Department of Health & Social Care

GHR Call 1 Units Annual Review - Year 3

NIHR Global Health Research Portfolio

Published October 2021

Contents

Acronym and Abbreviation Definitions

AFIDEP	African Institute for Development Policy
AMR	Anti-microbial resistance
ASC	Action on Salt China
BMGF	Bill and Melina Gates Foundation
BSMS	Brighton and Sussex Medical School
CA	Collaboration agreement
CDC	Centre for Disease Control
CDT	Centre for Innovative Drug Development & Therapeutic Trials
CEI	Community engagement and involvement
COMAHS	College of Medicine and Allied Health Sciences, Sierra Leone
COPD	Chronic obstructive pulmonary disease
COVID-19	Coronavirus disease
CTP	Change to programme
DfID	Department for International Development, UK
DHSC	Department of Health and Social Care, UK
ECG	Electrocardiogram
EFHA	Education for Health Africa
FAF	Financial assurance fund
FCDO	Foreign, Commonwealth and Development Office
FTE	Full time equivalent
GBP	Great British Pounds
GCRF	Global Challenges Research Fund
GFGP	Good Financial Grant Practice
GHR	Global Health Research
GHRU	Global Health Research Unit
GSU	Global Surgery Unit
HEI	Higher education institution
HIC	High income country
HR	Human resources
HRCS	Health Research Classification System
HSSI	Health systems strengthening interventions
IATI	International Aid Transparency Initiative
ICAI	Independent Commission for Aid Impact
IP	Intellectual property
ISO	International Organization for Standardisation
IT	Information technology
KEMRI	Kenya Medical Research Institute
KIMS	Kerala Institute of Medical Sciences
LMIC	Low- and middle-income country
LSTM	Liverpool School of Tropical Medicine
MI	Myocardial infarction

MIS	Management information system
MPRU	Mucosal Pathogens Research Unit
MRC	Medical Research Council
NCE	No-cost extension
NETSCC	NIHR Evaluation, Trials and Studies Coordinating Centre
NGO	Non-governmental organisation
NIH	National Institution for Health
NIHR	National Institute for Health Research, UK
NCD	Noncommunicable disease
NTD	Non-transmissible disease
ODA	Official Development Assistance
PATS MECOR	Pan African Thoracic Society Methods in Epidemiologic, Clinical and Operations Research
PCR	Polymerase chain reaction
PPE	Personal protective equipment
QSTOX	Quarterly statement of expenditure
RAG	Red/amber/green rating
RCT	Randomised controlled trial
RESPIRE	NIHR Global Health Research Unit on Respiratory Health at The University of Edinburgh
SARS-COV-2	Severe acute respiratory syndrome coronavirus 2
SE	South-East
SLACK	Searchable Log of All Communication and Knowledge
TB	Tuberculosis
UCL	University College London
UCT	University of Cape Town
UK	United Kingdom
UKCDR	UK Collaborative on Development Research
UKRI	UK Research and Innovation
US	United States
WHO	World Health Organisation
WP	Work package

Annual reporting and review process

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. Within these common sections, sub-sections have been included to enable us to monitor progress against planned activities, test our portfolio Theory of Change using evidence collected on outputs and outcomes in accordance with the NIHR GHR portfolio results framework.

The process for completing this template involves the following steps:

1. DHSC works with partners responsible for delivering a funding scheme to 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.

3. This report is then shared with DHSC for comment and feedback.

4. 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.

5. Annual review signed off and published.

1. DHSC summary and overview

1.1 Brief description of funding scheme

The NIHR Global Health Research Units and Groups call 1 launched in 2016 and was the first large entirely researcher-led funding programme in the Global Health Research portfolio. UK universities and research institutes were invited to submit applications to either expand or develop their ambitions to deliver world-class applied global health research, working in equitable partnerships with researchers in low-and middle-income countries (LMICs) to address under-funded or under-researched global health areas specific to those countries.

Applications were invited for two schemes:

- NIHR Global Health Research Units: Universities and research institutes with an existing track-record of delivering internationally recognised research who wished to consolidate and expand this work. Funding available: Up to £7m over four years per Unit.

- NIHR Global Health Research Groups: Existing specialist academic groups who wished to expand into the field of global health, especially in shortage areas of research. Funding available: Up to £2m over three years per Group.

This report specifically focuses on the 13 Units from the first call, covering a wide range of themes and geographical areas, and reports on their progress and performance in year 3 of their contracts (July 2019 – Sept 2020).

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 13 projects in this cohort, NETSCC assessed 11 projects to be largely on track to deliver, with one project rated amber and one red due to operational and fiduciary risks. NETSCC keep financial and overall delivery under close review, particularly in the context of the ongoing pandemic and DHSC will monitor this through updates NETSCC provide ahead of monthly programme management meetings. NETSCC have reviewed and accepted changes to programmes where justified to assist project teams to deliver against their programme of work and respond to changing contextual factors.

