

underscore the power of a purposeful, African-led research agenda.

Capacity building remained central to our mission. In 2024, we awarded 175 studentship and fellowship opportunities and celebrated the graduation of 73 trainees across our schemes. These achievements reflect our commitment to nurturing the next generation of African scientists and leaders.

We also strengthened our internal environment - investing in an inclusive and supportive workplace culture that prioritises diversity, equity, inclusion, and continuous professional development for both research and operational teams.

As we reflect on 2024, I am proud of the resilience, excellence, and collaboration that defines our community. I look forward to building on this momentum as we continue to pursue research that not only advances knowledge but also transforms lives.

This report showcases our progress and achievements across four key pillars:

- 1** High-quality research in human health
- 2** Capacity development
- 3** Public and policy engagement
- 4** Investment in people and culture

£26.2 M

Grant income mobilized to support cutting-edge science and capacity development

246

Peer-reviewed papers published in 2024

175

Number of studentship and fellowship opportunities awarded in 2024

73

Number of graduands across the range of our studentship schemes in 2024

WHO WE ARE

The KEMRI-Wellcome Research Programme is a partnership between the Kenya Medical Research Institute (KEMRI), Wellcome, and the University of Oxford, established in 1989. Our mission is to conduct high-quality, impactful health research while building sustainable research capacity and leadership in Africa.

Since its inception, the Programme has evolved from a focus on malaria immunology and epidemiology to a broad, multidisciplinary research portfolio organized around five thematic areas: pathogen biology, vaccines, clinical research, population health, and health systems. This work is underpinned by robust research platforms, including state-of-the-art bioscience laboratories, the Kilifi Health and Demographic Surveillance System (KHDSS), a clinical trials unit,

the Clinical Information Network (CIN), and a strong community and stakeholder engagement platform.

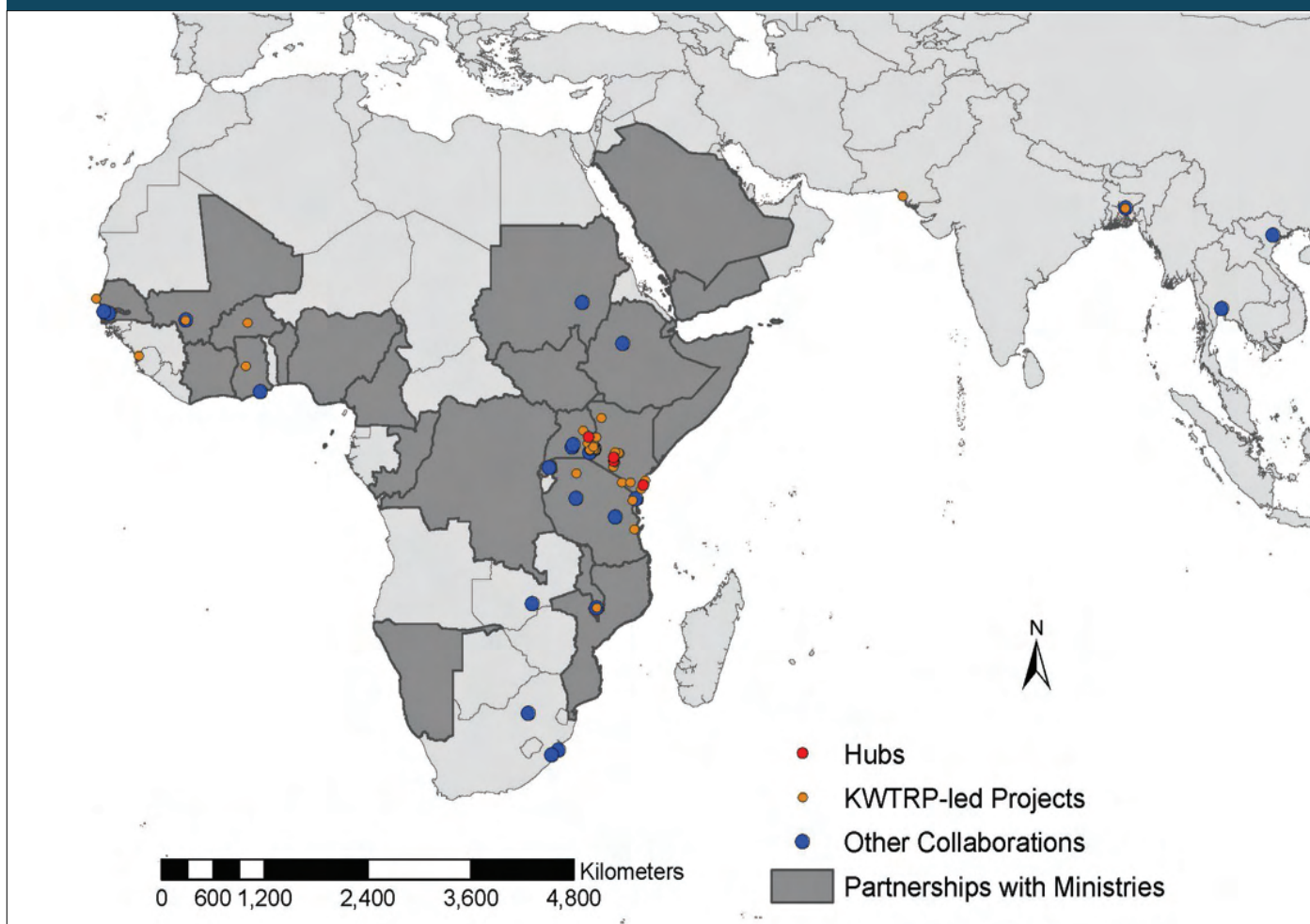
Capacity development is central to KEMRI-Wellcome's mandate. Through an integrated approach targeting both individual and institutional levels, the Programme has invested significantly in training and mentoring the next generation of African health researchers.

Engagement remains a cornerstone of our approach. We have developed a deliberate engagement strategy that fosters meaningful interaction with communities, the general public, and policy makers. This ensures that our research is relevant, ethical, and responsive to the health priorities of the societies in which we work.

OUR RESEARCH WORK FOCUSES ON FIVE THEMATIC AREAS

- 1 Pathogen biology
- 2 Vaccines
- 3 Clinical research
- 4 Population health
- 5 Health systems research

OUR GLOBAL FOOTPRINT



2024 IN REVIEW

PUBLICATIONS



246

Number of peer-reviewed papers published in 2024

POLICY IMPACTS



10

Number of policy briefs developed in 2024

LEADERSHIP CHANGES

Prof. Edwine Barasa has taken over as Interim Executive Director from Prof. Philip Bejon. Dr. Joseph Mwangangi handed over the role of KEMRI CGMR-C Deputy Director to Dr. Sophie Uyoga



GRANTS

40

Number of grants secured in 2024, mobilizing **GBP 26.2** million for our research and capacity building initiatives



SIGNING OF THE PROGRAMME MOA

KWRP celebrated a major milestone with the renewal of its long-standing partnership with the Wellcome, KEMRI, and the University of Oxford. This renewed collaboration includes a landmark **GBP 90 million** grant from Wellcome to support pioneering health research for seven years.



CLINICAL INFORMATION NETWORK

We celebrated **10 years** of Clinical Information Network's role in improving child and newborn hospital care and guiding health policy across **19** Kenyan counties.



RESEARCH DISCOVERIES



10

Number of research discoveries in 2024



CAPACITY BUILDING

73

Number of Fellowships completed in 2024 across all schemes with **12 PhD** Fellows successfully defending their Vivas

STRATEGY DEVELOPMENT



The Programme strategy development process was initiated



In 2024 we were privileged to host the Wellcome CEO John-Arne Røttingen

PEOPLE AND EXCELLENCE

Professorships

Martha Mwangome, Marta Maia and Charles Sande were awarded as associate professorships by the University of Oxford.



Martha Mwangome



Marta Maia



Charles Sande

PhD Class of 2024



Allan Sudoi



Aishatu Adamu



Melvin Obadha



Elizabeth Kibwana



Kelvin Muteru



Nancy Mwangome



Alex Macharia



Jamlick Karumbi



Caroline Bundi



Caroline Mburu



Jonathan Karisa



Patrick Mwangala

RESEARCH



LEVERAGING GENOMIC SCIENCE TO SUPPORT NATIONAL OUTBREAK RESPONSE

In early 2024, KWRP swiftly identified the viral cause of a pink eye outbreak in coastal Kenya using advanced genomic tools. The rapid response, in partnership with health authorities, helped contain the spread, underscoring the power of science-policy collaboration in protecting public health.

In early 2024, Kenya faced a sudden surge in cases of acute hemorrhagic conjunctivitis (AHC) - commonly known as "red eye" or "pink eye", in the coastal region, prompting the Ministry of Health to issue an outbreak alert. In response, the KEMRI-Wellcome Research Programme (KWRP) mobilized its state-of-the-art genomic platform and strong collaborative ties with national and county health authorities to help uncover the source of the outbreak.

Working closely with the Ministry of Health and the Mombasa County Government, our scientists rapidly deployed metagenomic sequencing, a cutting-edge technique that enables comprehensive detection of all genetic material in clinical samples. This approach was instrumental in identifying the causative agent behind the outbreak.

