Department of Health & Social Care

Global Health Research Units Annual Review - 2022

Published 2024

NIHR Global Health Research Portfolio

Contents

Annual reporting and review process

This activity has been supported by the UK aid budget (Official Development Assistance, ODA) as part of the Department of Health and Social Care (DHSC) Global Health Research (GHR) portfolio.

The Annual Reporting and Annual Review templates are part of a continuous process of monitoring, review and improvement within NIHR's Global Health Research portfolio. These are an opportunity for DHSC and partners responsible for delivering a funding scheme to reflect critically on the performance and ongoing relevance of awards.

The main sections of the template have been developed in accordance with cross-funder common reporting practice and will be used to provide accountability for the use of public money, meet Official Development Assistance transparency and compliance requirements. The template has three main components:

- Section 1 captures DHSC's and the Delivery Partner's overall assessment of funding scheme performance over the last 12 months.

- Sections 2-3 focus on monitoring progress of awards against planned activities, outputs and outcomes (in accordance with the portfolio Theory of Change and results framework).

- Sections 4-7 focus on the delivery partner's management of value for money, risk, financial reporting, monitoring, evaluation and learning updates.

The process for completing this template involves the following steps:

1. Delivery partners ensure that the relevant monitoring information is collected at the award level (as set out in the NIHR Global Health Research results framework). This information will be collected using existing reporting mechanisms wherever possible, before bespoke reporting is considered.

2. Delivery partners collate a synthesis of the award level monitoring information and present aggregated funding scheme level findings (and award level wherever specified) within this template. This report is then shared with DHSC for comment and feedback.

3. DHSC will then use the annual report and additional information gathered through meetings, field visits and any other documentation to complete the annual review template - relevant sections are highlighted with green boxes. This will include an assessment of overall funding scheme performance over the last 12 months, identify lessons learnt, time-bound recommendations for action consistent with key findings and will be used as an evidence base for future funding decisions. Please write this summary with a public audience in mind, assuming no prior knowledge of the funding scheme.

4. Annual review signed off and published.

1. Programme Summary and overview

1.1 Description of the funding schemes aims and activities

The NIHR Global Health Research Units programme funds applied health research to address locally identified challenges in low- and middle- income countries (LMICs), by supporting equitable research partnerships between researchers and institutions in the UK and those in LMICs eligible to receive Official Development Assistance (ODA).

The Global Health Research Units programme provides funding to support not only delivery of research that will improve health outcomes for people living in LMICs, but also to strengthen crucial research capability and capacity in resource-poor settings, in particular training and capacity building in both academic research and programme support functions.

Global Health Research Unit funding is awarded to partnerships that have an existing track record of delivering internationally recognised applied global health research and wish to consolidate and expand this work. Each Unit receives funding of up to £7 million over 5 years.

To date the programme has held two funding calls. This report specifically focuses on a total of 17 Units funded through Call 1 (13 awards) and Call 2 Phase 1 (4 awards), from September 2020 to September 2022. This reporting period covers Years 4-5 of Call 1 Units and Year 1 of Call 2 Phase 1 Units.

1.2 Summary of funding scheme performance over the last 12 months (general progress on activities, early outputs, outcomes, impacts across all awards)

Of the 17 Units assessed during this reporting period, NETSCC reported 16 to be delivering on time and on target. One Call 1 Unit was rated amber due to concerns about whether all planned deliverables would be completed within the extension period, while the rest successfully finalised their research activities, analysis and in-award dissemination. All four Call 2 Phase 1 Units successfully completed their first year of activities, included setting up collaboration agreements, recruiting research and support staff, onboarding trainees, and preparing for fieldwork and/or clinical research.

The number of high-quality research outputs significantly increased throughout the reporting period, reflecting the emerging findings of Call 1 Units as they entered their final stages. Three important policy and practice relevant outputs from the GHR Unit on Global Surgery were developed into NIHR Evidence alerts, including a new COVID-19 risk prediction tool, evidence that better cancer care after surgery improves outcomes, and that expensive antiseptics and sutures do not reduce surgical site infection.

There are numerous examples of Call 1 Units influencing policy and practice at regional, national and international levels, in line with expectations set by the GHR portfolio Theory of Change. For example, the RESPIRE Unit's research has led to the inclusion of pulse oximetry in national child health policy and guidelines in India and Bangladesh, while in Sierra Leone and Nigeria, the Ministries of Health have adopted recommendations developed by the RUFH Unit to strengthen the prevention and management of non-communicable diseases in primary care. On an international level, the TIBA Unit co-developed the Health Research for Innovation Strategy for Africa 2020-2030, which has helped guide African countries on priorities for agenda setting in health research and innovation. It is expected that for Call 2 Units, influence on policy and community outcomes will continue to develop over time.

All Units have effectively engaged and involved local communities in their research, often in new and innovative ways. The majority of Call 1 Units specifically reported identifying and including 'at-risk' or vulnerable groups, for example individuals with lived experience of surgical site infections, marginalised women from disadvantaged communities, and hard to reach tribal groups. Many Units adapted their approaches to ensure their methods and interventions were relevant to local contexts, and highlighted how this helped support community uptake and behaviour change.

There is rich evidence of Units helping to strengthen research capacity LMICs, with many Units favouring the use of sustainable capacity building approaches such as 'train the trainer'-type methods and South-to-South learning and support networks. For example, the Global Surgery Unit's team in Ghana supported the development of a new Data Centre in Nigeria, and established links with the team in India to create a network for local data innovation and training. Across all Units, the vast majority of non-academic support posts have been employed in LMIC institutions, helping to strengthen the wider LMIC research ecosystem and reflecting the LMIC-orientated focus of Units' research activities, data collection and fieldwork.

1.3 Delivery Partner and DHSC to summarise action taken against key recommendations from previous annual reviews over the last 12 months.

Recommendation	Owner	Timeline	Action taken
Explore through the Assurance Working Group how best to conduct virtual assurance visits and share learning	NETSCC	July 2021	**Ongoing:** No virtual assurance visits were conducted during the pandemic due to reduced research activity and capacity at LMIC institutions. A combination of in-person and remote assurance activities are now planned and the Assurance Working Group is taking this forwards.
Continue to monitor the impact of COVID-19 on this cohort through quarterly QSTOX and regular monitoring and report findings to DHSC; work with DHSC to focus and streamline the data collection to meet key priorities and minimise reporting burden	NETSCC	Ongoing	**Complete:** NETSCC used Covid Update Notes to regularly report delays and other impacts of COVID-19 to DHSC.
Work with project teams to support institutional adoption of transparency reporting requirements and incorporate new IATI clauses into new contracts. Work with DHSC to support improved guidance on reporting in line with FCDO	NETSCC	Ongoing through new contract variations, and adoption of new ODA contracts for awards under Call 2 Units and Call 3 Groups from 2021	**Complete**: Contract variations are all complete. All 13 Call 1 Units and all four Call 2 Phase 1 Units have registered with IATI in compliance with this requirement. **Ongoing:** NIHR continue to work with teams to support institutional adoption of the reporting requirements within the lifetime of the awards. NETSCC direct award holders to new DHSC IATI reporting guidance to support institutional compliance and report to DHSC quarterly on all portfolio award data.

Recommendation	Owner	Timeline	Action taken
Share transferable learning from After Action Reviews within a central repository accessible to all delivery partners managing NIHR GHR programmes to inform consistency and quality improvement	All	Ongoing	**Complete:** There is now a central repository for all After Action Reviews which all Coordinating Centres can access.
Work with staff, with award holders and with other delivery partners managing NIHR GHR programmes to improve awareness of the Safeguarding policy and requirements and processes for safeguarding and fraud incident reporting for delivery partners and award holders (contractors).	NETSCC	Ongoing	**Complete:** All policies and processes regarding safeguarding and fraud incident reporting are now in place. These are communicated to award holders at multiple points throughout the award life cycle.

1.4 Performance of delivery partners.

The beginning of this reporting period saw significant numbers of change to programme and variation to contract requests as projects continued to deal with the impact of COVID-19 on project plans and timelines. Throughout this, NETSCC have been responsive in providing additional information and analysis to DHSC where needed and have been flexible in accommodating changes in an effort to make the process smoother.

NETSCC have also been helpful in connecting DHSC colleagues with Units for in-country visits, and keeping DHSC up to date on any relevant virtual meetings, as well as accompanying DHSC on an assurance visit to Kenya.

NETSCC continue to monitor projects closely and remain in regular communication with Units, providing timely updates to DHSC on any issues as they arise, and logging these diligently on Programme Management Meeting trackers ahead of quarterly catch ups with DHSC. NETSCC have been accommodating of the governance changes in the Global Health Research Portfolio towards the end of this reporting period, with the arrival of the

GHR Programme Director, and have been working closely with DHSC colleagues to establish new ways of working.

1.5 What are the key lessons identified over the past year for wider DHSC/NIHR global health research?

1. Clear guidance and flexibility for award-holders is key: During COVID-19, there were high-levels of uncertainty and guidance regarding changes to work programmes and no-cost extensions were frequently changing. NIHR has since improved its process for awarding no-cost extensions, including the provision of clearer guidance for award holders. More recently, NIHR worked with research teams who identified issues where they could not request costs to support LMIC researchers involved in dissemination activities after the end of award. Recognising this challenge in LMIC contexts, NIHR agreed a more flexible approach which ensured these costs could be covered. This flexibility has been welcomed by award holders.

2. Improved procedures for financial reporting are working well: Since 2022, NIHR has revised its procedures for financial reporting, requesting transaction lines and invoices quarterly rather than at the point of reconciliation at the end of the award. This reduces administrative burden by spreading the effort across the lifetime of the award, allows for full interrogation of budget and spend data to support assessment of value for money, and helps simplify final reconciliations at the end of the contract.

3. Cross-award networking and learning opportunities could be strengthened: NIHR has supported the development and coordination of thematic networks between awards within the Units portfolio, helping to increase information sharing and collaboration. However, there is demand from award-holders for more cross-award networking and collaboration, including more facilitation from NIHR. Opportunities to further improve networking, training, and sharing of available resources, for example through the NIHR Learn platform, should continue to be explored.

4. A phased commissioning approach brought unexpected challenges: Units Call 2 was split into two phases due to the impact of COVID-19 on research teams and their ability to apply to the call. This phasing led to unintended delays and complexities during the selection process, including a need to hold over a proportion of decisions to ensure equity to all those applying in Phase 2. As a result, NIHR recommend that this approach is not repeated for future calls.

1.6 Key recommendations/actions for the year ahead, with ownership and timelines for action.

Recommendation	Owner	Timeline
Work with project teams to support institutional adoption of transparency reporting requirements.	NETSCC	Ongoing
Explore through the Assurance Working Group how to best combine in-person and remote assurance visits for maximum efficiency and effectiveness.	NETSCC	Ongoing
Increase number of cross-award networking and collaboration opportunities for award holders, for example through events, webinars, and virtual platforms such as NIHR Learn.	NETSCC	2023 - 2024

Acronyms and Abbreviation Definitions

AHPSR	Alliance for Health Policy and Systems Research
CEI	Community engagement and involvement
COVID-19	Coronavirus disease
DHSC	Department of Health and Social Care, UK
FCDO	Foreign, Commonwealth and Development Office
FTE	Full time equivalent
GBP	Great British Pounds
GFGP	Good Financial Grant Practice
GHR	Global Health Research
HIC	High income country
HIV	Human immunodeficiency virus
HPSR	Health Policy and Systems Research
HSG	Health Systems Global
HSRUK	Health Services Research UK
IATI	International Aid Transparency Initiative
IT	Information technology
LMIC	Low- and middle-income country
MIS	Management information system
NCD	Non-communicable disease
NEST360	New-born Essential Solutions and Technologies alliance
NGO	Non-governmental organisation
NIHR	National Institute for Health Research
ODA	Official Development Assistance
RAG	Red/amber/green rating
ToC	Theory of Change
UHC	Universal health coverage
UK	United Kingdom

2. Summary of aims and activities

The Global Health Research Units (GHRU) programme funds research to address locally identified challenges in low- and middle- income countries (LMICs), by supporting equitable research partnerships between researchers and institutions in the UK and those in LMICs eligible to receive Official Development Assistance (ODA).

The GHRU programme provides funding to support not only delivery of research that will improve health outcomes for people living in LMICs, but also to strengthen crucial research capability and capacity in resource-poor settings, in particular training and capacity building in both academic research and programme support functions. GHRUs are defined as a well-established research partnership or network of universities and research institutes in LMICs and the UK:

- with an existing track record of delivering internationally recognised applied global health research addressing unmet health needs in ODA-eligible countries
- who wish to consolidate and expand this work, supporting and developing thematic research and capacity strengthening networks, through regional and global hubs
- who will deliver a large scale, ambitious programme of applied health research through a range of trials and studies
- who are able to leverage the strength of the existing partnership consortium to improve practice and inform policy based on scientific evidence
- who will set up and deliver a substantial and sustainable programme of capacity and capability strengthening at individual and institutional level.