The Units cohort is demonstrating significant influence on policy, practice and community behaviour. For example, a recommendation made by one Unit to screen adults for Chronic Obstructive Pulmonary Disease who attend healthcare facilities for breathlessness has been adopted by the Ministry of Health in Cameroon. The Ministry of Health in Bangladesh has been influenced by one Unit to roll out pulse oximetry nationally which should

substantially improve the quality of services for children under five years old at risk from pulmonary diseases. On an international level, one Unit is collaborating with the WHO Regional Office for Africa to formulate a roadmap to help countries in the region develop strategies to address identified weaknesses in their health care systems.

There are significant examples of influence on practice at national and sub national levels. For example, the provision of a free mobile clinic for diabetes diagnosis and treatment has reported a participation rate of close to 90% in rural areas of India, providing evidence of a marked increase in diabetes prevalence with nearly 40% of the population now with a pre-diabetic or diabetic diagnosis.

There are secondary benefits to the UK, too. The work of one Unit has supported pathogen surveillance efforts at Public Health Wales and Public Health Scotland by providing expertise for installing local software to streamline data processing of COVID-19 data and to aid visualisation of genomics data.

Many of the outputs generated during this period have the potential to directly impact on the quality of clinical care available to some of the world's most vulnerable populations. For example, the Covid-Surg platform, established by the NIHR GHR Unit on Global surgery to explore the impact of COVID-19 on surgical patients and services has published data in the British Journal of Surgery and the Lancet, and results incorporated into WHO guidance, with patient resources being translated into 22 different languages.

Across the cohort there is rich evidence of community engagement and inclusion, despite the challenges presented in carrying out face to face activities during varying restrictions across countries. Several Units reported identifying and including vulnerable groups in their research through community engagement, for example elderly populations in rural areas, migrant workers and people living with disabilities and stigma. There is strong evidence across the cohort of co-production and co-design of research interventions and evidence of adapting approaches to ensure research is relevant to local contexts. For many, collaborating with community members has provided insight into what is needed in various areas and highlighted barriers and enablers to participation in research projects.

1.3 Performance of delivery partners

During this reporting period, the onset of the COVID-19 pandemic led to several challenges with regards to managing the existing portfolio and managing risks to delivery. As a result, both DHSC and NETSCC have faced a number of challenges in managing global health research projects during a pandemic and have worked closely to maintain flexibility to continue to support projects and managing high volumes of change to programme requests and variation to contract requests to help mitigate emerging delivery risks. Even in the context of these challenges, the relationship continues to work well. Both NETSCC and DHSC teams continue to collaborate to agree timelines for deliverables

which accommodate, as best possible, existing commitments and resources.

A vast amount of learning has been incorporated from the process for Call 1 Units and Groups Year 2 annual reviews and both NETSCC and DHSC continue to reflect on how the process can be further streamlined. NETSCC continue to closely monitor all projects and are in regular communication with Units.

Where any complex, financial or sensitive challenges are experienced, NETSCC have escalated their recommendations to DHSC for input and approval, in line with the NIHR Global Health Research Escalation Policy. NETSCC continue to closely monitor the impact of the COVID-19 pandemic on this cohort through quarterly financial monitoring. Updates on delivery and finance are provided ahead of monthly Programme Management Meetings (PMMs).

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

From a programme management perspective, following the introduction of the annual review process, NETSCC identified a need to require award-holders to state and to agree *key* milestones annually (in line with original agreed project aims) against which they can be monitored by NETSCC as part of the annual review. This cohort have now agreed the year 3 milestones, which were reported against in this round of reports. NETSCC's monitoring approach has contributed to programme level improvements such as informing content for new funding calls, modifying and clarifying NIHR guidance to funded teams, and identifying more efficient and streamlined ways of capturing data. The GHR programme policies and processes have been reviewed and further policies and guidance developed. In the period, significant learning in the delivery of virtual meetings particularly involving global membership has been shared across NIHR to improve ways of working both between DHSC and NETSCC but also with external funding committees and teams.

Additionally, assurance and risk management processes incorporate lessons from FCDO and UKRI. A due diligence template and an assurance template have been agreed along with associated guidance. In February 2020, in-country assurance visits were made to Rwanda and South Africa, to provide opportunities for reviewing in-country partner progress and equity of relationships with the UK, testing NIHR assurance processes and policies, and compliance with DHSC contractual terms. In-country presentations given by NIHR staff, and feedback was sought to inform shared learning and best practice. Learning from these visits is informing considerations for future assurance processes.

The Call 1 Units did not initially have a contractual obligation to meet the IATI standard by reporting data relating to ODA funding to the IATI registry. New clauses on requirements for contracting institutions to report to IATI were introduced for the majority of teams where

they were successful securing costed or no costed extensions in May 2020. These clauses will be incorporated in any new funding contracts.