Our analysis detected Coxsackievirus A24 variant (CA24v), a well-known cause of AHC, in samples from three patients. These findings were confirmed through an in-house molecular diagnostic test and a second genomic analysis method. Further investigation revealed that the detected virus strains were



genetically similar to a known CA24v genotype (Genotype IV), providing strong evidence that this virus was the likely cause of the outbreak in coastal Kenya.

This rapid and precise identification of the pathogen enabled health authorities to tailor their response and public messaging, helping to contain the spread and manage the outbreak more effectively.

This episode highlights the critical role of advanced genomic capabilities and strong science-policy partnerships in national health security. By combining cutting-edge technology with trusted collaboration with government, KWRP continues to play a central role in strengthening Kenya's ability to detect, understand, and respond to infectious disease threats in real time.



RESEARCH

Pathogen Biology

Aims

Our pathogen biology theme takes a discovery approach to tackle high-burden infectious diseases by advancing insights into host responses, host-pathogen interactions, and mechanisms of disease transmission and resistance. This work is powered by state-of-the-art molecular and immunological laboratories in Kilifi and three unique research platforms: (i) a controlled human infection model; (ii) 20 years of active surveillance tracking childhood immunity to malaria and other pathogens; and (iii) febrile illness surveillance across primary and secondary care. These platforms are supported by a biobank containing over a million samples linked to meticulously curated epidemiological, clinical, and pathogen genomics datasets. Our research spans host responses, pathogen characteristics, and vector dynamics to drive impactful discoveries.

New Grants and Projects

We secured several grants and initiated new projects to advance our pathogen biology research. These include:

- 1 A collaborative pilot project on uncovering targets of protective malaria immunity for the next generation vaccines for 2 years working on data and samples from Kenya, Papua New Guinea, and Uganda.
- 2 Identifying correlates of protection to support vaccine development for Shigella for 3 years working on data and samples from Burkina Faso, Kenya, USA, and Zambia in collaboration with ADI (USA), CIRDZ (Zambia), CRUN (Burkina Faso), GRAS (Burkina Faso), GVGH (Italy), Seromyx (USA) and University of Oxford.
- 3 In collaboration with the University of Oxford, UK to test the efficacy in a controlled human malaria infection (CHMI) Plasmodium falciparum model of multi-stage malaria combination vaccines for 5 years working as part of a consortium involving 10 institutions from Burkina Faso, Denmark, Germany, Kenya, Senegal, Sierra Leone, Tanzania, and UK.
- 4 A 3 year fellowship in support of research work that interrogates disease mechanisms utilising plasma extracellular vesicles.
- 5 The K. pneumoniae colonization project, that seeks to understand the pattern of colonization of the bacteria in neonates in 3 Kenyan hospitals. NeoKPN study aims to determine rates of Neonatal Klebsiella pneumoniae colonisation, their serotypes and surface loci vaccine targets to inform maternal vaccine development.
- 6 A BMGF funded project for neonatal bacteremia surveillance in selected hospitals in Kenya.
- 7 SANTHE collaborative grant, with colleagues in AHRI, to work on characterising broadly neutralizing antibody precursors and vaccine-induced antibody responses to HIV germline-targeting vaccines.
- 8 A collaborative grant to Wellcome Major International Programmes, AHRI, CIDRI-A, MLW, MORU and OUCRU for Cross-AAPs acceleration of genomics for escalating infectious diseases.
- 9 Collaborative project for a Multicounty analysis of dengue and Zika virus burden, immunogenicity, and population level risk
- 10 A collaborative project with the African Collaboration for Innovation in HIV/TB prevention; for the Sub-Saharan African Network for TB/HIV research Excellence grant to strengthen South-South partnerships in HIV & TB research
- 11 A project whose scope is to expand B cell analytics to support future evaluation of clinical trials and a GILEAD-SANTHE award (**USD 159,253**) for HIV-1 reservoir characterization: Can peripheral blood act as a “window” to viral reservoirs in other anatomical sites?



RESEARCH

Vaccines

Aims and Focus

Our vaccine research aims to accelerate the development, access, and uptake of the most effective vaccines for local and global health priorities. Additionally, we are committed to shaping the next generation of vaccinologists through a dedicated workforce development program.

New Projects

We secured several grants to initiate new projects to further our vaccinology work. These include:

- 1 Work in support of a phase 2 trial of ChAdOx1 RVF vaccine in adults in Kenya. This is the most advanced Rift Valley Fever vaccine globally.
- 2 The Background Rates of Adverse events for Vaccine Evaluation in Africa BRAVE project to support the development of infrastructure for post-authorisation vaccine safety surveillance in low- and middle-income countries (LMICs) and identify the rates of potential adverse events of special interest (AESI) before the introduction of new vaccines. This project is coordinated by the Global Vaccine Data Network and involves multiple countries in Africa.
- 3 The project aims to estimate the burden of chikungunya in East Africa to inform decisions on vaccine evaluation and deployment on the continent. A newly licensed vaccine – developed by Valneva – is available but its performance in populations in Africa is unknown. In addition to estimating the disease burden, the project will provide data that will help in vaccine cost-effectiveness analyses.
- 4 In continuation of the **Yellow Fever fractional study** findings we aim to investigate the durability of immunity provided by fractional doses of Yellow Fever (YF) vaccine that will have immediate translational impact on WHO recommendations on YF.
- 5 Confirmation has been received from the international vaccine initiative (IVI) that KWRP will be a clinical trial site for a HPV vaccine trial in toddlers and infants. A small preparatory project will start in Jan 2025-March 2026 while a trial site in Ghana generates stage 1 data. The full grant and trial will start in March 2026 if there are no safety signals from the Ghanaian data

RESEARCH

Clinical Research

Aims and Focus

Our clinical research theme aims to improve care and outcomes for sick children, neonates, and mothers, by tackling major global health challenges that include malnutrition, high burden infections, and mental health. This research is underpinned by an integrated platform that includes a clinical trials facility (CTF), hospital surveillance (Kilifi County Teaching and Referral

Hospital), bioscience laboratories, and the clinical research platform in Mbale, Uganda. Our research also extends across the Clinical Information Network (CIN), a hospital surveillance network of 24 public hospitals in 19 counties in Kenya, where we collect routine data on admissions, care and outcomes in paediatric, neonatal, and adult wards and conduct pragmatic clinical trials.

New Projects

Studies that have been initiated since the last report include:

- 1 The Individualized Breastfeeding Support for Acutely ill Malnourished Infants (IBAMI) - 2 study that aims to determine the effectiveness of a structured home-based breastfeeding support intervention on growth and neurodevelopment amongst malnourished infants under 6 months of age discharged from hospital following serious illness.
- 2 The SuPport of African communities to increase the Resilience and mental health of Kids **The SPARK** study, a cluster randomised trial that aims to evaluate the effectiveness of the World Health Organisation (WHO) Caregiver Skills Training (CST) compared to enhanced usual care in reducing emotional and behavioural problems in children with developmental disabilities and improved quality of life of their caregivers.
- 3 The platform trial for severe malaria in African children (**SMAART-MAP**), aims to identify adjunctive therapies that will help children with severe malaria get better faster in the short term (within 3 days of coming to hospital) to inform evaluation of promising adjunct candidates in empirical efficacy trials.
- 4 The **Virutubisho** study, aims to determine the optimal doses of nutrient supplementation to correct micronutrient deficiencies in pregnant women living in coastal Kenya.



In 2024, we secured several major grants to support clinical trials addressing pressing health challenges in our context. These include:

1. Modifying Intestinal MicroBiome with LEgume-based feeds (MIMBLE 3). This grant is funding a randomised controlled trial in African children hospitalised with severe malnutrition. The study will extend early Phase trials of legume-based formulae for children with severe malnutrition (SM), which have shown improved markers of gut health and better clinical outcomes. The study will compare a new feed (containing chickpeas, soya, and sweet potato) to standard feeds in a clinical trial involving 1370 children hospitalised with SM in Kenya, Zambia, and Ghana.
2. TOCSINS study. This grant supports a multi-country Phase 2a Randomised Placebo controlled trial of Oral Community SVMP Inhibitors for Snakebite - in collaboration with the Liverpool School of Tropical Medicine. This Phase II clinical trial is investigating the potential of two oral drugs, **unithiol** and **marimastat**, to act as new therapies against bites from the **common lancehead** (Brazil) and the **West African carpet viper** (Ghana).
3. SNIP-Africa project is establishing neonatal sepsis surveillance in Kenya, Uganda, Tanzania, Ghana, and South Africa within the SNIP-Africa consortium. Part of the aims include the development of novel methods for determining the unit-level resistome and unit-level prediction of neonatal sepsis outbreaks.
4. Perinatal CMV prevalence and outcomes project is investigating the prevalence and impact (neurodevelopmental disorders and survival) of congenital cytomegalovirus (CMV) infection in rural Kenya.
5. NeoBAC-2 study is carrying out neonatal sepsis surveillance in 5 Kenyan public hospitals to determine the prevalence of bacteraemia and antimicrobial resistance among neonates and the hospital environment. The study is continuously sharing data with the Kenyan Ministry of Health, directly informing treatment protocols, improving infection control, and supporting antimicrobial stewardship efforts in Kenya.
6. JPI-AMR ALARUM study aims to understand how common antibiotic resistance is in the population and household environment, how it spreads from person to person, and whether antibiotic resistance (AMR) in bacteria present in the community contributes to antibiotic resistant infections in hospitals during admission using one health low-cost AMR sentinel surveillance approach.
7. CHAIN-PoP a proof of principle trial on maternal support and cash transfer to prevent post-discharge mortality in high-risk hospitalised children.