GHRUs receive funding of up to £7m for 5 years. NIHR have moved from reporting on individual calls to combining annual reports to include all awards active in a scheme within the reporting period. This report focusses on a total of 17 awards funded through Call 1 (reporting period September 2020 to September 2022) and Call 2 Units (July 2021 to September 2022). Call 1 Units were funded in 2016, originally for 4 years which extended to a maximum of 5 years via costed extensions for new work approved in 2020 and/or

additional no-cost extensions granted between 2021-2022. The Call 1 Unit contracts finally ended between 30 June 2021 and 30 September 2022. Given a range of extensions and varying end dates, interim reporting was employed to track progress until the final report was provided. As such, the data report for 13 Call 1 Units Year 4 has been included in this report. As a result, this report focusses on awards' progress during the last two years of Call 1 Units, based on data from routine and interim report monitoring in Years 4 and 5, as well as End of Award reports.

In 2021/2022 NIHR approved funding for Call 2 Units awards in two phases to allow greater flexibility for award holders impacted by COVID-19 delays to apply for funding. This report also includes data on the four Call 2 Units awards funded in Phase 1 2021, which completed their first year of activity between July 2021 and September 2022. Data on Phase 2 awards funded in 2022 will be included in the next report.

More information about the GHRU programme and each call can be found on the NIHR website and information about individual awards can be found on NIHR Funding and Awards. The content of this report is based on the analysis of evidence from annual reports and end of award reports, as well as supporting information provided by award holders. For the full list of contracted Units, please refer to Annex A.

2.1 Delivery partner's assessment of progress against milestones/deliverables

In the reporting period September 2020 to September 2022, all thirteen Call 1 Units finalised research activities, analysis, and in-award dissemination. All four Call 2 Units funded in Phase 1 have completed the first year of their activities. Year 1 activities included setting up collaboration agreements, recruiting research and support staff, onboarding trainees, and preparing for fieldwork and/or clinical research. Section three of this report summarises the outcomes from all Units' activities with regard to research outputs, research capacity-strengthening, and equitable research partnerships. More information about award activities can be found on individual Units' websites and the NIHR website, as referenced throughout this report.

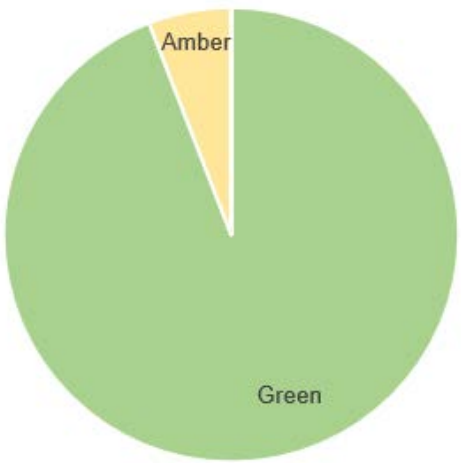
NIHR use a Red-Amber-Green traffic light system to assess whether the awards are delivering on time and target. The delivery risk categories are defined as follows:

RAG	Delivery
RED	Significant risks to progress/funded outcomes, urgent mitigation required
AMBER	Some risks to progress/funded outcomes, mitigation required
GREEN	No unmitigated risks to progress/funded outcomes

Risk to progress/funded outcomes is defined as any combination of factors that is likely to affect the programme of work, i.e., the research is likely not to be delivered or not delivered as agreed at point of funding. This could have implications for the duration of the contract, the funding amount, or both.

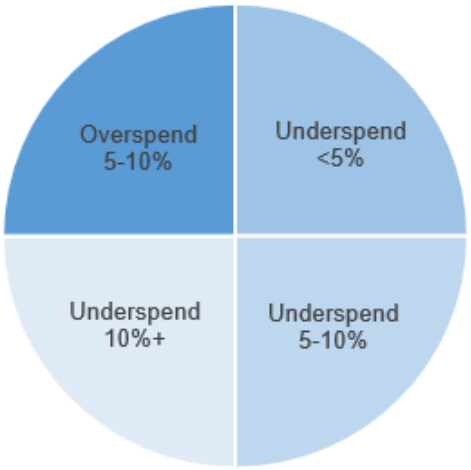
Figure 1 below shows the distribution of overall delivery risk across the GHRU portfolio, including underspend values across active awards (based on quarterly financial reporting and forecasting). Only one Call 1 Unit was rated amber at the time of completion due to concerns on whether all planned deliverables would be completed within the extension period. The relevant NIHR programme manager is following up on end of award report queries. All Call 2 Units funded in Phase 1 are rated green for delivery. Section 5 describes the top five portfolio risks and Section 6 contains more detail on financial performance of all awards including the underspend across Call 1 Units at the end of the awards.

Figure 1: Global Health Research Units dashboard



RAG Distribution	*No. Projects:*	*17*
Green	16	94%
Amber	1	6%
Red	0	0%

Based on the RAG rating at the end of contracts for Call 1 Units, and as of 5 May 2023 for Call 2 Phase 1 Units



Over/Underspend	*No. Projects:*	*4*
Underspend <5%	1	25%
Underspend 5-10%	1	25%
Underspend 10%+	1	25%
Overspend 5-10%	1	25%

Call 2 Phase 1 Units only, as of 15 February 2023

2.2 Delivery partner's assessment of how individuals/communities (including any relevant sub-groups) have been engaged and of the extent to which award holders have changed their plans to reflect individuals/communities needs when identifying research priorities, design/planning, implementation, analysis, and reporting and dissemination

Inclusion

All Call 1 Units (except for two GHRUs focussed primarily on laboratory research) specifically reported identification and inclusion of vulnerable or at-risk groups in their research through community engagement activities. For example, the GHRU on Global Surgery identified specific community populations with lived experience of surgical site infections, inguinal hernia, and cancer surgery, including those with limited access to surgery. Community Engagement and Involvement (CEI) activities they conducted also identified stakeholders that would be particularly impacted by the results of the research. These included surgeons in under resourced rural hospitals, community health workers, village chiefs and elders.

The GHRU on Global Diabetes Outcomes Research used CEI to identify populations with diabetes and within these those most 'at risk', or vulnerable and hard to reach within rural villages in southeast India, Afghanistan, Ethiopia, and Nigeria. Another Unit working on Type 2 diabetes and cardiovascular disease in South Asia identified and engaged communities in Bangladesh to increase the inclusion of the vulnerable 'Santal' and 'Poshchima upazati'

tribal groups in their research aiming to understand the reasons underlying the high rates of these two conditions.

The GHRU on Mucosal Pathogens (MPRU), working across Malawi, Kenya, Mali, Gambia, and South Africa, identified the following vulnerable and/or at-risk populations through community engagement: people living with HIV; people living with co-morbidities such as diabetes and hypertension; pregnant women; hard-to reach rural populations.

As for Call 2, all four Units funded in the first phase have made progress with regards to inclusion in their research and CEI activities. For example, the GHRU on the prevention and management of stillbirths and neonatal deaths at Sub-Saharan Africa and South Africa is including marginalised women from disadvantaged communities in their 15 CEI groups, which provide input on research plans and link researchers to their communities.

Participation and two-way Communication

All award-holders have made progress in identifying and engaging with community groups through different means. Units have embedded community advisors within the research team management and governance structures, used CEI leads to support oversight of training needs and meaningful engagement with a breadth of communities in research across all stages and in a range of ways. These communities encompass a wide range of stakeholders including community engagement specialists, community leaders, non-governmental, civil society organisations, faith groups, service commissioners and providers, as well as policy makers (see Section 3.3 for more details on influence on stakeholders).

Types of engagement included press conferences, radio and TV broadcasts, school-based outreach events, community sensitization meetings and focus group discussions. Some award-holders use the arts as an effective means of community engagement, including theatre performances, puppet shows, art competitions and co-producing docudramas. These activities create important connections between the researchers and local communities experiencing health inequities and enable connections between these and the local service providers and local/national level policy makers.

The GHRU on Tackling Infections to Benefit Africa (TIBA) engaged with over 1,200 community-based stakeholders through equitable partnerships across nine LMIC countries

and the UK. CEI activities included participatory mapping events, individual and group discussions exploring health beliefs, practices, challenges and discussions, telephone discussions (during early-COVID lockdowns), community workshops to inform survey design and interpretation and regular debriefings with community-based guides, mappers, and fieldworkers. It is one of eight projects shortlisted for the inaugural Inclusive Health Research programme from Nature Awards. Each nominated project shows high quality research with an inclusive approach leading to greater health equity. The outcome of this award will be announced in July 2023.

Several award-holders highlighted the use of social media as a community engagement tool. For example:

- Facebook - 'Breathing through a straw' challenge (GHRU on Respiratory Health (RESPIRE))
- WhatsApp – a key channel for information sharing (GHRU on Health in Situations of Fragility)
- WeChat – sharing information on project progress (GHRU Action on Salt China)
- Twitter – sharing of video resources (GHRU on Health in Situations of Fragility)

Other awards have actively encouraged local leadership and joint decision making (GHRU on Global Diabetes Outcomes Research), given patient representatives a voice by acting as a co-chair on a country CEI steering committee (GHRU on Global Surgery), and included patient members from Malaysia and Bangladesh as co-applicants on grant applications (RESPIRE).

More unusual types of CEI activities in this reporting period include:

- Radio-listening clubs (GHRU on MPRU)
- A public bicycle rally in Dhaka led by influential film and football personalities living with COPD (RESPIRE)
- A 'virtual marathon' to raise public awareness on World Asthma Day (GHRU on Respiratory Health (RESPIRE)
- An Indian pilot project published findings using novel high intensity Bollywood dance as an intervention for the prevention of obesity and diabetes in young South Indian girls

(THANDAV study – GHRU on Global Diabetes Outcomes Research) and produced an associated video.

- A Global Health Festival featuring events and presentations over the course of a week in Arabic and English, including discussions involving researchers and practitioners and locally scripted video and song to channel key messages regarding mental health and prevention and treatment of non-communicable disease through accessible means. (GHRU on Health in Situations of Fragility)

Empowerment, Ownership, Adaptability and Localization

The MPRU accessed hard to reach communities through interactive national radio station programmes, in which people could send SMS messages that could be discussed on air. The programmes were recorded and released as podcasts. Other Units overcame literacy or language barriers by using pictorial representation of health information (RESPIRE) or a series of tailor-made loudspeaker audio programmes to deliver salt reduction messages (GHRU Action on Salt China).

In Ethiopia, South Africa, Sierra Leone, and Zimbabwe, one Unit involved service users and/or patient representatives in Theory of Change workshops. These had an important role in prioritising health system strengthening intervention options, and in designing implementation strategies and selecting appropriate process and outcome indicators (GHRU on Health System Strengthening in Sub-Saharan Africa (ASSET)).

One Unit noted how the local context had a major impact on participation of men and women and thus impacted CEI delivery methods. In Pakistan and Bangladesh, they implemented dedicated facilities and sessions for women where they were seen by female only staff. In Sri Lanka, they had more difficulties engaging with men in health assessments and interventions. This was overcome by approaching employers to release their workers for time for individual health assessments/ interventions and by making sessions available outside of the working day (GHRU on Diabetes and Cardiovascular Disease in South Asians).

Following feedback from the community on their vaccine effectiveness work, the GHRU on MPRU adapted their terminology to suit the community by using the term “community

protection" instead of "herd immunity" when talking about vaccination benefits. This was critically important in reducing vaccine hesitancy.

In Ghana, the experiences of the patient and community contributors informed changes in the trial study protocol on Task Shifting InGuinal hernia Repair between surgeons and non-surgeon physicians (TIGeR). The protocol was adjusted to include women in the patient cohort and to focus on identified needs, and ways to minimise community perceived barriers to accessing healthcare. These conversations have informed practitioner approaches at a sub-national level as local researchers learned more about the local perceptions of health within rural communities. Additionally, this patient consultation exercise allowed the Ghanaian Global Surgery Unit (GSU) team to establish relationships with community leaders; it has changed the perception of the Ghanaian research team about the importance and benefits of involving patients in research design. This and other related lessons have been published here.

Many award-holders reported the benefits of recognising the importance of including vulnerable/ marginalised voices in their research and how this feedback influenced how the research was ultimately conducted. For example:

"By engaging caregivers (parents/ guardians/ family members) and community representatives (community leaders, teachers, religious leader, community volunteers), and listening to their feedback we were able to identify cultural issues and overcome study implementation challenges and improve health services". [RESPIRE]

Finally, the GHRU on Neglected Tropical Diseases (NTDs) published an article exploring why an intervention to prevent mycetoma failed due to a lack of consideration for community ways of life, values and priorities. This example shows the importance of meaningful community empowerment and ownership for interventions to succeed and positively change community behaviours.

Engaging communities in South-East Asia: an example from the GHRU on Diabetes and Cardiovascular Disease in South Asians

Learning from people living with diabetes and cardiovascular disease (CVD) helps ensure that any interventions are relevant to areas where action is most needed. Much of the Unit's work has

therefore centred around the inclusion of diverse and vulnerable groups in South Asia, ensuring they are represented not only in the planning but also through participation in the research.

One of their approaches was to describe their research in region- and language-specific videos to improve communication with local communities, using feedback from locally based focus groups to adapt their methods. In Pakistan, engaging women in research can be challenging but, working alongside local primary healthcare teams, the offer of dedicated sessions for women and use of mobile health units helped engage those who were unable to travel to more central meetings. Researchers in India regularly met with community leaders, including leaders of local mosques and Hindu temples, to reach participants.

The high level of public engagement achieved by the Unit's researchers across South Asia assisted their successful recruitment and surveillance of the 150,000 people whose data contributed to the biobank. The Unit's surveillance study data has also been used in UN global monitoring reports to estimate the prevalence of diabetes and CVD, and to assist in the allocation of healthcare resources in the region.

Read more about this story on the NIHR website.

3. Outputs and outcomes

High quality policy/practice relevant research and innovation outputs

The NIHR Global Health Research portfolio Theory of Change includes the following primary research related outputs:

- High quality policy/practice relevant research and innovation outputs that respond to global health research priorities
- Dissemination and knowledge exchange
- LMIC and UK researchers trained and increased research-enabling staff capacity
- Equitable research partnerships and thematic networks established/strengthened drawing on LMIC and UK expertise (SDG 17)

Research and innovation outputs include any item arising from NIHR-funded research that enters the public domain. Research outputs can be written, verbally presented, audio/visual or electronic, as per the definitions available on the NIHR website. NIHR guidance requires award-holders to report on a broad range of research outputs and to give notification of any particularly impactful or newsworthy outputs. NIHR also collects a cumulative count of all award-related outputs with the annual report.

NIHR further identifies important outputs that can be developed into timely NIHR Evidence alerts. During the reporting period, NIHR published three alerts relating to the work of the GHRU on Global Surgery on better cancer care after surgery improves outcomes, a new COVID-19 risk prediction tool, and evidence that expensive antiseptics and sutures do not reduce surgical site infection. Call 1 Units were all offered the ability to publish research findings in the open access NIHR Global Health Journals library and two Units are working on publications and/or synopses currently in production.

For clarity, the outputs referred to in sections 3.1-3.2 follow the NIHR definition of research output. Other Theory of Change outputs are covered in the rest of Section 3.

3.1 Aggregated number of outputs by output type.

Figure 2: Aggregated number of outputs across Call 1 Units (upon completion) and Call 2 Units

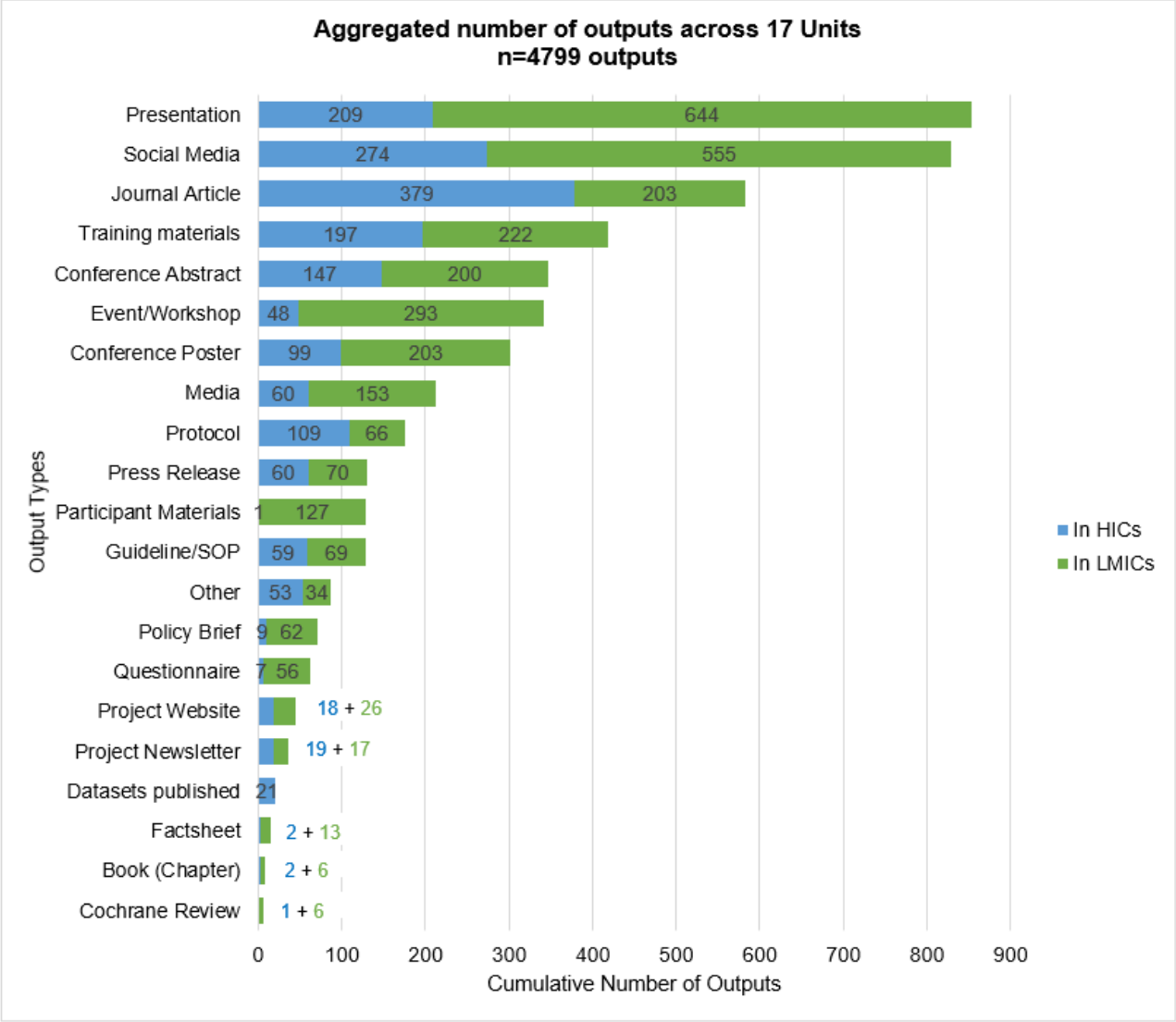


Figure 2 displays the cumulative number of output types from 17 Units which had been accepted for publication, in pre-publication, or published by 30 November 2022. The cumulative number of outputs reported is nearly six times higher since the last reporting period (an increase from 830 to 4799 since January 2021). Some of the largest increases are in dissemination related activities, which is to be expected as 13 of those 17 Units were

in the final stages, with research findings emerging. These increases include conference posters (102 to 302), events and workshops (19 to 341), journal articles (222 to 582), and presentations (126 to 853). Social media outputs (24 to 829) and training materials (41 to 419) have also increased significantly. Engagement with LMIC stakeholders is evidenced by 63% of the total number of outputs being based in LMICs, including 86% of events/workshops, 87% of policy briefs, and 72% of media outputs (for example TV, radio, print).

Responding to the COVID-19 pandemic: examples of outputs from Call 1 Units

- **GHRU on Improving Health in Slums** set up a COVID-19 resources page on the Unit website that brings together published relevant information (research literature, reports, policy briefs, guidelines, blogs, webinars and news coverage) about tackling COVID-19 in slum settings.
- **TIBA** produced weekly COVID-19 situation reports in Africa, 2 open access databases, over 21 policy briefings, 20 publications and 6 reports including genome sequencing, COVID-19 testing and a comparison of countries mitigation strategies to their website.
- **GHRU on Global Surgery** established an international validated Surgical Preparedness index to evaluate resilience of surgical systems and assessed the extent to which hospitals around the world were able to continue elective surgery during COVID-19: NIHR Global Health Unit on Global Surgery, COVIDSurg Collaborative, 'Elective surgery system strengthening: development, measurement, and validation of the surgical preparedness index across 1632 hospitals in 119 countries', The Lancet, ISSN: 0140-6736, volume 400, issue 10363, pages 1607-1617. The findings were summarised in an NIHR Evidence alert..
- **ASSET** studied the integration of COVID-19 and TB screening: van Rensburg AJ and others, 'Applying learning health systems thinking in codeveloping integrated tuberculosis interventions in the contexts of COVID-19', BMJ Global Health, 2022 October, volume 7
- **RESPIRE** measured the spread of COVID-19 in India: Agarwal D, Patil R, Roy S, Kaur H, Mehandale S, Bavdekar A, Nair H, Juvekar S, Dayma G, RESPIRE Collaboration, 'Seroprevalence of SARS-CoV-2 specific Immunoglobin G antibodies in rural population of Western Maharashtra, India';Journal of Global Health 2023, volume 13, issue 06011
- **IMPALA** identified effects of the pandemic and the response to it in Africa: Schewitz IA, Zar H, Masekela R, Gordon S, Ozoh O, Kagima J, Gray D, Binegdie A, Irungu A, Worodria W, 'Unintended consequences of the COVID-19 pandemic in Africa', Journal of Pan African Thoracic Society, 2020, volume 1, issue 3, pages 3 – 5

3.2 Externally peer-reviewed research publications.

In their End of Award reports, Call 1 Units have reported a total of 503 peer-reviewed publications across the lifetime of the awards. This is approximately three times more outputs than reported in Year 3, showing the significant acceleration of outputs and publications in the latter half of the Call 1 Units' activities. Table 1 below shows the distribution of open access peer-reviewed publications, LMIC, and female lead-authors as reported by the Units. Partners from LMIC home institutions led on a majority (56%) of the publications, which is a positive indicator of equitable partnerships and research capacity strengthening.

However, only 40% of all lead authors are female and, of these female lead authors, the majority (60%) are from UK or other high-income country institutions. Overall, female authors from LMIC institutions represent just 17% of all lead authors. While this shows there are still barriers and challenges facing women from LMICs in research, a total of 88 LMIC-based women have had the opportunity to be a lead or senior author on major peer-reviewed publications as part of GHRU funding. NIHR continues to promote equity and fairness in authorship and expects the GHRU awards to continue to make a difference in achieving an equitable LMIC-HIC team and gender balance.

Table 1: Total number of externally peer-reviewed publications across Call 1 Units

	Total number across all NIHR funded awards (cumulative number since funding began)	% of total number of externally peer-reviewed research publications
Number of externally peer-reviewed research publications that are open access	417	83% (of 503 peer-reviewed publications)
Number of externally peer-reviewed research publications with a lead or senior author whose home institution is in an LMIC	280	56% (of which 31% are female)
Number of externally peer-reviewed research publications with a female lead or senior author	203	40% (of which 43% are from LMICs)

Call 2 Units have also reported peer-reviewed publications at the end of Year 1 – as shown in Table 2 below. The proportion of LMIC-based and female authors is currently low, but this is expected to improve throughout the lifetime of the awards as research capacity is strengthened and individuals are empowered to lead on major peer-reviewed publications. NIHR will continue to monitor the distribution of peer-reviewed publications and ensure Call 2 Units have processes in place to ensure equity in authorship and leadership of scientific outputs.

Table 2: Total number of externally peer-reviewed publications across Call 2 Units

	Total number across all NIHR funded awards (cumulative number since funding began)	% of total number of externally peer-reviewed research publications
Number of externally peer-reviewed research publications that are open access	27	100% (of 27 peer-reviewed publications)
Number of externally peer-reviewed research publications with a lead or senior author whose home institution is in an LMIC	7	25% (of which 1 is female i.e. 14%)
Number of externally peer-reviewed research publications with a female lead or senior author	5	18% (of which 1 is LMIC-based i.e. 20%)

A roadmap for surveillance of antimicrobial resistance (AMR) in LMICs through whole-genome sequencing

A key output from the GHRU on Genomic Surveillance of Antimicrobial Resistance is a roadmap for incorporating whole-genome sequencing (WGS) into existing antimicrobial resistance (AMR) surveillance frameworks. The frameworks include the WHO Global Antimicrobial Resistance Surveillance System and are informed by ongoing, practical experiences of developing WGS surveillance systems in national reference laboratories in Colombia, India, Nigeria and the Philippines. The challenges and barriers to WGS in LMICs are discussed together with a roadmap to possible solutions for AMR surveillance.

Reference: NIHR Global Health Research Unit on Genomic Surveillance of AMR, 'Whole-genome sequencing as part of national and international surveillance programmes for antimicrobial resistance: a roadmap', BMJ Global Health, 2020 November, volume 5, issue 11

The Unit received further funding via Units Call 2 to continue and expand its work. See the Unit's website for more information.

Informing policy, practice and individual/community behaviour in LMICs

3.3 Delivery partner's summary of the most significant outcomes of any award level engagement and/or influence of policy makers, practitioners and individual/community behaviour

Overall, 85% of Call 1 awards reported engagement and influence on at least one stakeholder group: policymakers, practitioners, and individual/community behaviour in their last year. As for Call 2, all four awards reported engagement and influence activities only on policymakers and practitioners in their first year. For both calls, the highest occurrence of reported influence is on policymakers, followed by practitioners and then, only for Call 1, on individuals and community behaviours. Call 2 Units have not yet reported an influence on individuals and community health related behaviours although communities have been engaged in early work. These results are as expected for both calls given their different respective stages of the research lifecycle. We expect influence on policy and community outcomes to develop over time for Call 2 awards.

Influence on policymakers

Call 1 End of Award reports contained extensive examples of influence on policymakers, especially high-level engagement with Ministries of Health, international health authorities and other senior national government officials from many Units. This section focuses specifically on the outcomes of these engagement activities.