Population Health and Surveillance

Aims and Focus

The Population Health theme aims to provide timely and actionable evidence on the infectious and non-communicable conditions that account for the largest burden of disease in Africa. Research in this theme focusses on a) providing detailed descriptions of the evolving health of the population at different levels of resolution. We focus on high burden conditions including infectious disease, mental health and cardiometabolic conditions, b) Evaluating the effects of key interventions, e.g. vaccines, on population health, and c) measuring the impact of factors likely to adversely affect population health, e.g. climate change. Our population health research leverages the Kilifi demographic and health surveillance platform, an integrated surveillance and research platform capturing vital events and hospital admissions among 300,000 residents of Kilifi County that we established in 2000 (figure 1).

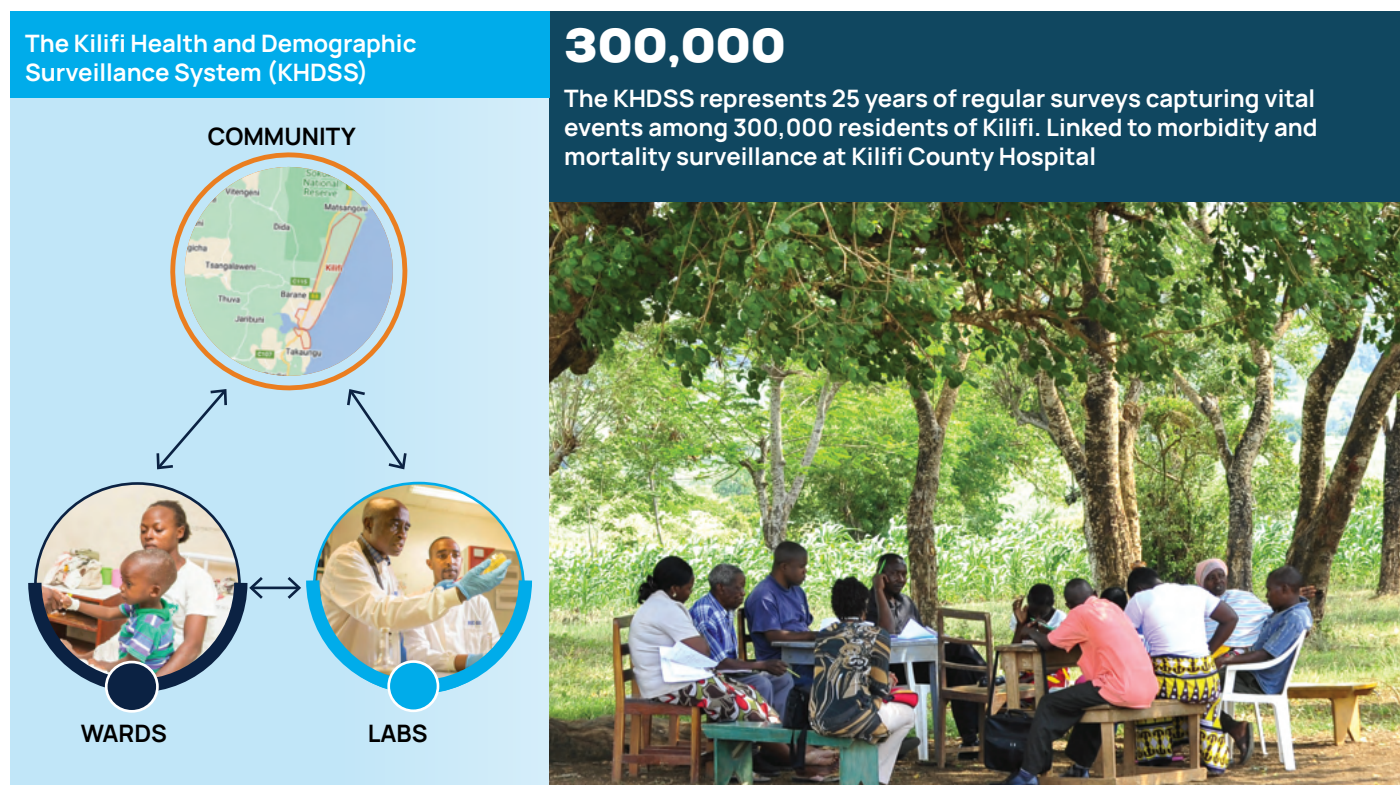


Figure 1: The Kilifi Health and Demographic Surveillance System (KHDSS)



Population Health and Surveillance

New Grants and Projects

Several new grants were secured and studies initiated under the population health theme with a focus on demography, genomic surveillance, non-communicable diseases and mental health, and sero-surveillance:

- 1 Genetic epidemiology:** This work aims to use epidemiological, population-genetic, multi-omic, parasite gene-editing and parasite phenotyping approaches to study how some malaria parasites evade the protective effect of sickle haemoglobin.
- 2 Cardiovascular disease epidemiology:** The study aims to develop and test a community health worker led complex intervention for reducing cardiovascular risk in Kenya and the Gambia.
- 3 Demographic surveillance:** The team is leading work aimed at understanding challenges to and developing potential solutions for achieving universal registration of births and deaths, as well as cause of death certification across the country.
- 4 Genomic surveillance:** The project is conducting a detailed study on the genomic epidemiology of respiratory, haemorrhagic, and diarrheal viruses capable of causing outbreaks in Kenya, Democratic Republic of Congo, and the Comoros. The studies will improve understanding integration of genomics and modelling for outbreak response into health systems.
- 5** The Rapid Virus Genomics for outbreak investigations (RAVIG) team are investigating the feasibility of implementing a portable real-time genomics system using the portable Oxford Nanopore Technology sequencing platform during disease outbreak investigations in coastal Kenya. This work is being done in six coastal counties in Kenya in collaboration with the MoH, National Public Health Laboratories, and has the potential to significantly improve decision making processes by public health authorities when responding to infectious disease outbreaks.
- 6** Federated analysis of genomic data (FASGEN), is developing approaches to enable wide sharing of genomic data arising from outbreak investigations in which authorized users can access data in a trusted research environment. This allows maximum use of data while at the same time adhering to local and international laws on data protection.
- 7** In collaboration with teams in the Bioscience department and CDC-Kenya we will develop multi-pathogen assays to apply on samples obtained from the Kenya National Population-based HIV Impact Assessment (KENPHIA) II to generate national seroprevalence estimates for 7 Vaccine Preventable Diseases (diphtheria, pertussis, tetanus, measles, mumps, rubella and varicella), 3 arboviruses (chikungunya, dengue and Rift Valley Fever (RVF) and hepatitis B.
- 8** Parkinson's survey: In collaboration with teams from the University of Newcastle we are conducting a survey for parkinson's disease in the Kilifi HDSS as part of the NIHR funded Transforming Parkinson's Care in Africa (TrapCAF) study. They aim to determine the prevalence of this debilitating condition and its risk factors in an African setting by conducting robust epidemiological and clinical studies. Other countries involved in the study are Tanzania, Ghana, and Ethiopia.
- 9** With colleagues from the Malawi Liverpool Wellcome Programme we have started work on the NIHR Global Health Group on Vaccines to Control Respiratory Pathogens and AMR across Africa (VacAMR). The research focuses on whether control of infections & deaths due to respiratory pathogens & AMR can be improved through vaccine & non-vaccine multimodal interventions. VacAMR aims to improve the detection of infection & AMR through cutting-edge diagnostic technologies and also to identify better ways to measure immune protection while also strengthening antibiotic stewardship and healthcare related hygiene practices.

Health Systems Research

Aims and Focus

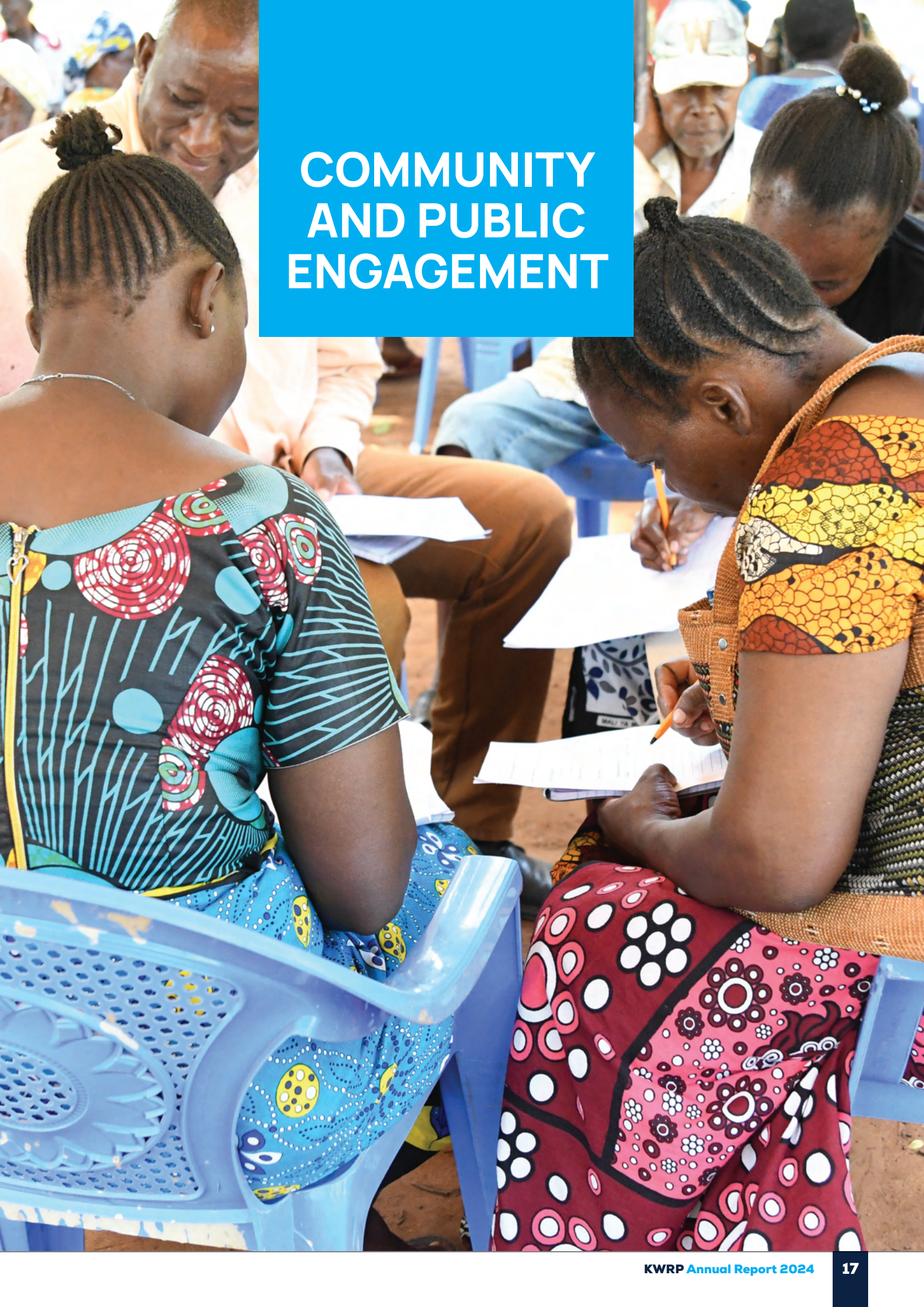


Our health system research aims to generate evidence to guide the development of equitable, efficient, quality, ethical, and responsive health systems. Our research on health system spans health economics, health policy and systems research, health services research, and empirical ethics. Our **Health economics research** seeks to address key health financing and policy changes in LMICs, including how LMICs can make sustainable progress towards Universal Health Coverage (UHC), while enhancing the equity and efficiency of health systems.

Our **health services research** is dedicated to strengthening health systems by enhancing the quality of paediatric and neonatal care in Kenyan public hospitals, undertaking research that aims to ensure that every child has access to high-quality healthcare services. Our **Health Policy and Systems Research** applies systems thinking approaches and complexity theories to examine how the governance, organization, functioning, and actor dynamics can promote responsive and resilient health systems. Our **empirical ethics research** seeks to understand how the ethics of research in LMICs could be strengthened and examine the responsibilities of research institutions in situations of increasing vulnerabilities and inequities.

New Grants and Projects

- 1 Four scientists received the Global Health Bioethics Network (GHBN) bursaries to explore ethical inquiries in their day-to-day work. These bursaries will fund work in the following areas i) Exploring the ethical responsibility of schools in prioritising adolescents' mental health ii) Developing a framework for the bioethical use of AI in health research in Africa and Asia iii) Synthesising key ethical issues emerging from COVID-19 research and response in Africa to inform pandemic preparedness, Understanding young people's perceptions of ethical issues around climate change and health in Kenya and Malawi.
- 2 We will examine funding sources, priorities, planning and accountability mechanisms, positive and perverse incentives, challenges, and gaps, all aimed at informing strategies for strengthening AMR containment financing at national and sub-national level in Kenya and Vietnam.
- 3 The Systems of Evidence to Improve Health in Africa (SEIHA) project aims to study and develop domestic evidence advisory systems informing health policymaking, through a comparative analysis of how these systems function and can be improved in four case study countries-kenya, Malawi, Rwanda, Uganda.
- 4 The ProtEqt Voice study aims to generate evidence and tools that inform and support the design and assessment of participatory mechanisms to achieve responsive and equitable primary health care (PHC).
- 5 The SHARP Study, aims to enhance the design and implementation of Health Benefit Packages (HBPs) across Africa, with a focus on Kenya and Rwanda.

A photograph showing a group of people, primarily women, sitting on blue plastic chairs outdoors. They are engaged in a community meeting or public engagement session. In the foreground, two women are seated, both wearing vibrant, patterned dresses. The woman on the left is seen from the back, wearing a black dress with colorful circular and vertical patterns. The woman on the right is wearing a yellow and orange patterned top and a red skirt with white and black circular patterns; she is leaning forward, writing on a piece of paper with an orange pen. Other people are visible in the background, some looking towards the camera and others looking down at papers. A blue banner with white text is overlaid on the upper part of the image.

COMMUNITY AND PUBLIC ENGAGEMENT



SHAPING GLOBAL STANDARDS IN COMMUNITY ENGAGEMENT

Through meaningful engagement, collaborative learning, and practical tools, our approach is proving that community involvement is vital to advancing equity and impact in global health research.

At the heart of our research programme lies a deep commitment to ethical, meaningful, and impactful community engagement. Over the years, the KEMRI-Wellcome Research Programme (KWRP) has not only developed robust local engagement strategies with communities and school-going children in coastal Kenya - but has also emerged as a global leader in shaping best practices in community and public involvement in health research.

Our efforts have garnered international recognition, including multiple Oxford Vice-Chancellor's Awards (2019 and 2022) for outstanding community engagement. These accolades reflect the creativity, depth, and integrity of our work in building respectful and reciprocal relationships with the communities we serve.

This reputation has led to KWRP being selected as a case study in the National Institute of Health Research (NIHR) Resource Guide for Community Engagement and Involvement in Global Health Research, highlighting our use of deliberative approaches to consult and engage communities around complex health research questions.

KWRP engagement staff have also been invited to shape global engagement policy and practice. Members of our team now sit on influential bodies such as the NIHR Public Advisory Group (PAG) and NIHR global health funding committees, where they review engagement and involvement strategies in grant applications and contribute to NIHR's evolving approach to meaningful public participation.

Importantly, KWRP has also helped shape training materials for researchers and practitioners globally, authoring and co-authoring key modules in NIHR's new online engagement resource, a practical toolkit designed to improve engagement quality across diverse settings.

This recognition has translated into real opportunities for capacity strengthening beyond our borders. Through the NIHR-funded IHCOR (Improving Hypertension Control in Rural Africa) project, we are building institutional capacity at the MRC Gambia Research Programme.



This south-to-south collaboration includes reciprocal learning visits, practical exchange of tools and strategies, and a commitment to shared learning through future reports and publications.

Through all of this, KWRP continues to demonstrate that high-quality community engagement is not only essential to ethical research, it is central to achieving global equity in health research practice.

Our impact is not only being felt locally in Kenya but is now helping to shape the future of community engagement across the globe.

ENGAGEMENT

Aims

Engagement at KEMRI-Wellcome is guided by four overarching goals: a) to build, sustain, and deepen respectful relationships and mutual learning, b) to support responsive, ethical, and mutually beneficial research, c) to contribute to regional and global thinking on engagement policy and practice, and d) to strengthen the translation of research findings into policy and practice. To deliver on these goals, a wide range of activities are implemented

by both researchers and dedicated engagement staff. These activities fall into two main categories: **programme-wide** and **study-specific** engagements. They span interactions with local communities and stakeholders (community engagement), the media, schools, universities, and the broader public (public engagement), as well as policy-makers and decision-makers (policy engagement) (see Figure x).

Key 2024 Highlights

KEMRI Community Representatives (KCRs) Network

A key approach we use to foster strong relationships with the community is through a network of Community Advisory Board (CAB) members. These members are elected representatives from the Kilifi Health and Demographic Surveillance System (KHDSS) area and serve terms of 3 to 4 years. Known as KEMRI Community Representatives (KCRs), they are ordinary community members who play a vital role in bridging researchers and the community. Over the past 19 years, nearly 1,300 KCRs have actively engaged with KEMRI-Wellcome's research activities, helping to ensure that community perspectives meaningfully inform the design, implementation, and dissemination of research. In 2024, we conducted the following activities:

KEMRI Community Engagement Activities in 2024



1

Election of new CAB members:

90 new KCRs members were elected and trained in a 5-day workshop. An average of 100 community members participated in each of the election meetings (over 40 election meetings).