The NIHR Global Health Research Unit on Tackling Infections to Benefit Africa (TIBA) has influenced policy at the international level. Working in collaboration with the World Health Organisation (WHO) and the European and Developing Countries Clinical Trials Partnership (EDCTP), they have collected and analysed data about the health research systems of 47 member states of the WHO African Region (WHO AFRO). Based on the results, countries were charged with developing national strategies for improvement to be reassessed in two years' time. This Unit has also influenced policymakers at an international level by co-developing the Health Research for Innovation Strategy for Africa (HRISA) 2020-2030, with African Union Development Agency (AUDA-NEPAD).

The NIHR Research Unit on Action on Salt China (ASC) significantly impacted national policy in China. By working closely with the National Institute for Nutrition and Health (NINH) of China, they provided the evidence to improve the country's nutritional labelling standards for pre-packaged foods and restaurant foods, and to change guidelines for salt reduction in home cooking and nutritional assessment for children's snacks. The salt reduction activities conducted by this Unit are now recognised as best practice. Over this award's lifecycle, the Unit has organised over 1300 actions across 6 Chinese provinces and generated health benefits for over 300 million people, representing an important contribution to the goals of 'Healthy China 2030' Actions.

In Sierra Leone and Nigeria, the Ministries of Health have adopted recommendations developed by the NIHR Research Unit on Health in Situations of Fragility (RUHF) to address the increasing burden of non-communicable diseases (NCDs). RUHF has supported the adaptation, testing, and adoption of tools to strengthen the prevention and management of NCDs at the national primary care level. The team has also worked with on-site partners to ensure content was adapted to local contexts.

The NIHR Global Health Research Unit on Improving Health in Slums completed the largest survey of healthcare use ever conducted among people who live in slums. The Unit interviewed over 10,000 people in 7,000 households in Nigeria, Kenya, Pakistan and Bangladesh. They have impacted policy at the national level by creating an interactive software tool to quantify and analyse the accessibility and attractiveness of healthcare facilities across a range of different scenarios. Policymakers and healthcare professionals

can use the software to identify and visualise healthcare models to meet the needs of the poor urban communities, thus shaping plans for future health services and systems. This Unit has contributed to developing national guidelines and strategies to tackle the COVID-19 pandemic with a focus on the health of people living in slums, for example, through the mini policy briefing documents on NCDs and COVID-19 available on request from their website.

Evidence produced by the NIHR Global Health Research Unit on Respiratory Health (RESPIRE) has been integrated into local health systems in Bangladesh, India, Malaysia, and Pakistan. For example, based on RESPIRE's research and stakeholder engagement with national health authorities, a pulse oximetry service is now included in national child health policy and guidelines in India and Bangladesh. The Unit's partners set up pulmonary rehabilitation (PR) centres in these two countries in their public, private and non-governmental organisational facilities. These provide access to a healthcare service which was previously unavailable, and which is contributing to improved quality of life, respiratory health outcomes and well-being of patients, including those living in rural and urban areas as well as from tribal communities.

Call 2 awards report activities focused on influencing policymakers and practitioners, such as:

- Attendance at advocacy and networking events
- Development of systematic reviews on the policies and guidelines in LMIC contexts
- Nurturing relationships with local stakeholders, with views to securing research uptake further in the research cycle
- Establishing working partnerships with local research teams in LMICs

The engagement activity reported by the Call 2 NIHR Global Health Research Unit on Neglected Tropical Diseases at Brighton and Sussex Medical School (Phase 2) illustrates the nature of most interactions at this stage: *"The team met with district officials to launch the project and also visited a treatment centre meeting with staff and patients providing information about the project to delegates comprising of local leaders, Rwandan Biomedical Centre and Ministry of Health officials and community and patient representatives."*

Influence on practitioners

This section focuses on influence reported by Call 1 Units, as there is limited evidence for influence on practitioners by Call 2 Units given these are still in the earlier stages of their research and capacity development.

Overall, Call 1 Units have fostered positive relationships with practitioners across areas of care including diabetes, respiratory health, surgery, NTDs, cardiovascular disease, and many more areas relating to healthcare access and coverage. This included co-designing interventions as well as training. For example, the RESPIRE Unit tested a community-based intervention on screening and management of chronic respiratory diseases. The eight-week course resulting from this intervention was delivered to 70 physicians and nurses from hospitals across India.

The NIHR Global Health Research Unit on Health System Strengthening in Sub-Saharan Africa (ASSET) influenced practitioners through the development and dissemination of manuals and training programmes for healthcare professionals. For example, delivering online training and accreditation of healthcare workers in Ethiopia for integrated screening, assessment and management of suspected Tuberculosis and COVID-19. In addition, the team has developed and disseminated over 50 outputs to policymakers and practitioners and generated impact at both sub-national and national levels with health system strengthening interventions (HSSI). More about the actions undertaken can be found here.

Influence on individuals and community behaviours

Several GHRUs reported direct influence on individuals and community behaviours. Many of them highlighted that having communities involved from the early stages of their studies contributed to helping influence these individuals and behaviours through the outcomes of the research.

In China, the Action on Salt China (ASC) Unit has influenced individuals and community behaviours through health education materials produced to improve knowledge, attitude, and practice on salt reduction amongst the public. Part of their actions focused on children and were disseminated through the national education network.

The NIHR Global Health Research Unit on Lung Health and Tuberculosis in Africa (IMPALA), has influenced individuals and community behaviour, for example, by engaging them in a series of meetings held with village heads and chiefs. These individuals became allies in disseminating study information and encouraging local buy-in. Further evidence of influence in Sudan was reported where the Ministry of Health adopted and institutionalised a community health volunteers' system developed as part of the Unit's intervention. The team reports: "*We are delighted to see enthusiasm and commitment of health system stakeholders & policymakers in both countries to adapt the interventions and ensure continuity beyond IMPALA project*."

Improving the management of wound infections through research: an example from the GHRU on Neglected Tropical Diseases (NTDs)

One unexpected impact of the Unit's programme of work was that the Work Package 4 team looking at Ethiopian medicinal plants for limb care discovered that a high percentage of bacteria isolated from wounds were resistant to ampicillin, cefazoline, clindamycin, erythromycin, and tetracycline, which are the most commonly used antibacterial drugs for the management of bacterial infections in the study area. As a result of this discovery, the team was able to suggest to local practitioners alternative antibiotics for the management of wound infections in patients with lower limb lymphoedema in the study area when treatment was clinically indicated.

The Unit produced a paper on their holistic care package for the control and management of lymphoedema. The Unit involved health professionals, decision makers and patients in the implementation and assessment of the care package, who found it to be scalable and sustainable. Notably, the paper reports that "the gratitude from patients enhanced the motivation of health professionals and they claimed that they had never had any job which gave them greater satisfaction than the integrated holistic care package". This demonstrates how positive experiences with research can influence practitioners to improve practice and deliver better outcomes for patients.

Read more about the Unit on their website.

LMIC and UK researchers trained and increased support staff capacity

3.4 Aggregate level summary across awards of individual capacity strengthening supported by at least 25% NIHR award funding

NIHR Global Health Research Academy members are individuals who receive funds from, or are supported by, an NIHR Global Health Research Programme (including the Global Research Professorship Award) to develop their academic career. This includes trainees, i.e., individuals undertaking formal competitive training/career development awards (such as Masters or PhDs), are assigned a training plan, and have a defined end to their training.

Table 3 below shows a breakdown of the types of degrees/ qualifications undertaken by NIHR Academy trainees throughout the lifetime of the Call 1 Unit programme with the percentage who are LMIC nationals (86%). The GHR programmes now only support trainees of LMIC nationality, however, this was not a criterion when the Call 1 Unit

programme started in 2017 (in which non LMIC trainees were also recruited and supported). One of the 13 Call 1 Units did not recruit any NIHR Academy trainees, so the data presented covers 12 Units. The number of trainees supported has decreased by six, from 180 to 174 in the last reporting period. However, due to the way the End of Award NIHR Academy members data was collected, it is unclear whether these six trainees completed their training or did not, as there were no associated reports of non-completion of training. There is a broad spread of trainees across the Call 1 Unit programme with the majority of trainees undertaking PhDs (51%), followed by Masters (20%), and then Postdoctoral study (18%).

No NIHR Academy trainees have been recruited to the Call 2 Unit Phase 1 programme to date as the four awards are still in their first year, however, plans for training and capacity strengthening are expected to develop as time progresses.

All Call 2 Units funded in Phase 1 were eligible to put candidates forward for the GHR NIHR Academy Short Placement Award for Research Collaboration (SPARC) and/or could offer placements through the scheme, which allows NIHR Academy members to apply for a placement within a GHRU to enhance their research training experience, CV and network and collaborate in another award. In total, four Call 1 Units hosted SPARC trainees. One Call 2 Unit submitted a SPARC Round 3 application in this reporting period. Call 2 Training Leads are also eligible to apply for a Cohort Academic Development Award (CADA) to deliver training and academic career development activities to a cohort of individuals (primarily focussed on those who are LMIC based) who are NIHR GHR Academy members and whose academic career development is being supported through NIHR GHR awards. Two Call 2 Units submitted CADA applications in the period. Both schemes invited applications to round 2 between 1 May 2023 and 31 December 2023 so outcomes will be reported on in the next period.

Table 3: Individual capacity-strengthening across Global Health Research Units Call 1 (upon completion)

Training level	Total number who are currently undertaking or have completed during the award period	% LMIC nationality
BSc	1	100%
MSc	34	97%
MD	2	100%

Training level	Total number who are currently undertaking or have completed during the award period	% LMIC nationality
Mphil	8	88%
PhD	88	89%
Postdoc	31	61%
Other	10	100%
Total	174	86%

LMIC institutional capacity strengthened

3.5 Delivery partner's summary of evidence of activities and outcomes from across awards demonstrating how NIHR funding has helped to strengthen LMIC institutional capacity to contribute to and lead high quality research and training within a national research ecosystem.

In their programme of work, GHRUs favour sustainable approaches to developing both the individual and the research team, with examples of 'train the trainer' and South-South support networks cited across all reports. A strong commitment to CEI informs study design and training activities tailored to community issues. Local ownership is encouraged through membership of management committees, grant funding awarded to local investigators leading the research, and LMIC-led authorship on publications. NIHR also provided add-on funding to support institutional capacity strengthening via the Financial Assurance Fund (FAF). Call 1 Units were eligible to submit FAF applications to support LMIC institutions to develop their financial management capacity specifically. For example, award-holders could request funds to support LMIC institutions in undertaking Good Financial Grants Practice (GFGP) self-assessments and/or accreditation. NIHR ran four FAF calls including a pilot in May 2018, then three calls in September 2018, April 2019, and November 2019. In total, NIHR awarded FAF funds to six Call 1 Units. These funds supported the following activities, including some of them which took place in the reporting period covered by this report:

- GFGP assessments and/or support for certification
- GFGP workshops
- Improvements to policies and procedures
- Financial management training
- Site visits
- Compliance audits

NIHR extended most FAF awards in line with main GHRU contracts, to reflect delays caused by the pandemic. GFGP training and workshops hold significant value for institutions, with five Units reporting progress and accreditation across LMIC partner organisations. The GHRU on AMR has been particularly active in promoting GFGP and has published a paper on the lessons they have learnt from its implementation in LMIC HEIs. During an NIHRCC assurance visit to an accredited institutional partner from one Unit, Agrosavia, the team indicated how the institute had realised sustained benefits from their institutional certification through improved ability to secure and manage large competitive funding awards.

Units also describe the development of research networks and collaborations, for example:

"All research was proposed, designed and led by LMIC Partners, with support provided from [University of Edinburgh] as needed. Each RESPIRE Programme and Platform was co-led by one of our LMIC Partners […]. Every Partner country was represented on the Unit Management Committee (UMC, the core decision-making body), directly influencing key decisions. The RESPIRE network continues to grow, e.g. [Global Health Respiratory Network, GHRN]; a data management/sharing network; a network of research administrators, managers and finance team members." [RESPIRE]

Examples of institutional capacity strengthening include a clinical trials unit established at the University of Ibadan that will continue to operate beyond the project end date (GHRU on Improving Health in Slums); the establishment of a biobank resource in Uganda to underpin the evaluation of Group B Streptococcal vaccines (GRHU on MPRU), and the establishment of 3 data hubs in India, Nigeria, and Benin that have allowed multiple studies to take place and increased patient recruitment reach to at least 80 hospitals across Benin, Ghana, India, Mexico, Nigeria, Rwanda and South Africa (GHRU on Global Surgery). For instance:

"Establishment of hub Data Centres: recent activity includes supporting the India Data Centre to install their own REDCap instance to support local data driven research studies; creating links between the Ghana and India Data Centres to establish a network for local data innovation and training; visit from the Nigeria team to the Ghana Data Centre to support the establishment of a new Data Centre in Nigeria (South-to-South training)" [GHRU on Global Surgery]

Table 4 below shows the aggregated distribution of support staff in both Call 1 and Call 2 Phase 1 Units in which larger numbers are employed in LMIC institutions than in HICs. The need for more support staff in LMIC institutions reinforces the fact that there are more research activities, data collection, and fieldwork conducted in LMICs compared to HICs.