2

Open Days: We carried out open days with engaged 41 County stakeholders, 120 religious leaders drawn from the KHDSS and 40 youth representatives. Open days provide an opportunity for community members and stakeholders to visit the KEMRI-Wellcome research facilities, engage with scientists, and appreciate the range of research that we do.

3

KEMRI-Wellcome 5-year Strategy Consultations:

we carried out 5 consultation workshops with 60 KCRs to solicit community views on research priorities that should inform our scientific strategy.

ENGAGEMENT

Key 2024 Highlights



School Engagement Programme

Our school and university engagement aims to partner with stakeholders to inspire interest in science and science-related careers among young people in Kenya. Highlights of the school's engagement programme are outlined in table 1. In 2024, a joint initiative between AHRI and KEMRI-Wellcome secured funding from SANTHE to implement a mobile laboratory project in local Kenyan schools. We also collaborated with Stanford University, USA on a mentorship programme which supported our school leavers' attachment scheme. We established a new partnership with the Kenya National Library Service to promote science engagement using our newly launched science inspiration book authored by Dr. Tabitha Mwangi and funded through our Wellcome Core Engagement grant. These partnerships and activities will continue into 2025, further expanding our reach and impact.

Outstanding activities in 2024



Book Launch

We launched a book titled the "12 Remarkable African Health Scientists" authored by Dr. Tabitha Mwangi. This initiative aimed at showcasing stories of achievements of African scientists to inspire secondary and university students on possible pathways to science.



Secondary School Science Symposium

We organized a symposium aimed at creating awareness of vaccines and antimicrobial resistance targeting secondary schools. 20 students and 43 teachers participated.



School Leavers Attachment Scheme (SLAS) and Mentorship Programme

12 brilliant high school leavers participated in a 3-month attachment at KEMRI-Wellcome Kilifi Campus. In addition, the team selected two SLAS students to attend the London International Youth Forum (LIYSF) supported by the collaboration with the Young Scientists for Africa (YOSA) and KEMRI-Wellcome.



Mobile Lab (Primary and Secondary Schools)

The SEP team introduced the mobile lab to 4 teachers and 41 secondary school students. The introduction aimed at creating awareness and enhancing interest in science among students through hands-on lab activities led by KEMRI researchers. The sessions were complemented with a virtual reality video of the KEMRI-Wellcome research labs.

ENGAGEMENT

Study engagement support

In 2024, the engagement team supported several study teams to plan and implement study specific engagement activities. Key examples are highlighted in table 2: To further support ethical conduct of research, the engagement team conducted a series of communication and consent training courses for multiple research studies.



Study	Activity(ies)
BOHEMIA study: assessing safety and efficacy of Ivermectin mass drug administration to control Malaria	Sensitization meetings in Kwale County with health managers, local community stakeholders and research participants
MIMBLE Study: a new proposal seeking funding from NIHR to test a locally made legume-based feed to treat severe malnutrition in children	To incorporate views from community members and reflect local issues in the proposal, 3 groups participated in consultative workshops: KCRs (n15), Community Health Promoters (n15) and hospital nutritionists (n5)
Shigella Human Infection Study: studying immunology of shigella infection in humans to facilitate rapid vaccine candidate identification	A series of engagement meetings were conducted with County and Hospital managers to pave way for the study to take place in the hospital – a first of this kind.

Table 1: Study engagement

Impact

Influencing Engagement Practice

In 2024, our engagement impacted engagement practice in the following ways:

- 1 We contributed to the development of an online Community Engagement course, commissioned by NIHR. The course, titled: **An Introduction and Practical Guide to Community Engagement and Involvement in Global Health Research** is now available on the MESH online community engagement platform.
- 2 Through NIHR collaborative projects, KEMRI-Wellcome is helping to develop the capacity of research institutions and researchers on developing and implementing meaningful engagement strategies and activities. For instance, as part of an NIHR funded research study that aims to develop community interventions for hypertension management, MCR-Gambia staff have visited and observed engagement activities at KEMRI-Wellcome. KEMRI-Wellcome staff have also visited MRC-Gambia and shared experiences on Community and Stakeholder engagement approaches.
- 3 We participated in several webinars organized by MESH that focused primarily on building an understanding of Community Engagement.



Monitoring and Evaluation

In 2024, the engagement team carried out a household survey (350 households) within the KHDSS in Kilifi to understand community members' perceptions about our engagement and research activities, to inform our engagement practice.

ENGAGEMENT

Policy Engagement



In 2024, we engaged with policy makers, health managers and implementors in multiple ways, and at different levels. At the county level, we carried out stakeholder engagements with 22 county health managers to set research priorities that will inform our next scientific strategy. At the national level, we conducted a national stakeholder forum with a total of 25 stakeholders drawn from the Ministry of Health, and development partners engaged on health research priorities. We published and disseminated 11 policy briefs to policy makers. In 2024, several researchers were appointed to policy advisory groups at the local, national and global level.



PEOPLE AND CAPABILITIES



JACOB KAZUNGU

Post-Doctoral Research Scientist, Health Economics
kjacob@kemri-welcome.org

ABOUT ME

1

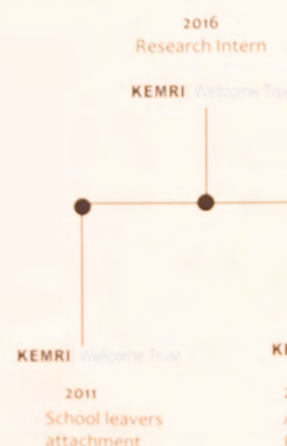
Post-Doctoral Research Scientist
I lead a range of research projects:
• Developing health systems
• Examining the impact of

2

Coordinator, AFHESG
• I coordinate the AFHESG
capacity across the region
• AFHESG organizes training
practitioners
• AFHESG has



Career Path



STRENGTHENING RESEARCH CAPACITY THROUGH STRATEGIC COLLABORATION WITH PWANI UNIVERSITY

Pwani University and KWRP has redefined what research collaboration can achieve. Over a decade, it has sparked groundbreaking science, built world-class infrastructure, and trained hundreds of future researchers.

When Pwani University (PU) received its charter in 2013, it marked the beginning of a transformative partnership with the KEMRI-Wellcome Research Programme (KWRP) - one that has become a model for institutional research capacity strengthening.

What began as modest teaching support and open invitations to KWRP seminars for PU faculty has evolved into a dynamic, multidimensional collaboration. Over the past decade, PU has appointed more than 20 KWRP researchers to academic positions, including adjunct roles and substantive appointments as associate and full professors. In parallel, several PU faculty members have taken up visiting researcher roles at KWRP, bridging academia and applied research.

The collaboration has since expanded to co-develop three academic programmes that respond to national and regional training needs: a Postgraduate Diploma in Health Research Methods, a Master's in Bioinformatics, and a Master's in Immunology.

These programmes have graduated over 200 students since 2015, with dozens more currently enrolled (3 PhD, 15 Master's, and 30 PGD students). Each year, KWRP hosts up to five PU undergraduate trainees for experiential learning placements,

helping to nurture the next generation of Kenyan scientists.

Short courses jointly delivered - including an "Introduction to Research" course, an R programming course, and the high-impact "Understanding Complex Health Systems" course for mid-level health managers - further reinforce capacity at multiple levels. KWRP and PU also co-host the annual [Africa Biology of Parasites \(AfriBoP\)](#) course, attracting PhD and postdoctoral scientists from across the continent. These educational programmes have significantly broadened PU's training portfolio and academic reach.

Crucially, this partnership is not limited to training. It has catalyzed world-class research conducted jointly by both institutions. A standout example is the series of Controlled Human Malaria Infection (CHMI) studies hosted at PU facilities and run by integrated teams of KWRP and PU scientists. These studies have delivered critical insights into malaria immunity and contributed to the global search for next-generation malaria vaccines.

Underpinning this progress is joint resource mobilization. The partnership has attracted major funding from the Wellcome through [The Developing Excellence in Leadership, Training and Science in Africa \(DELTA Africa\)](#) initiative, as well as from Kenya's National Research Fund. This has led to the establishment of the Pwani University Biomedical Research Centre (PUBReC), a state-of-the-art molecular biology lab, and semi-field entomology facilities - both now used in cutting-edge health, agricultural, and marine biology research.

While formal agreements have guided the partnership, its success rests on a deeper foundation: the mutual trust, vision, and sustained commitment of the leadership at both KWRP and Pwani University. Together, they are not only training the next generation of African researchers - they are shaping the future of research and innovation at the Kenyan coast.



PEOPLE AND CAPABILITIES

Research Capacity Development

Aims

A key priority for the KEMRI-Wellcome, is the development of the next generation of African research scientists. To achieve this, we have an elaborate capacity development initiative employs a comprehensive framework for attracting recent graduates to health research through graduate research, internship schemes, offering high-quality Masters and PhD training, and

post-doctoral support. Capacity development at the KEMRI-Wellcome is funded by a \$4.4 million DELTAS-Africa award from the Science for Africa Foundation, for the Initiative to Develop African Research Leaders (IDeAL) DELTAS programme. In addition, capacity development leverages funding from over 90 individual grants, and two other DELTAS Programme's (SSACAB and SANTHE), where KEMRI-Wellcome is a co-applicant.