The number of Call 1 Unit support staff in LMICs has decreased since the previous reporting period (from 319 to 286.71 total of FTE support staff), indicating that, as projects near completion, activities shift towards more desk-based analysis or write up and field support staff move on to other roles or work areas. Due to the Call 2 Phase 1 Units being in the early stages of their research lifecycle, it is anticipated that the employment of support staff will increase as these awards progress.

Table 4: Distribution of support staff across Call 1 and Call 2 Units (funded in Phase 1)

Total number of FTE support staff (research managers, finance, admin, community engagement practitioners, other) in post during the last 12 months - note that this may not be a whole number depending on institutional employment policies* **e.g. if an institution employs 5 support staff, of which 3 work full time for 12 months, 1 works full time but leaves after 6 months, and 1 works 1 day/week for 12 months, the total reported would be: 3 + (1*0.5) + 0.2 = 3.7 FTE*		
	Employed in LMICs	**Employed in HICs**
Call 1 Units (n = 13)	286.7 (79%)	77.1 (21%)
Call 3 Units, Phase 1 (n = 4)	61.7 (76%)	20 (24%)
Total (n = 17)	**354.4 (73%)**	**97.1 (27%)**

Equitable research partnerships established or strengthened

3.6 Delivery partner's assessment of the extent to which this NIHR funding has contributed towards building or strengthening equitable research partnerships/collaborations (where applicable, including engagement with communities).

Establishing and strengthening equitable partnerships is a core principle for NIHR Global Health Research funding. To achieve this, all teams were required to set up equitable systems of governance, management and to provide evidence that expertise of LMIC teams was appropriately and equally represented and accountable in relation to their UK counterparts. The approaches to strengthen equity often include establishing clear Terms of Reference to ensure implementation of good practices in promoting equity in areas like leadership, project management, recruitment of local research teams, research prioritisation activities, communications, lead authorship and publication practices. Membership of strategic and project management oversight committees and collaboration agreements are reviewed by NIHR to equity and gender balance at all levels.

The NIHR supports this process by regularly monitoring the distribution of resources, including staff, technology, and infrastructure, to ensure resources and costs are allocated fairly. This is achieved through quarterly financial reporting as well as ad-hoc reviewing of

significant project and/or budget changes. NIHR also ensures milestones and activities are on track to deliver on funded objectives through regular check-ins with award-holders and annual progress reports. Equity in partnership was evidenced by Units throughout the research life cycle, and through the development of collaboration agreements and project advisory and oversight groups by ensuring:

- Balanced nationality and representation of UK and LMIC-based research team members
- Gender balance in research teams, including in leadership roles at all levels
- Appropriate allocation of resources reaching LMIC contexts
- Use of available LMIC expertise and support for further local capacity development including non-academic support staff and community partners
- Research priorities are established with and for the benefit of LMIC beneficiaries
- Equitable leadership of the work programme and packages across all partners and recognition of contributions through publications

Some Units reported examples of locally adapted practices, used by LMIC research teams to achieve engagement with communities. For example, the GHRU on MPRU reported that engaging men in research and in discussions around vaccines remains a challenge in their projects. They have addressed this by using sport to engage with individuals outside traditional health facilities settings and build rapport and trust.

The GHRU on Improving Health in Slums reported a good example of taking social, cultural, linguistic, and religious characteristics into account when designing data collection in low-income urban communities:

"By striving for diversity in teams, which reflected in local configurations around gender, age, ethnicity, language, and religion. In WP2 [Work Package 2], we matched data collectors to respondents in ways that recognise social norms, e.g., female interviewers working in households where women are not permitted or comfortable to answer questions posed by male interviewers. In Nigeria, Hausa and Yoruba speakers were paired up to administer surveys, and in Pakistan, Christian and Muslim fieldworkers were recruited to address different religious communities. In WP5 we organised specific stakeholder engagements with men, in acknowledgement that men may engage more confidently with a male facilitator and noting that age as a mark of authority may also be important."

In terms of equitable publications practices, TIBA reported that "*85% of first authors and 69% of last authors on TIBA papers were based in LMICs. […] First authorships are a key metric for early career researchers, as are last authorships for more senior researchers, and*

so these data demonstrate that TIBA publications were directly benefitting LMIC researchers." TIBA adopted a unique leadership and delivery model focussed on generating ownership of the research and its findings in Africa. This was notably achieved through rapid impact projects as well as larger projects aiming to respond national health needs. More information can be found in the findings of the Monitoring, Evaluation and Learning (MEL) report TIBA commissioned.

Units in Call 2 have different examples of actions to strengthen equitable partnerships, as they are in the first year of their five-year award life cycle. Nevertheless, all Units in Call 2 have reported significant evidence of embedding this principle from the start of their work. For example, the GHRU on NTDs (Phase 2) reported to be using the same approach learned in Phase 1 (the Call 1 GHRU on NTDs) to ensure their research protocol design is representative of the communities they are working with:

"In Phase 1 we undertook additional qualitative research before finalising the design of a study on podoconiosis. [We] used in depth interviews and focus groups which sought to understand representative views and needs across all groups, to identify potential barriers and seek their solutions within the communities [see the Unit's paper on the topic]*. This approach is being built into some Phase 2 protocols."*

The GHRU on stillbirths reported equitable practices at an operational and strategic level, as: *"Building on previous work and capacity strengthening activities, we have focussed on promoting equity through co-creation, communication, commitment, and review/reflection, underpinned with open, respectful relationships. In the first year of the Unit, each workstream's research priority, project plans and protocols have been co-developed and continue to progress collaboratively between all partners. Additional ways that equitable partnerships are maintained include shared responsibilities/roles, rotation of meeting Chairs, south-to-south training support, and an inclusive publication strategy. Co-Directors Prof Angela Chimwaza, based in Malawi, and Professor Dame Tina Lavender, based in the UK, meet regularly to oversee Unit activities.*

3.7 Aggregated HIC/LMIC spend across all awards

Tables 5 and 6 below show the distribution of GHRU funds across UK and other High-Income Country (HIC) institutions, and LMIC institutions. As shown below, the majority of GHRU funds have gone to LMIC institutions across Call 1. The four Call 2 Units funded in Phase 1 follow a similar distribution. Alongside the information elsewhere in this report, the

spread of funds is an important indicator of research capacity strengthening and equitable research partnerships.

Table 5: Aggregated spend across Call 1 Units

	Total committed amount (GBP) allocated to:	% of total committed amount:
UK/HIC institutions	£40,833,987	49%
LMIC institutions	£42,542,995	51%
All institutions	£83,376,892	100%

Table 6: Aggregated spend across Call 2 Units (Phase 1)

	Total committed amount (GBP) allocated to:	% of total committed amount:
UK/HIC institutions	£13,510,289	48%
LMIC institutions	£14,462,203	52%
All institutions	£27,972,492	100%

4. Value for money

- Delivery partner's summary of evidence from across awards demonstrating activities during the past year to ensure value for money in how the research is being undertaken. This must include narrative on:
- Economy - how are you (the delivery partner) ensuring that funding is being spent on the best value inputs?
- Enhanced efficiency - how are you (the delivery partner) maximising the outputs (research and innovation outputs, knowledge exchange, strengthened researcher and support staff capacity, strengthened partnerships/networks) for a given level of inputs?
- Effectiveness - how are you (the delivery partner) assessing that the outputs deliver the intended outcomes?

Economy

As part of funding assessments and contracting and during extensions of awards detailed budgets are scrutinised to ensure costs meet the funding criteria and are eligible, justified and provide VFM. Due diligence is undertaken on the contracting organisation by NIHR and by the contractor on partners in the delivery chain. This ensures key policies and processes are in place including procurement, finance, HR, fraud, safeguarding, staff travel and expenses policies. From Call 2 Units onward, quarterly financial reports include requests for quarterly transaction listings rather than requiring these at the end of awards or as part of an audit. Reviews of transaction listings allows for full interrogation of budget and spend data to support assessment of VFM by NIHR. To support financial reporting formalized finance protocols are in place at all institutions, ensuring judicious use of budgets. Project leads demonstrate awareness of current economic challenges and are addressing these with a combination of forward planning (agreeing budgets at application stage, recruitment renumeration in line with local rates) and relationship building (sharing costs with other research groups, planning conferences to coincide with other relevant events). Projects also demonstrate a willingness to exploit opportunities such as time given free of charge, sub-studies ‘bolted on’ to main trials, goods donated (sterile gloves, for example), leveraging bulk buy discounts, networking across the larger postgraduate/ECR community to access

free training courses and expertise. UK partners have successfully purchased and shipped equipment and /or consumables on behalf of partners particularly where this provides best value for money. However, some unexpected delays have been experienced either in procurement and/or customs that have then impacted on Units planned work plans.

"Our research strategy is to conduct multiple overlapping projects led by LMIC partners that address synergistic questions, and therefore achieve economy of scale. To this end, for example, strategically we have run projects that leveraged and added value to existing trials instead of trying to launch a large trial independently." [GHRU on MPRU]

"We maximised opportunities for sharing costs with other initiatives relevant to RESPIRE such as the 'Respiratory @Edinburgh' seminar series, which were held jointly with the AUKCAR, RESCEU and IMP2ART programmes." [RESPIRE]

Efficiency

NIHR encourage efficiency and coordination across partners and other awards. Relationship-building across LMIC partnerships and awards is key to developing efficiency. For example, it enables teams to source equipment at lower costs than that available in the UK (a solar panel for power and IT infrastructure, and laboratory equipment, for example) that can benefit and strengthen the research capacity of LMIC partners beyond the end of the programme.

Strong communications and accountability between partners (WhatsApp groups, safe, secure data sharing systems, work package planning) means that data collection samples can be made available for further research, negating the need for duplicate data collection activities. GHRUs also coordinate learning and development activities to share opportunities with regional partners and include other relevant partners from within the NIHR GHR portfolio. Multi-award networks like the Global Health Respiratory Network have supported coordination and increased efficiency of research and learning and development activities.

"Efficient use of data – the Department of Information and Data Compliance at Warwick have endorsed our data collection processes and supporting manual. Other global health projects have adopted our data collection processes, minimising the need for the duplication of work. We granted the PhD cohort access to fieldwork equipment to support their data collection, removing the need to re purchase additional assets." [GHRU on Improving Health in Slums]

"By making use of existing infrastructure such as the Edinburgh DataShare and DataVault, we did not use resource to create a new discipline-specific repository, whilst providing Partners with access to excellent facilities and linked support." [RESPIRE]

NIHR is also planning a regular series of shared learning events to support continued shared learning and collaboration across the active award portfolio to reduce duplication and increase sharing of resources and contextual learning and knowledge.

Effectiveness

Recruiting staff with the most suitable skills, pursuing engagement with policy makers, stakeholders, and the community all help to build the strong relationships needed for programmes to operate effectively. These relationships are then utilised to leverage opportunities to promote research and deliver impactful outcomes.

"We converted inputs into outputs in the form of academic peer reviewed publications, training courses and strategic documents for WHO-AFRO and AUDA-NEPAD. We also engaged communities where our research was conducted in order to communicate the findings in ways that benefited these communities. Working in partnerships added greatly to TIBA's ability to achieve VfM." [TIBA]

"[Effectiveness] is maximised through our transformative interdisciplinary partnership which maximises the impact of discoveries across disciplines and across diseases. This is amplified by strong links with partner country Ministries of Health, WHO AFRO, WHO Geneva and UNICEF. MPRU partners sit on multiple Expert Task Forces and Technical Working groups. We are monitoring how MPRU projects influence policy, engage communities and strengthen capacity." [GHRU on MPRU]

NIHR promotes interdisciplinary research, South-South and South-North networking, and shared learning between awards and research partners regarding CEI, training, research capacity strengthening, and GFGP. Opportunities to further improve networking, training and sharing of available resources are being explored by NIHR through development of the existing NIHR Learn platform for GHR. NIHR has supported the development and coordination of thematic networks between awards within the Units portfolio and through webinars and workshops has contributed to increased understanding on NIHR expectations and increased information sharing and collaboration between awards to influence their overall effectiveness.

All awards are expected to deliver benefits (outputs, outcomes, and impacts) in line with the NIHR GHR Theory of Change. The evaluation metrics for these awards are defined by key indicators outlined in the GHR Results framework and key assumptions are outlined. NIHR collects relevant data from each award throughout the research life cycle with some key metrics collected at the application stage, and others are collected regularly through monitoring, including quarterly and annual review processes. Analysis of data in these reports provides key learning and actions to drive continuous improvements in the GHR programme calls and downstream award management and reporting.

4.1 Equity

- Please summarise any activities that have taken place to ensure everyone is treated fairly as part of the application process and within funded research teams, regardless of gender, gender identity, disability, ethnic origin, religion or belief, sexual orientation, marital status, transgender status, age and nationality.

NIHR openly recruits and appoints the GHRU Funding Committee to achieve a balance between gender, nationality, geographical balance whilst ensuring the inclusion of a range of relevant Global Health Research expertise. Diversity data is collected for non-UK team members on age, sex, disability, and nationality until currently conducted scoping work to determine the most appropriate global Equality, Diversity and Inclusion (EDI) data collection categories has been completed.