Capacity Development highlights

In 2024, we awarded a total of 175 (92 female, 83 male) capacity development awards (table 4). To expand its capacity-development activities beyond Kenya, in 2024 IDeAL formally incorporated Centre for Infectious Diseases Research in Zambia (CIDRZ), Epicentre in Niger, and universities in both the UK and Kenya (University of Glasgow, Oxford University, Strathmore, and Pwani) as partners. This collaborative effort has successfully supported an additional 34 fellows (14 Master's, 12 PhDs, 2 career development year fellowships, and 4 postdoctoral researchers) across partner institutions.

Capacity development scheme	Female	Male	Total
School Leavers Attachment	7	5	12
Undergraduate attaches	10	9	19
Graduate Interns	3	4	7
Postgraduate Diploma	11	8	19
Masters Fellows	19	29	48
PhD Fellows	35	19	54
CDY Fellows	6	5	11
Postdoctoral Fellows	1	4	5
Total	92	83	175

Short Trainings

We delivered a range of trainings aimed at upskilling scientists with critical generic skills, and promoting capacity development in specific scientific areas. An introduction to research course, covering foundational research concepts and ethics was delivered for 30 post-graduate in health research students. This was followed by an R programming course with 30 students from KWRP and Pwani University. KWRP collaborated with the NIHR-funded IHCOR consortium to host Prof. Assan Jaye from the MRC Unit in Gambia for a Leadership and Grant writing course targeted at early career researchers. Additionally, Gender and Diversity training was conducted for staff and graduate students at Pwani University to emphasize inclusivity. The Programme co-hosted the African Biology of Parasites course (AfriBop) with Pwani University and the University of Glasgow that attracted 25 participants from across Africa.



PEOPLE AND CAPABILITIES

Enhancing capacity in vaccinology in Africa

In 2024, we conducted 8 webinars in vaccinology, aimed at early career researchers, in which we provide basic concepts in various topics of the vaccines ecosystem and signpost participants to potential career options. The webinars are conducted in English or French. As of December 2024, we had 500 webinar attendees with the proportion of female participants ranging between 36-43% per webinar. In addition, we have initiated a highly popular apprenticeship scheme in which we competitively recruit talented African scientists and place them at vaccine manufacturing entities globally to acquire skills in biomanufacturing activities. We have so far recruited 18 African apprentices (of whom 8 are female). In 2024, we recruited 5 African apprentices (of whom 1 was a lady partially funded by her country's National Biotechnology Authority) who were placed at Hilleman Laboratories in Singapore for a period of 12 months to get a 360-degree experience and training in vaccine research, development, manufacture and an in-depth hands-on exposure to various elements of vaccine R&D and manufacture

based on current projects at Hilleman. The apprentices were from Ethiopia, Cameroon, Kenya, Tanzania and Zimbabwe. We also had 2 researchers from the KEMRI-Wellcome Research Programme on a short apprenticeship at Serum Institute of India Pvt. Ltd (SIPL) in June for 4 weeks.

We held the Vaccinology in Africa masters'-level course in April & May 2024 in partnership with the Jenner Institute at the University of Oxford and the University of Nairobi with the objective of providing a comprehensive understanding of the fundamental principles underlying vaccinology, including immunology, clinical trials, vaccine development, and vaccine regulatory strategies. We had 37 participants (of whom 14 were female) drawn from 19 African countries and, were either students or researchers drawn from academia, research, regulatory, public health and manufacturing, and vaccine expanded programme of immunization sectors. The course was taught by an exceptional African and international faculty from academia and vaccine industry.



Enhancing health economics capacity in Africa



In 2024, the Africa Health Economics Study Group (AfHESG), a peer-learning platform designed to build the skills of young health economists, successfully conducted 11 hybrid health economics training sessions, reaching 3,320 participants across 48 countries, including 32 in Africa, 6 in Europe, and 10 in Asia, Australia, and the USA.

PEOPLE AND CAPABILITIES

Continuous Professional Development

We implement a continuous professional development (CPD) initiative aimed at building the capacity of all staff—both scientific and non-scientific. The programme supports ongoing skills enhancement for staff directly involved in research as well as those providing essential managerial and logistical support. The goal is to ensure all staff maintain up-to-date competencies to perform their roles effectively while also advancing their professional growth. Table 5 presents the number of CPD trainings supported by department in 2025.

Section	Department	No of CPD trainings 2024
Operations	Facilities and Transport	5
Operations	Finance	5
Operations	Health and Safety	3
Operations	Human Resources	17
Operations	Information Technology	19
Operations	Nairobi Operations	4
Operations	COO office	1
Director's Office	Director's Office	2
Clinical	Clinical Services	29
Laboratory	Bioscience	16
Epidemiology and demography	Epidemiology and demography	5
Health Systems Research and Ethics	Health Systems Research and Ethics	2
Nairobi Program	Nairobi Program	4
Programme wide trainings	All Departments	1
Total		127

Table 3: CPD trainings by department in 2024

2025 Plans



In 2025, the Programme will prioritize its capacity development efforts to enhance transition to independence for early postdoctoral researcher and managing the geographic and scientific expansion of our capacity development initiative.

RESEARCH ENVIRONMENT



FROM HIGH SCHOOL ATTACHEE TO POSTDOCTORAL RESEARCHER

Jacob Kazungu's journey reflects the power of sustained investment in local talent. Nurtured by KWRP from high school attachment to postdoctoral leadership, Jacob's story proves that when institutions commit for the long haul, they don't just build careers, they shape the future of African science and policy.



For over three decades, KEMRI-Wellcome has invested in the long-term development of African scientists, creating pathways for local talent to thrive. The story of Dr. Jacob Kazungu exemplifies the value and impact of a long-term horizon to research capacity development. Jacob Kazungu's journey with KWRP began in 2011 when, fresh out of high school, he was selected as one of just nine students from Kilifi County to participate in our post-secondary school leavers attachment scheme (SLAS) - a key component of KWRP's school engagement programme. For three months, Jacob was immersed in the diverse world of research, mentored by experienced professionals and exposed to clinical, laboratory, demographic, and social science research. For a student who had never used a computer or met a researcher before, the experience was transformative. *"It was the first time I used a computer. I created my first email and Facebook account - and I realised research was more than just lab coats and microscopes,"* Kazungu reflects.

That early exposure sparked a lifelong passion. Jacob went on to join Karatina university in Kenya, and by his final year, he was actively seeking opportunities to return to KWRP. Through IDEAL, KWRP's capacity building platform, Jacob secured a place in the research internship scheme in 2016, completed a research diploma, and published his first scientific paper - a milestone he credits to determined mentorship and guidance. *"It took me over four months to write the paper, considering this was my first paper, there were lots of reviews from my supervisor to work on, and just learning how to write,"* he reflects.

In 2017, Jacob was appointed an assistant research officer in the KWRP Health Economics Research Unit (HERU) in Nairobi. He quickly excelled - leading data analysis, supporting health financing studies,

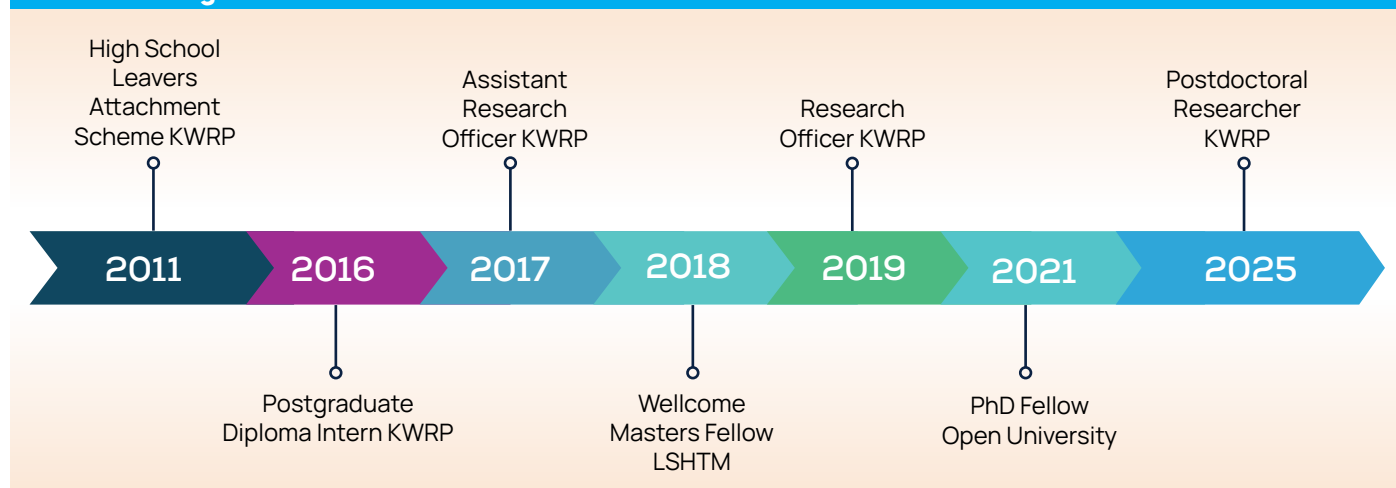
and engaging with national policy reforms. A year later (2018), he won a Wellcome Master's Fellowship to study Health Economics at the London School of Hygiene and Tropical Medicine in the UK. Upon returning, he implemented his fellowship research in collaboration with Kenya's Ministry of Health, contributing to the development of national health strategies.

Encouraged and mentored by senior researchers Jacob progressed to complete a PhD in Health Economics at the Open University, UK. *"I am the first person in my extended family to ever get a PhD,"* Jacob reflects. *"I could not have done this without the unwavering support and mentorship from senior colleagues at KWRP, particularly Dr. Alun Davies, Prof. Ifedayo Adetifa, Prof. Sam Kinyanjui, and Prof. Edwine Barasa,"* says Kazungu.

Now a postdoctoral researcher in health economics at KWRP, Jacob coordinates the Africa Health Economics Study Group (AfHESG), a peer-learning platform that has trained over 4,000 participants across 48 countries. As a post-doctoral research scientist, he is working on multiple research projects funded by Wellcome, NIHR, and CEPI, all focused on advancing health policy and decision-making across Africa. Jacob has aspirations of becoming an independent researcher and mentor. His vision is clear: to support the next generation of African researchers and contribute to evidence-informed health reforms in low- and middle-income countries.

Jacob's story is one of many - but it powerfully illustrates what is possible when institutions commit to long-term, structured, and intentional capacity development. From a high school attachee to a postdoctoral health economist and leader, Jacob Kazungu embodies the transformative impact of KWRP's investment in people.

Jacob Kazungu Career timeline





RESEARCH ENVIRONMENT

We are deliberate about fostering a research environment that prioritizes diversity, equity, inclusion, and staff wellbeing. Our commitment is reflected in a diverse workforce. In 2024, we introduced two new policies to further strengthen our research environment.

The Gender, Diversity, Equity and Inclusion policy, that aims to create a fair, inclusive, and supportive environment that values and promotes equal opportunities for all individuals,

regardless of gender, ethnicity, background, or role within KEMRI-Wellcome.

We track gender representation in studentships, and publications as a marker of equitable access to career development and leadership opportunities. As shown in Figure 2, we are steadily progressing toward gender equity in these domains.

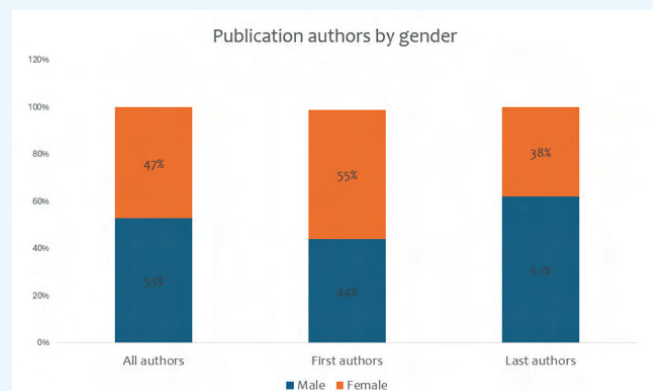
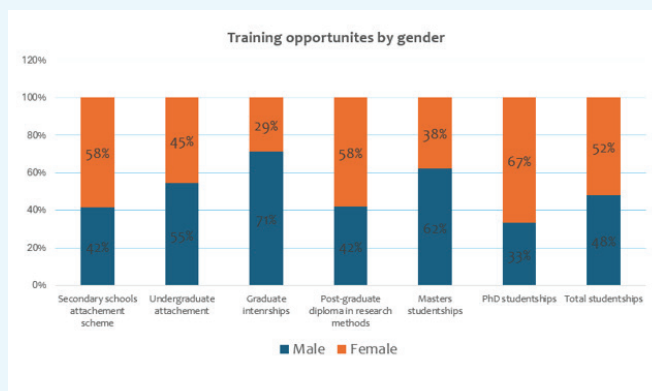


Figure 2: Gender balance in studentships and publications

RESEARCH ENVIRONMENT

We actively track grant holding by local researchers as part of our commitment to strengthening African research leadership and building sustainable local capacity. Figure 3 illustrates a strong upward trend in the proportion of grants led by global south researchers at the Programme—reflecting significant progress in shifting research leadership to the continent.

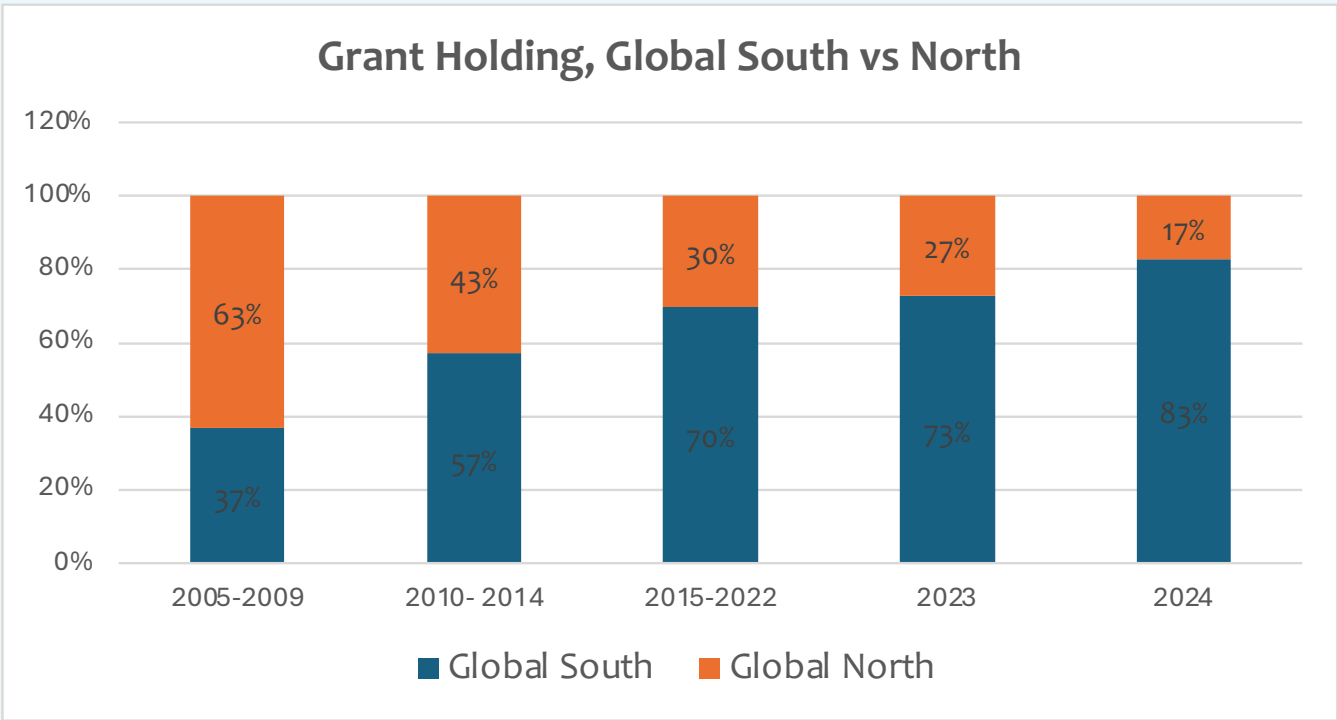


Figure 3: Trends in share of grant holding by LMIC researchers at KWRP

We continue to support staff wellbeing by supporting staff physical, social and emotional, and economic well-being. A highlight for 2024 was the introduction of a staff mental health policy that aims to promote a supportive work environment that prioritises psychological wellbeing, reduces stigma around mental health, and ensures access to appropriate resources and support services for all staff.



STRATEGIC FINANCE SUMMARY

The Programme is funded through a Wellcome Core grant that supports core operational and scientific platforms, Wellcome research grants awarded to individual PIs, and grants from other (non-Wellcome) funders awarded to individual PIs. In 2024, income from the Wellcome Core grant contributed 33% of the total Programme income, with income from research grants from both Wellcome and other 3rd party funders contributing 67% of total annual income. Figure 4 displays the contribution of different funding sources to total Programme expenditure in GBP.