Committee members are inducted and supported to consider potential unconscious bias, and to review awards against published selection criteria including assessment of equity issues within the research and across the team and wider stakeholders as part of the funding assessment process including the balance of work and budgets between LMIC and UK. Collaboration agreements and strategic advisory groups are further reviewed to ensure equity and an appropriate proportion of LMIC and UK expertise, geographies, gender balance and leadership at all levels. Through active monitoring, progress of equity within aspects of the projects is regularly tracked and mitigating actions requested to improve equity where issues of possible inequity are noted.

From Call 2 Units, NIHR's expectations on equity, inclusion and gender balance of teams and leadership models have been strengthened to support a greater diversity of leadership at all levels. NIHR has strengthened call and finance guidance to applicants and award-

holders and continues to improve these through continuous learning. Work is currently underway to further increase accessibility of NIHR guidance, particularly for LMIC applicants. Annual reporting templates and guidance are reviewed periodically to reduce burden and improve reporting.

As per the NIHR ODA research contract and NIHR policies, all research institutions funded under the NIHR GHR programmes are expected to have HR policies and procedures in place to prevent discrimination, bullying and harassment (see section 5.3 – Safeguarding for more information about reporting procedures). Active Units are expected to provide information related to equity and fair treatment on an annual basis, including high-level distribution of research and support staff between UK/HICs and LMICs, inclusion and gender balance of the team and wider stakeholders including communities.

Across Call 1 and Call 2 Units, equity in research team composition has been demonstrated, for example through appointment of senior leadership positions to LMIC-based researchers, but also encouragement, mentorship, and training of early-career researchers, research support staff and community members. Beyond research teams, award-holders have also reported that team composition in other areas of their projects reflects consideration of fairness and equity, including partner organisations, steering committees, working groups, and community representation (GHRU on MPRU). This includes striving for gender balance where possible.

Similarly, in an example of the value of equitable partnerships within research teams, one award-holder reported adaptations to their governance structure in recognition of partners' contributions:

"The partner PIs (one for each country and/ or research work package) played a crucial role in ASSET from the outset, since it was they who were already extensively networked with the policy and healthcare provider communities locally, and with the communities (effectively health system research laboratories) where the research was conducted. […] This was recognised, formally, in our governance structure, according them primacy in the development of research plans, respect for their equivalent and complementary academic expertise, and a controlling vote on the Unit Executive Group (EXEC), with one vote for each partner and one for King's College London, with the Chairman (Unit Director) having a casting vote". [ASSET]

Several other Units describe having the structures and processes in place to ensure local ownership of the research and its relevance to LMIC settings. Across all Units, LMIC

partners are encouraged to lead on all aspects of the research. This includes equitable authorship policies. For example, the GHRU on Global Surgery reports:

Our publications use a single, corporate authorship model (e.g., NIHR Global Health Research Unit on Global Surgery). All contributors share academic credit and are named as collaborating co-authors. Where research is focused on a single country(s), the appropriate Hub Director(s) act as senior and corresponding author. [GHRU on Global Surgery]

This ensures that contributions are equally valued and recognised. Shared responsibility and credit for dissemination of the project findings is an important facet of Units' approach to equity. Whilst contracts for Units Call 1 have ended, dissemination activities continue for up to two years. NIHR has worked with research teams who identified issues where they could not request costs to support LMIC researchers and partners involved in dissemination activities after the end of award. Recognising this challenge in LMIC contexts, DHSC approved a more flexible approach to requesting appropriate costs for LMIC partners involved in dissemination.

Equitable research practices also ensure outcomes and impacts have local relevance and respond to needs of LMIC communities. More information about inclusivity and community ownership can be found in the following sub-section, and in Section 2.2.

- How are you (the delivery partner) ensuring that the funded research benefits vulnerable groups to improve health outcomes of those left behind?

NIHR launched the Research Inclusion strategy in September 2022. All NIHR staff are expected to follow and promote policies and strategies on research inclusion by embedding EDI across the research management pathway. This includes a commitment to publish NIHR diversity data reports and drive improvements over time.

NIHR fully inducts GHRU Funding Committee members on call and eligibility requirements, and equity issues within the research and across the team and wider stakeholders as part of the funding assessment process. The advertised call eligibility and selection criteria include consideration of equitable research partnerships, community and stakeholder involvement and engagement, capacity strengthening activities, governance arrangements and budgets between LMICs and the UK. The meaningful engagement of community beneficiaries and wider stakeholders, including members from the most vulnerable groups, is required to ensure the research will proactively address causes of health inequalities and promote improved health outcomes. The Funding Committee provides feedback to

applicants and award-holders where there is opportunity to strengthen involvement of relevant stakeholders, communities, and the most vulnerable groups throughout the research lifecycle.

During the monitoring of the awards, NIHR research managers look for evidence of engagement with vulnerable groups in reports and data collection. If this evidence is lacking, they ask for follow-up information and/or explanations of the challenges in engaging vulnerable groups. During the reporting period, all award-holders have reported evidence of equity considerations in their policies and processes.

In addition to the information in the previous section, all Global Health Research Units award-holders presented satisfactory evidence of engagement with vulnerable groups and consideration for how their research aims to improve the health of those who are most in need. In addition, award-holders provided evidence that their research management is benefitting from institutional policies around equity and equitable recruitment practices. This is reflected in the composition of research teams and trainee cohorts, as well as distribution of support staff in both HIC and LMICs.

Innovation in diabetes screening in low-resource settings: an example from the GHRU on Global Diabetes Outcomes Research

The GHRU on Global Diabetes Outcomes Research have developed the “Retinome” as a revolutionary surveillance tool for LMICs, providing information relevant to wide range of systemic micro and macrovascular phenotypes in diabetes beyond that of diabetic retinopathy. Such a simply and cheaply acquired retinal screening photograph may be able to provide a comprehensive panel of biomarkers indicating the global vascular health of an individual. This has been explored in the TREND: Telemedicine pRoject for screENing Diabetes and its complications in rural Tamil Nadu where researchers have revisited 25 villages from the Chunampet Rural Diabetes Prevention Project (CRDPP) over 10 years later. The Unit have managed to recruit 90% of the adult population from these villages and have compared Remidio retinal scans, with blood glucose testing to determine if retinal pictures could be used to screen for diabetes. The Unit predict that this technology may revolutionise diabetes screening in LMICs.

Read more about the Unit on their website.

Improving equity through research: Addressing stigma around stillbirth and neonatal death

The GHRU on prevention and management of stillbirths and neonatal deaths in Sub-Saharan Africa and South Asia reported that Year 1 visits to research sites and virtual meetings with new partners and team members across India, Pakistan, Tanzania, Zambia, and Zimbabwe are starting to raise awareness around perinatal death among researchers and healthcare workers, who have already expressed their commitment to prevent them and confirmed the need for appropriate care to bereaved families. This has been clearly expressed by the Pakistan team:

"The project is an excellent opportunity to look into the unspoken grief of stillbirth and neonatal death in Pakistan. There are a lot of myths and misconceptions around stillbirth and neonatal deaths particularly in rural areas of Pakistan where women with these devastating experiences are labelled and stigmatized as being punished by God. These parents experience social rejection from their own families, communities and the society. The psychosocial needs of these parents are unaddressed so far. This programme provides an excellent opportunity to talk to communities about how to improve the experience of giving birth for parents, families and healthcare professionals."

Read more about the Unit on their website.

5. Risk

5.1 Delivery partner to summarise the five most significant risks (both in terms of potential impact and likelihood) across awards within the last year.

Table 7 and table 8 show the five most significant risks, listed in risk registers, across the 13 Call 1 Units and the four Call 2 Phase 1 Units respectively, and the strategies the project teams have implemented to manage and mitigate these risks. Since GHRUs commonly record the same risk types several times, the number of Units citing the risk is also given to provide an indication of risks spread across the Units portfolio.

The top five risks associated with the delivery of programmes of activity across the two Calls differ. The COVID-19 pandemic is recorded as a common and significant risk for the Call 1 Units, impacting the ability to conduct project research in certain areas and to engage with stakeholders and research participants. For the Call 2 Phase 1 Unit projects, the COVID-19 pandemic was documented as a risk in two of the risk registers, with other risks being highlighted as more significant; these include those relating to political and legal contexts, financial management and controls, and operational factors (recruitment/ retention of research staff and study participants, trial set-up delays, and data/ IT challenges). We can infer, from these observations, that COVID-19 is becoming less of a risk over time as teams continually apply learning and implement successful mitigation strategies that also support the wellbeing of individuals. It is interesting to note that other significant risks for the Call 2 Phase 1 Units include environmental factors as well as sustainability of research post award, demonstrating that researchers are thinking about long-term impact.

Other common risks for Call 1 Units relate to operational factors, political and legal risks, and financial related factors. Challenges regarding the recruitment and retention of project staff was identified 26 times in 12 risk registers. As a result, this has a risk category of its own.

Table 7: Top 5 risks across GHR Units Call 1

	Risks	How is the risk being managed/mitigated?	Current status/ distribution

1	**Operational factors** such as delays in recruitment of study participants or trial delivery, lack of engagement from partners/ stakeholders, loss or damage of project equipment/ data, challenges in obtaining ethical approvals for WPs, insufficient technology provision, data or security breaches	Actively engage and involve all partners/ stakeholders throughout the lifetime of the project to facilitate joint ownership of the research; all equipment to be clearly recorded; monitor ethical timelines closely and submit with long lead in times to counteract delays; ensure security is practised in the field to protect equipment; secure data processes to be implemented; suitable curation and record-keeping; ensure timely procurement of technology; data protection training for staff.	76 mentions in 13 risk registers
2	**Political and governance/ legal factors** such as political and economic instability, challenges in obtaining political buy-in in LMICs, poor governance and accountability, non-compliance with Government, institutional, or authorising body regulations, changes to government policies	Clear governance and accountability structures established between local and international partners; a built in 5-10% margin to allow for interruptions and promote flexibility; contingency plans for elections and monitoring of civil society processes; robust working relationships with ministries at all stages to ensure project buy-in; maintain awareness of local and national political situations in collaboration with partners, plan project fieldwork with political events in mind; establish robust understanding of regulations by offering regular training and implementing evaluation and authorisation procedures; offering flexible ways of working.	48 mentions in 12 risk registers
3	**Financial risks** such as poor financial management (including procurement and supply chain mismanagement/ poor project asset management), fraud, exchange rate fluctuations and inflation affecting research costs, a delay in transferring funds to LMIC partners, expenditure not representing value for money	Ensure financial processes (such as control and reporting systems as well as procurement policies and supply chain management) are in place; carefully budget and monitor expenditure; regularly review financial control procedures; conduct frequent meetings with project finance managers; clear and transparent communication between partners; review rate of expenditure as part of quarterly reporting, train all project staff on fraud and anti-corruption policies; learn from past financial lessons and implement better ways of working moving forwards; maintain regular communication with the NIHR as the funder; conduct internal audits.	43 mentions in 13 risk registers
4	**Challenges with recruitment/ retention of project staff** and expertise within research teams	Establish robust recruitment and retention plans; extend fixed term contracts ahead of end dates so staff can plan accordingly; regularly review interview and assessment processes; offer competitive employment conditions with support mechanisms, present career progression opportunities to both new and existing staff members; implement continued training, mentoring and supervision.	26 mentions in 12 risk registers
5	**COVID-19 pandemic** affecting research staff, ability to conduct research in certain sites or engage with stakeholders	Develop flexible protocols to allow alternative means of data collection; regularly review risk assessments; provide relevant equipment for remote working; availability of PPE for all research staff and participants when face-to-face contact is unavoidable; provide training and wellbeing support to all staff; strictly adhere to local and UK advise	14 mentions in 7 risk registers

		and guidelines; liaise closely with partners and sites to anticipate challenges.	