Expenditure 2023-2024

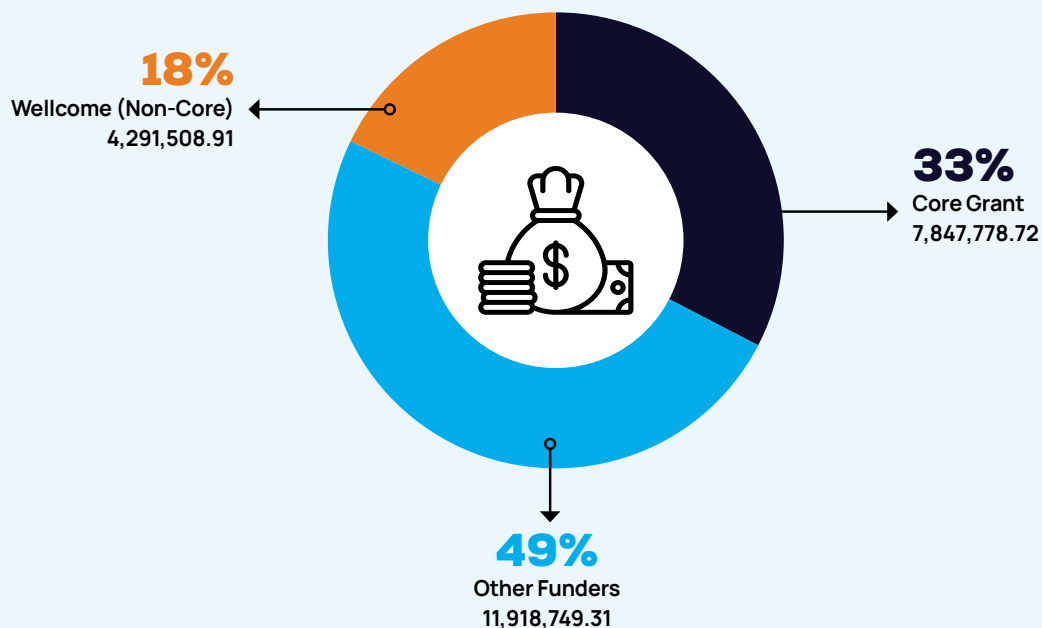
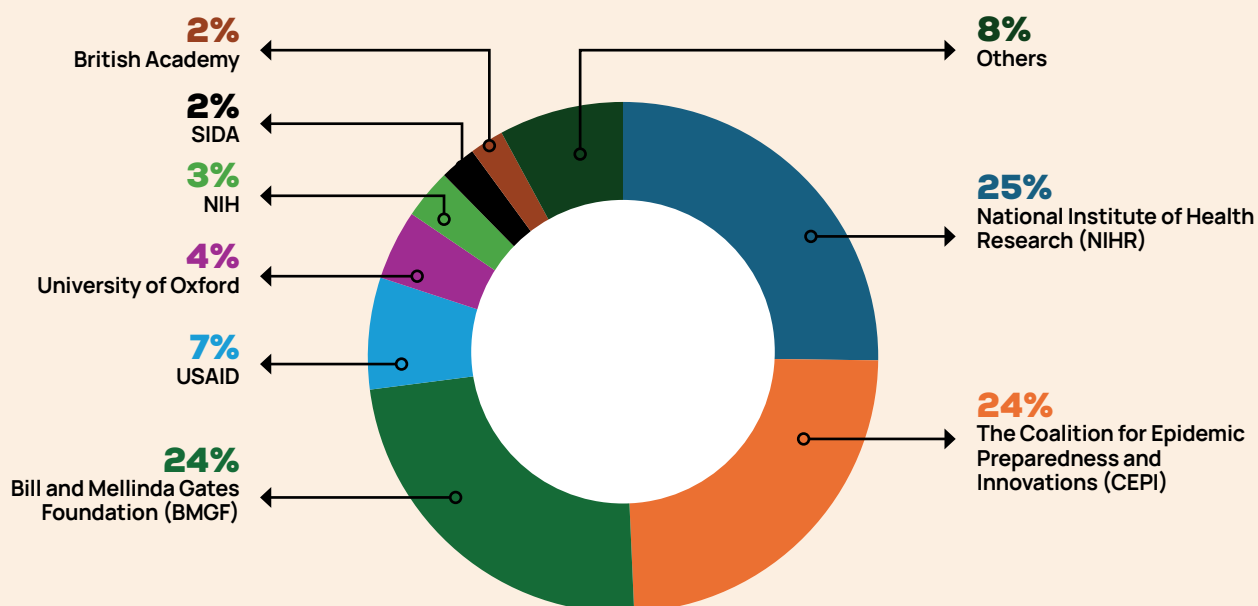


Figure 4: Annual expenditure by source in GBP in 2024

grant awards by non-Wellcome funders in 2024

Major non-Wellcome funders of programme research includes the National Institute of Health Research (NIHR), the Coalition for Epidemic Preparedness and Innovations (CEPI), and the Bill and Mellinda Gates Foundation (BMGF). Figure 4 outlines the share of research funding secured in 2024 by funder.

Figure 5: Share of grant awards by non-Wellcome funders in 2024



KWRP RESEARCH IMPACT



IMPACT

RESEARCH IMPACT

Our research in 2024 led to several important scientific discoveries that deepen understanding of disease mechanisms and inform new approaches to prevention and treatment:

- In collaboration with the GSK Vaccines Institute for Global Health, we assessed anti-Shigella antibodies and proposed 6 to 9 months of age as the optimal window for infant Shigella vaccination, offering protection during the second year of life when exposure risk significantly increases.
- We demonstrated that plasma extracellular vesicles can provide critical insights into biological processes in otherwise inaccessible organs such as the brain, representing a significant step forward in understanding the pathophysiology of cerebral malaria and offering a novel tool for disease investigation.
- Reanalysis of published cerebrospinal fluid proteomic data from children with cerebral malaria and acute bacterial meningitis revealed a potential association between cerebral malaria and APOE-mediated amyloidosis, a previously unexplored pathological mechanism.
- We identified a new variant of the malaria antigen PfEMP1, which plays a key role in the adhesion of parasite-infected erythrocytes to healthy cells, an interaction closely associated with the virulence of the malaria parasite.
- We found that emerging COVID-19 variants, including FY.4 and JN.1, demonstrate reduced sensitivity to immunity acquired through prior infection or vaccination, highlighting the evolving immune escape profile of SARS-CoV-2.
- In Western Kenya, we identified three WHO-validated K13 artemisinin resistance mutations - C469Y, P553L, and A675V, which may have significant implications for antimalarial treatment efficacy in the region.
- Our research showed that full-length MSP1 is a major target of protective immunity following controlled human malaria infection, and that the breadth of Fc-mediated effector function is correlated with clinical immunity in human malaria challenge models.
- We demonstrated the effectiveness of Oxford Nanopore Technologies (ONT) for malaria drug resistance surveillance in antenatal care (ANC) populations in Nigeria, supporting its utility in routine monitoring systems.
- In children with severe malnutrition (SM) and HIV, we found that HIV indirectly affects post-discharge growth by influencing baseline nutritional status and modulating proteins involved in bone mineralisation and humoral immunity. These findings shed light on biological pathways linking HIV to impaired growth and offer opportunities for targeted interventions.
- We showed that both hydroxychloroquine and chloroquine were safe and well tolerated as chemoprevention agents for COVID-19, with evidence of moderate protective benefit.



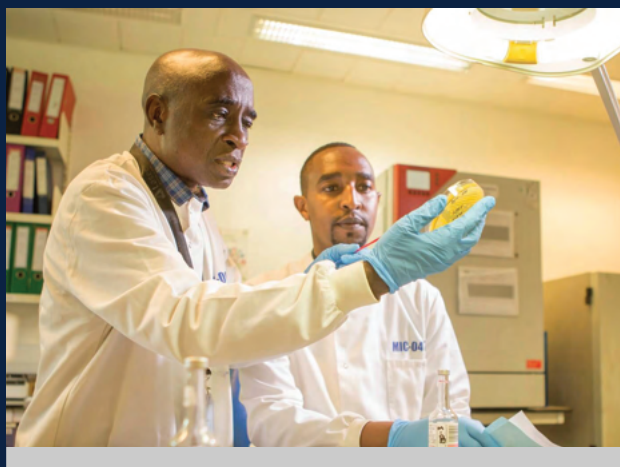


IMPACT

POLICY IMPACT

In 2024, our research directly informed national, regional, and global health policies, contributing to outbreak response, shaping disease control strategies, and strengthening evidence-based decision-making across multiple health domains.

- We supported the Kenya Ministry of Health in responding to the red-eye disease outbreak along the Kenyan coast. Using metagenomic sequencing, we identified the Coxsackievirus A24 variant as the causative pathogen.
- Our findings on insecticide resistance in all major malaria vectors were shared with county malaria coordinators and the Kenya National Malaria Control Program (NMCP). This led to a policy shift in Coastal Kenya's bed net strategy, changing from pyrethroid-only nets to combination nets treated with pyrethroid and piperonyl butoxide (PBO).
- We contributed technical input to the development of multiple first-line malaria treatment policies under the Kenya National Malaria Control Program.
- We were part of the technical team that contributed to the development of guidelines and an action plan for *Anopheles stephensi*, led by the Kenya NMCP.
- Findings from the Phase 3 trial on the safety and efficacy of the R21/Matrix-M™ malaria vaccine, to which we contributed, informed the WHO prequalification of the vaccine and its licensure in multiple African countries, including Kenya.
- Evidence from our fractional Yellow Fever (YF) vaccine dosing trials informed the WHO's updated guidelines, which now include fractional dosing as a tool for managing YF outbreaks. Results from the trial also support the expansion of the global YF vaccine stock, with potential implications for vaccine manufacturing.
- Through collaboration with the Kenya Psychiatric Association, we supported a petition to the High Court to repeal Section 226 of the Penal Code, which criminalized suicide. The successful repeal marked a major legal and public health milestone for mental health reform in Kenya.
- Our researchers contributed to the development of new WHO guidelines for the management of pneumonia and diarrhea in children up to 10 years of age, reflecting the importance of our ongoing research in addressing childhood mortality.
- We also played a key role in supporting the Africa CDC in the development of a regional, evidence-informed priority-setting framework for healthcare decision-making.
- We contributed to the development of the Kenya health facility improvement fund implementation guidelines.



PARTNERS