Table 8: Top 5 risks across GHR Units Call 2 Phase 1

	Risks	How is the risk being managed/mitigated?	Current status/ distribution
1	**Operational factors** such as loss of key staff and expertise, lack of engagement from partners and key stakeholders, delays in recruitment of study participants or trial set-up, loss or damage of project equipment/ data, challenges in obtaining ethical approvals for WPs, insufficient technology provision, data or security breaches	Actively engage and involve all partners/ stakeholders throughout the lifetime of the project to facilitate joint ownership of the research; communication strategies to be communicated across partners; review staff/ study participant recruitment and retention strategies and create targeted solutions; engage with relevant officials to understand trial set-up processes; all equipment to be clearly recorded; secure data processes to be implemented; ensure timely procurement of technology; deliver data protection training to staff.	42 mentions in 4 risk registers
2	**Political and governance/ legal factors** such as political instability, government hostilities, non-compliance with Government, institutional, or authorising body regulations	Maintain awareness of local and national political situations in collaboration with partners; conduct robust travel and security risk assessments; re-locate meetings/ training if local areas become unstable; monitor FCDO advice and seek updates from local ministries; build engagement with local partners; establish robust understanding of regulations by offering regular training and implementing evaluation and authorisation procedures.	16 mentions in 4 risk registers
3	**Financial risks** such as poor financial management and inadequate financial controls, fraud, inappropriate use of ODA funds, exchange rate fluctuations and inflation affecting research costs, a delay in transferring funds to LMIC partners, overspend or underspend in both UK and LMICs	Ensure robust financial processes are in place; regularly review financial control procedures; conduct frequent meetings with project finance managers in partner institutions to support implementation of financial management procedures; clear and transparent communication between partners; monitor and report on expenditure as part of quarterly reporting; maintain regular communication with the NIHR as the funder; conduct internal audits; financial support and training available for partner institutions; monitor exchange rate regularly; collaboration agreements to detail all financial reporting responsibilities and associated timelines.	15 mentions in 4 risk registers
4	**Environmental risks** covering epidemiological events (such as COVID-19), natural disasters (floods and drought)	Use local knowledge to inform decisions on data collection and research in the field; build in a 5-10% margin to allow for interruptions and promote flexibility; sound communication between partner institutions so staff are made aware of challenges	5 mentions in 3 risk registers

		affecting their working environment; use hybrid/online meetings and data collection.	
5	**Sustainability of research post award –** research unable to continue beyond the NIHR award, difficulties in establishing and reporting pathways to impact	Ensure a staged transfer of leadership to the LMIC partners during the lifetime of the award; work with national funders to secure joint funding for local projects within the active contract; grow leadership roles and ensure wide engagement with relevant communities.	4 mentions in 2 risk registers

5.2 Fraud, corruption and bribery. Delivery partner to summarise:

- their approach to handling accusations of fraud, corruption and bribery (if not covered in previous reports)
- any changes in the last year to the anti-corruption strategy applied to managing NIHR funded awards

NIHR staff and award-holders must abide by all regulatory and legislative frameworks in relation to research practice, transparency, and governance. Staff are also expected to comply with the NIHR Anti-Fraud policy. NIHR sets out expectations for award-holders in the standard ODA Research Contract and provides guidance and information on financial management, and reporting for awards (see also NIHR Research Funding Good Practice Guide). NIHR follows the government approach to whistleblowing, inviting reports of any alleged wrongdoing within award activities and handling these confidentially. Anyone can use the NIHR incident reporting form to raise concerns or instances of fraud, corruption, bribery, or other misconduct. Fraud concerns and incidents reported to NIHR are shared directly with the DHSC anti-fraud team. Each concern is fully investigated, ensuring individuals are confident and protected in bringing matters to the attention of NIHR staff.

Annually, NIHR provides a high-level report to DHSC summarising all incidents or concerns pertaining to fraud, safeguarding, security and misconduct reports received and their status. A centralised risk and issues register is managed by the cross NIHR assurance lead to ensure join up across NIHR coordinating centres managing ODA funded awards. There have been no allegations or concerns raised for GHRU awards, in relation to fraud, corruption, and bribery across the programme during the reporting period.

NIHR finance teams review comprehensive financial reports from award-holders quarterly. Financial reporting processes have been updated between GHRU Call 1 and Call 2. Quarterly financial reports from Call 2 onward include transaction listings, to spread the effort

throughout the lifetime of the awards and simplify final reconciliations at the end of the contract. In addition, NIHR conduct periodical spot-checks for invoices and receipts on transaction reports and deeper dive audits to follow up on any irregularities or ineligible items or costs to ensure good financial practice. There were no deep dives or audits, beyond financial reconciliations for completed awards, in this reporting period.

Award-holders reported that project teams and their partners have policies and established systems for monitoring and reporting of fraud, corruption, and bribery. However, there have been no such allegations against Global Health Research Units awards or other related issues within the programme during the reporting period. One intended partner for a Call 2 Unit identified an undergoing a fraud investigation during due diligence. Due to ongoing investigations and a need for the institute to remedy these risks, the Unit engaged an alternative partner organisation in the collaboration to avoid delays.

5.3 Safeguarding

- Please detail and highlight any changes or improvements you (the delivery partner) have made in the past year to ensure safeguarding policies and processes are in place in your project and your downstream partners.

All award-holders must abide by Safeguarding Provisions in the NIHR standard ODA research contract and the NIHR policy on Preventing Harm in Research. Any concerns or confirmed breaches of safeguarding policies are required to be reported via the NIHR incident reporting form available on the website. The NIHR safeguarding lead handles all reports confidentially and captures concerns on a cross-NIHR Global Health Programme risk and issues register in line with agreed policies and internal procedures.

Annually, NIHR reports the number, type and status of any concerns or incidents of misconduct including safeguarding with DHSC as part of NIHR-wide concerns and incident misconduct reporting processes. The cross-NIHR Safeguarding Working Group continuously reviews policies and procedures to ensure they are fit-for-purpose. NIHR applied learning from across all NIHR programmes to the development of a single NIHR policy on Reporting Misconduct in NIHR Research during the period, ahead of a planned launch in 2023.

- Aggregate summary of safeguarding issues that have arisen during the reporting year

During the reporting period, NIHR became aware that the University of Lagos was subject to a safeguarding expose in October 2019. NIHR immediately investigated any connections and found that one Unit had partners based at the University, albeit in a different faculty/department. The partner immediately provided assurance of their team's safeguarding approaches, that relevant institutional policies are in place, and details of what actions were being taken to investigate, review, and strengthen safeguarding processes at the University.

Aside from this, there have been no issues related to safeguarding raised against any Global Health Research Units awards during the reporting period. Award-holders commonly reported having appropriate procedures and policies in place, with specific training on and resources about safeguarding often made available to research teams.

5.4 Please summarise any activities that have taken place to minimise carbon emissions and impact on the environment across this funding call.

NIHR convened an independent virtual funding committee to assess Call 2 Units applications, providing the most sustainable means to assess applications to the GHRU programme. NIHR expects all award-holders to follow and monitor their research activities against the NIHR Carbon Reduction Guidelines. This is outlined in call guidance, start-up information and progress reporting guidance. NIHR monitors compliance through a question on carbon reduction measures in each annual report. NIHR also encourages award-holders to consider alternatives to air and other carbon-emitting travel when reviewing changes to activities and/or budgets. Award-holders have acknowledged that travel restrictions linked to the COVID-19 pandemic showed that many research activities can be effectively carried out in hybrid, online or remote formats. The associated cost savings and reduction in environmental impact have been noted and continue to be pursued where appropriate. NIHR has strengthened expectations relating to actions to reduce carbon and minimise climate impact have in updates to the NIHR GHR Programmes core guidance in 2023.

6. Delivery, commercial and financial performance

6.1 Performance of awards on delivery, commercial and financial issues

Call 1 Units

For Call 1 Units, NIHR is currently reviewing final expenditure against budgets based on the Final Reconciliation (FSTOX) submitted by the award-holders. Underspend varies from 0% to 5%, with one award slightly overspent. The Contractor for this award will be underwriting the overspend. Overall, the total underspend for Call 1 is 2%. It is expected that final expenditure, including dissemination currently taking place after the end of the contracts, will be on target for this call.

As for financial challenges, several Call 1 Units struggled to deliver research activities during the COVID-19 pandemic, affecting spend across 2020 and thereafter. NIHR were able to award no-cost extensions in 2021 and 2022, however this meant that some award-holders had to revise budgets to account for salaries paid during the pandemic as well as other fixed costs. One Unit reported that the Contractor and LMIC partner institutions had to underwrite some of the ongoing operational costs during the no-cost extension period. NIHR acknowledges that costed extensions would have helped to mitigate this, however, there were no funds available to support additional costs for Call 1 Units beyond the call for costed extensions and the award extensions approved for Units in 2020.

Other issues reported across several Call 1 Units included: delays in payments due to administrative strikes, delays in finalising collaboration agreements, disruption of supply chains due to border closures and industry lockdowns, increases in consumable prices, wage inflation, diversion of staff time to support the pandemic response (thus delaying research activities), inflation driving a cost-of-living crisis, and increased cost of travel and research. One Call 1 Unit also mentioned the administrative burden of following up on invoices from partners at the end of the award. Since 2022, NIHR has revised its procedures for financial reporting, requesting transaction lines and invoices quarterly rather than at the point of reconciliation at the end of the award. Call 2 Units are following this new process, which should help spread the administrative effort across the award and simplify final reconciliations. In the last reporting period, some Call 1 Units have included ineligible items in their financial reports or claimed equipment purchases late in the award (i.e., last 6

months). The ineligible expenses will not be funded and NIHR is in the process of resolving outstanding issues through financial reconciliation.

NIHR recognises that financial guidance has evolved significantly since Call 1 Units were funded. The new processes outlined above should address some of the issues arising from Call 1 financial reconciliations. Overall, NIHR has led a steady continuous improvement in finance policy and guidance, worked to increase researchers understanding of funding rules and expectations which has in turn improved the quality of financial reporting from award-holders since the launch of the GHRU programme.

Call 2 Units

The four Call 2 Units funded in Phase 1 currently report underspend between 16% and 68% against Year 1 budgets (43% total underspend across the four awards). This is largely related to delays in start-up, particularly in agreeing and signing collaboration agreements with all partners. It is expected that this underspend will be resolved throughout the lifetime of the awards. Other financial challenges reported by the award-holders include higher cost of travel compared to those in the original agreed budget, and the impact of global inflation post COVID-19. Overall costs of goods and services required for research have escalated, and staff on fixed salary rates are increasingly at risk of not keeping pace with daily living expenses. NIHR recognises the challenges posed by the global economic situation for individuals and for activities funded under the GHRU programme and are engaging teams to advise on the planned mechanisms to help mitigate this impact during the award period. NIHR finance teams will continue to monitor costs to ensure value for money, as well as fairness and equity to all NIHR-funded awards and their staff.

Transparency - this question applies to funding schemes which include transparency obligations within their contracts.

- Delivery partner to provide the percentage of awards that are meeting International Aid Transparency Initiative (IATI) obligations (please refer to https://iatistandard.org/en/iati-standard/).

- If not 100%, please outline the reasons why.

The NIHR ODA Research Contract requires all award-holders to register with IATI and publish a dataset within 6 months of activity. This is checked in the 6-month report, and monitored by NIHR periodically via the IATI database using award IATI identifiers. All 13

Call 1 Units and all four Call 2 Units funded in Phase 1 (100%) have registered with IATI in compliance with this requirement.

Since this is a relatively new requirement, appropriate processes are not always in place in all contracted institutions. In recognition of this, NIHR continue to work with teams to support institutional adoption of the reporting requirements within the lifetime of the awards. NETSCC direct award holders to new DHSC IATI reporting guidance to support institutional compliance and report to DHSC quarterly on all portfolio award data.

7. Learning from Monitoring and Evaluation

7.1 Learning

The learning described in this section covers the period of September 2020 to September 2022 for Call 1 Units and the first year of activity of the four Call 2 Units, which started their contracts between July and October 2022. The long reporting period reflects that not all Units submitting full progress reports during their no-cost extension period. NIHR considered this to be proportionate, given the Units were largely catching up on COVID-19 delays and lighter touch interim reports were used. As such, there was no annual review for the 2021 reporting period. Some learning activities occurred after this reporting period and during the preparation of this report (up to May 2023) – this is clearly indicated.

Learning during the COVID-19 pandemic

Learning from the Units programme since the last report has been largely dominated by the COVID-19 pandemic and its effect on research in LMICs. Call 1 Units have been particularly affected. NIHR has worked flexibly with award-holders to ensure the viability of the research during those challenging times. During the pandemic, all monitoring was conducted remotely, and efforts were focussed on responding to the rapidly evolving situation, including changes to work programme to re-orient activities and reprofile budgets. NIHR developed a bespoke form for award-holders who wished to request rapid changes to carry out COVID-19 related work such as genomic sequencing and surveillance (TIBA) or adaptation/tailoring of existing interventions for lower respiratory tract infections including clinical trials (RESPIRE). These were assessed as quickly as possible given the challenging circumstances. However, some award-holders commented in their End of Award reports that the process to request changes was still too complex and lengthy to allow them to respond to pandemic challenges in an agile way.

Despite the best efforts of award-holders, NIHR and DHSC, the pandemic did affect the outcomes from the Call 1 Units programme. As previously mentioned, the administrative burden and financial management of no-cost extensions was challenging for award-holders who were seeking to retain and/or re-orient staff to the pandemic response while most research activities were paused. As a result, some award-holders were unable to produce all planned outputs before the end of the project. In line with financial policies, NIHR supports dissemination activities up to two years after the end of the GHRU contracts. This allows

costs for publication and other dissemination to continue (albeit not salaries of UK staff). For LMIC staff involved, there is now added flexibility to support their salary costs when associated with agreed dissemination activities delivered in the two years following the end of award.

Despite those challenges, Call 1 Units have been overall extremely successful in contributing to the aims of the GHRU programme. Through equitable partnerships, all thirteen Call 1 Units have produced significant outputs and impacts as exemplified in quotes and highlights throughout this report. Six Call 1 Unit award-holders secured further funding from NIHR for further GHR Units. In addition, all Call 1 Units secured further funding from other funders such as the Bill and Melinda Gates Foundation, Wellcome Trust, WHO and UKRI. NIHR also continues to engage Call 1 Units in communication campaigns, and in the development of the NIHR Global Health Research Journal and offers opportunities to publish articles and an overarching synopsis of the research in full open access. The NIHR GHR Journal will launch in 2023.

Learning activities across the last reporting period (September 2020-September 2022)

In May 2022, NIHR ran a series of two start up webinars to support award-holders – including Call 2 Units – in managing their NIHR contracts to increase understanding of reporting and other contractual requirements during the lifetime of the award. NIHR engaged with award-holders to highlight NIHR branding guidance for Global Health Research as well as the range of opportunities for them to work with NIHR communications in promoting emerging impact and timely news stories via NIHR communication channels and campaigns. Knowledge continues to be shared with wider portfolio of GHR programme award holders through the SLACK (messaging) platform, a regular NIHR Global Health newsletter, news items on funded GHRU awards and emerging impact stories including blogs on Global Health related themes on the NIHR website.

In direct response to learning and feedback from monitoring across the wider cohort of NIHR GHR portfolio of awards, NIHR has also been developing learning and development activities related to CEI. Key outcomes include a CEI podcast series, the development of an online CEI learning and development course, the development of a community of practice and regional networks, and initiation of a resource hub across award CEI leads. NIHR is also working with other global funders to develop a coherent suite of resources and learning opportunities to support development and sharing of best practice in CEI.

Once travel restrictions eased, NIHR staff had further opportunities to engage with award-holders. In November 2022, delegates from the NIHR team also visited a site of the GHRU

on Antimicrobial Resistance in Colombia, AGROSAVIA, during a combined DHSC/NIHR visit to Bogota.

NIHR staff also attended other events organised by award-holders and/or relevant Global Health Research networks (during and after the reporting period):

- In-person Independent Advisory Group (IAG) meeting for the Call 2 Unit on preventing stillbirths and neonatal death (July 2022)
- Event organised by the Royal College of Surgeons of England which included presentations by the GHRU on Global Surgery and other NIHR-funded Groups (27 October 2022)
- NIHR verbal presentations at launch annual events or other Units dissemination events for GHRU on Global Surgery, Vanguard, CleanAir Africa and IMPALA.
- Health Systems Global Symposium (HSG 2022) sessions led by award-holders, for example GHRU on Global Surgery

Attending events and meetings provides a welcome opportunity for NIHR to receive live updates on research progress. They also offer a space to discuss challenges and lessons learnt with a wider range of partners and/or collaborators compared to routine monitoring.

NIHR is also planning to deliver further networking and learning events for all award-holders across GHR Units and Groups, RIGHT, Global HPSR and Centres, including:

- CEI Leads Learning event, 17 May 2023
- Thematic Shared Learning Events, in September/October 2023

These initiatives respond to a demand from award-holders for more cross-award networking and collaboration, including more facilitation from NIHR. They also present an opportunity for NIHR to receive feedback on programme management, as well as develop cross-portfolio learning.

In December 2021, the DHSC commissioned Ecorys to undertake an evaluation of the first phase of the entire NIHR GHR portfolio (2016/17 to 2020/21). The evaluation's objectives are to assess the suitability of the design and implementation of the portfolio for achieving its intended results, and to identify key learning to inform development and delivery of the portfolio's second phase (2021/22 onwards). In addition, the evaluation aims to provide accountability for the GHR portfolio performance to date, determining the Value for Money (VFM) of investments, and assessing whether the portfolio is on track to achieve desired outcomes and long-term impact. Through this process survey data, annual reports and

reviews from all Call 1 Units and partners have informed the evaluation. Ecorys has interviewed researchers and in-country beneficiaries from two Units (GHRU on Global Surgery and ASSET) to help inform contextual learning. The final report will publish by March 2024.

- Key lessons

The key lessons are recorded in Table 9 below. These are based on an internal assessment by NIHR of the delivery of the Global Health Research Units programme between September 2020 and May 2023 (time of writing this report). They include lessons about internal and external communication, award monitoring, and commissioning of new awards. These lessons have been raised with DHSC as appropriate and actioned where possible. Some examples of follow-up actions are also included in table 9.

Table 9: Key lessons for the Global Health Research Units programme (September 2020-September 2022)

Theme(s)	Situation	Lesson learnt	Status
Impact of COVID-19 pandemic	**Worked well:** Several awards were able to make significant contributions to the pandemic response in LMICs. NIHR supported awards to pivot resources and change work packages to better understand the virus and how governments could protect their populations.	GHRUs need flexibility to change work programmes when faced with challenges and fast-changing global contexts. NIHR regularly reviews its processes to ensure they are proportionate while still allowing an appropriate level of scrutiny, especially when budget changes are involved.	Actioned
	Could be improved: Some award-holders considered the approval process for changes to work programmes and no-cost extensions to be too complex and lengthy. There was also a lack of clarity around no-cost extensions, i.e., the possible timing/length of extension that award-holders could request. Financial management during the Call 1 Units no-cost extensions was also complex, due to the lack of further funds beyond those already allocated	NIHR acknowledges that there were high levels of uncertainty during the pandemic and guidance was frequently changing. Since then, NIHR has developed its process for awarding no-cost extensions, including clearer guidance for Global Health Research award-holders. NIHR and DHSC are exploring mechanisms to award costed extensions and plans for a more regular GHR call pipeline.	Actioned
Finance	**Worked well:** NIHR is seeing increased accuracy and understanding of funding rules for award-holders using updated financial reporting processes (Call 2 Units).	The new process for quarterly financial reporting with the inclusion of transaction listings and discussions with teams where issues are identified is working as intended.	Actioned
	Could be improved: Payments in arrears, as per DHSC and NIHR policy, continue to be a challenge for LMIC institutions as previously reported. It causes affordability issues in LMICs, and the risk of advance payments is largely shouldered by UK Contractors.	While NIHR does not encourage advance payments by UK institutions, in practice, these are often the most viable option for the operation of research in low-resource contexts. The cross-NIHR finance working group is reviewing more flexible arrangements to better reflect this reality and support award-holders.	To keep under review
Monitoring	**Worked well**: in-person meetings with award-holders enabled NIHR and DHSC staff to better contextualize the research, identify impact, and support a positive relationship between funder and award-holders.	Event attendance should be carefully planned to achieve the most out of the engagement with award-holders and their stakeholders in LMICs. More collaborative monitoring approaches can achieve similar benefits to in-person engagement. Several proposals from NIHR staff are being reviewed internally to promote this	To keep under review

	Could be improved: Some Call 1 Units struggled with the administrative burden of reporting as well as due diligence requirements. There have also been delays to awards due to late signing of collaboration agreements.	NIHR is proactively addressing bureaucracy in research and is reviewing the reporting requirements throughout the life of the awards. Call 2 Units should see the benefits of the more proportionate monitoring approach in the next period. NIHR is also working to ensure its due diligence procedures are robust and fit-for-purpose without placing an undue burden on applicants. Contracts are usually required to start within a 3-month window to ensure ODA budget is utilised as predicted although some flexibility is possible. Agreement and early signing of collaboration agreements is encouraged from funding outcome.	To keep under review
Commissioning	**Worked well:** Some Call 1 Units secured further funding in Call 2, and some previously funded Groups (Call 1/Call 2) were able to secure a Unit award.	The success of awards in securing new funding shows NIHR GHR programmes are generating sustainable and equitable partnerships, which are strengthening capacity for research, grantsmanship and developing research leaders in LMICs.	Actioned
	Could be improved: The funding of Call 2 Units in two phases caused delayed funding decisions and, for some applicants who previously had GHR Groups or Units funding, this led to concerns regarding continuity of team between awards. Some previously successful Call 1 Units did not secure further funding, affecting the sustainability of the research and partnerships.	The post-pandemic ODA funding and research landscape was extremely challenging. The Units Call 2 call was split into two phases in response to Units requests for longer to apply to calls given significant COVID-19 impacts on teams. This phasing led to unintended consequences and to a need to hold over a proportion of decisions to ensure equity to all those applying in phase 2. This approach will not be repeated for future calls. No cost extensions were supported on a case-by-case basis. NIHR's independent Funding Committees follow a very rigorous assessment process, and all decisions are therefore final. However, NIHR actively ensures all applicants receive the highest quality of feedback. Any process concerns raised by applicants are investigated and responded to. NIHR has also introduced a 2-stage application process across GHR programmes to reduce applicant burden. The funding scale descriptors have been improved.	Actioned

7.2 Key milestones/deliverables for the awards for the coming year

Key milestones/deliverables for coming year	**Target date**
Induction of New Programme Director for Global Health from 1 July 2023	September 2023
Scoping and development of NIHR CEI principles and guidance	September 2023
Online CEI Learning and Development modules to launch	September 2023
Review the GHR Units Theory of Change	Autumn 2023
NIHR virtual series of shared learning events (open to all award-holders) to support learning, collaboration, and provide award holder support and feedback (including Call 2 Units)	First event to be delivered 1 November 2023
Launch of NIHR Global Health Research Journal in 2023, with publications from Call 1 Units	Autumn 2023
Approval for a regular pipeline of future Units calls in agreement between NIHR and DHSC	Autumn 2023
Supporting and disseminating impact arising from phase 1 Units awards	Autumn 2023
Independent Evaluation of NIHR GHR Programmes Phase 1 by Ecorys, including Call 1 Units and future recommendations	First quarter 2024
Undertaking planned assurance visits in LMICs, including Call 2 Units	First quarter 2024

Annex A: Full list of Unit awards

Table A1: List of Call 1 Units

NIHR ID	Title	Short title	DAC-list countries
16/136/111	NIHR Global Health Research Unit on Genomic Surveillance of Antimicrobial Resistance, University of Oxford		Colombia, India, Philippines, Nigeria
16/136/100	NIHR Global Health Research Unit on Health in Situations of Fragility at Queen Margaret University, Edinburgh		Lebanon, Sierra Leone
16/136/68	NIHR Global Health Research Unit on Diabetes and Cardiovascular Disease in South Asians, Imperial College London		Bangladesh, India, Pakistan, Sri Lanka
16/136/46	NIHR Global Health Research Unit on Mucosal Pathogens (MPRU), University College London	MPRU	Gambia, South Africa, Mali, Malawi, Kenya, Nigeria, Senegal, Uganda, Ghana
16/136/87	NIHR Global Health Research Unit on Improving Health in Slums at University of Warwick		Kenya, Bangladesh, Pakistan, Nigeria
16/136/77	NIHR Global Health Research Unit Action on Salt China (ASC), Queen Mary University of London	ASC	China
16/136/35	NIHR Global Health Research Unit on Lung Health and Tuberculosis in Africa at LSTM	IMPALA	Ethiopia, Sudan, Ghana, Nigeria, Kenya, Uganda, Tanzania, Malawi, South Africa
16/136/79	NIHR Global Health Research Unit on Global Surgery, University of Birmingham	GlobalSurg	India, South Africa, Benin, Ghana, Mexico, Nigeria, Rwanda
16/136/29	NIHR Global Health Research Unit on Neglected Tropical Diseases, BSMS		Ethiopia, Sudan
16/136/102	NIHR Global Health Research Unit on Global Diabetes Outcomes Research, University of Dundee	INSPIRED	India, Ethiopia, Nigeria
16/136/54	NIHR Global Health Research Unit on Health System Strengthening in Sub-Saharan Africa, King's College London	ASSET	South Africa, Sierra Leone, Zimbabwe, Ethiopia
16/136/109	NIHR Global Health Research Unit on Respiratory Health (RESPIRE) at The University of Edinburgh	RESPIRE	Bangladesh, Malaysia, India, Pakistan
16/136/33	NIHR Global Health Research Unit on Tackling Infections to Benefit Africa, The University of Edinburgh	TIBA	Botswana, Ghana, Uganda, Kenya, Tanzania, Sudan, South Africa, Rwanda, Zimbabwe, Congo Republic

Table A2: List of Call 2 Units (Phase 1 contracted between July and October 2021)

NIHR133364	NIHR Global Health Research Unit on Global Surgery: Establishing a Sustainable Network of Surgical Research		Benin, Ghana, Mexico, India, Nigeria, Peru, Rwanda, South Africa
NIHR131996	NIHR Global Health Research Unit on Neglected Tropical Diseases at Brighton and Sussex Medical School (Phase 2)		Ethiopia, Rwanda, Sudan
NIHR132960	NIHR Global Health Research Unit and Network for Diabetes and Cardiovascular disease in South Asia		Bangladesh, India, Pakistan, Sri Lanka
NIHR132027	NIHR Global Health Research Unit on the prevention and management of stillbirths and neonatal deaths in Sub-Saharan Africa and South Asia		Malawi, Tanzania, Uganda, Zambia, Zimbabwe, India, Kenya, Pakistan

Annex B: Clearance checklist

	Name	Date
Annual Report sections completed by (within delivery partner organisation)		
Annual report read and annual review sections completed by (DHSC) with input from transparency sub-team	[redacted]	15 September 2023
Annual review shared and signed off by (within delivery partner organisation)	[redacted]	4th October 2023
Annual review signed off by (DHSC)	[redacted]	4th October 2023
SRO sign off for publication	[redacted]	

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