1.5 DHSC to summarise key recommendations/actions for the year ahead, with ownership and timelines for action

Recommendation	Owner	Timeline
Explore through the Assurance Working Group how best to conduct virtual assurance visits and share learning	NETSCC	July 2021
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
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
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
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

2. Summary of aims and activities

2.1 Brief outline of each award's/funding call aims

The GHR research portfolio is underpinned by three core principles and requires that all research funded must:

1. meet eligibility criteria as ODA
2. deliver high-quality applied health research, building on the NIHR principles of Impact, Excellence, Effectiveness, Inclusion and Collaboration
3. strengthen research capability and training through equitable partnerships.

The first NIHR Global Health Research Units and Groups call launched in 2016. UK universities and research institutes were invited to submit applications to either expand or develop their ambitions to deliver world-class applied global health research, working in equitable partnerships with researchers in low-and middle-income countries (LMICs) to address under-funded or under-researched global health areas specific to those countries.

Applications were invited for:

- **NIHR Global Health Research Units**: Universities and research institutes with an existing track-record of delivering internationally recognised research who wished to consolidate and expand this work. Funding available: Up to £7m over four years per Unit.

- **NIHR Global Health Research Groups**: Existing specialist academic groups who wished to expand into the field of global health, especially in shortage areas of research. Funding available: Up to £2m over three years per Group.

The aims of NIHR Global Health Units are:

1) To support UK institutions with an international track-record to undertake high quality applied health research relevant to the needs of low-and middle-income countries

2) To generate high-quality policy/practice relevant research outputs that respond to global health research priorities, identified through priority-setting by the relevant LMIC

3) To strengthen existing equitable partnerships with researchers in countries on the Development Assistance Committee list, drawing on LMIC and UK expertise between LMIC and UK institutions, to ensure equity and to extend partnerships, collaborations and networks

4) To strengthen capacity and capability in research and research support within LMICs at individual and institutional level through formal and informal training to support sustainability

5) To promote the engagement of key stakeholders including public and patient involvement in the design and conduct of the research to ensure research to support dissemination and uptake

6) To demonstrate pathways to impact through effective stakeholder engagement, dissemination and knowledge exchange to ensure research findings and learning is widely shared with and across low resource settings, to inform policy and practice and ensure results and all outputs are published in open access journals

This report focuses on the activities of the 13 Units funded, over the third year of the four-year contracts (a 12-month reporting period falling between July 2019 and September 2020 based on contract start dates). The individual aims of each of the 13 Units funded are set out in Table 1. A full list of all funded projects can be found on the NIHR Funding Awards page.

Table 1. Aims of each Call 1 Unit

Project Title	Project Aims	Countries
NIHR Global Health Research Unit on Health in Situations of Fragility at Queen Margaret University, Edinburgh	Aims to deliver a systematic programme of research that identifies means of strengthening service quality, accountability, access and uptake in two regions, West Africa and the Middle East, characterised by significant but contrasting patterns of fragility.	Lebanon Sierra Leone
NIHR Global Health Research Unit on Global Diabetes Outcomes Research, University of Dundee	The programme aims to establish the partnership of the Dundee group with the Madras Diabetes Research Foundation in Chennai with the training of a new generation of big data analysts in the analysis of linked molecular and clinical data, including the deep data mining of imaging and clinical datasets.	India
NIHR Global Health Research Unit on Respiratory Health (RESPIRE) at The University of Edinburgh	A UK and LMIC partnership that aims to improve respiratory outcomes from common communicable and non-communicable disorders.	India Malaysia Pakistan
NIHR Global Health Research Unit on Genomic Surveillance of Antimicrobial Resistance, Wellcome Trust Sanger Institute	The aim of the Unit is to provide actionable data derived from a global genomic surveillance network, that will inform patterns of AMR and public health policies to control high-risk bacterial pathogens.	Colombia India Nigeria Philippines
NIHR Global Health Research Unit on Neglected Tropical Diseases, BSMS	The Unit aims to improve the ability of low-income countries to diagnose, prevent and treat podoconiosis and scabies and to develop tools to prevent mycetoma where there is no effective treatment.	Ethiopia Sudan
NIHR Global Health Research Unit on Tackling Infections to Benefit Africa, The University of Edinburgh	The Unit aims to reduce the burden and threat of infectious diseases in Africa by informing and influencing health policy and strengthening health systems.	Botswana Congo Ghana Kenya Rwanda South Africa Sudan Tanzania Uganda Zimbabwe

NIHR Global Health Research Unit on Lung Health and Tuberculosis in Africa at LSTM	The Unit aims to improve the health of children and adults in Africa through multi-disciplinary applied health research on lung health and TB.	Cameroon Ethiopia Ghana Kenya Malawi	Nigeria South Africa Sudan Tanzania Uganda
NIHR Global Health Research Unit on Mucosal Pathogens (MPRU), University College London	The Unit aims to address the limitations in long-term effectiveness of current vaccines in LMICs, MPRU aims to reduce mucosal pathogen carriage & transmission to achieve herd protection against life-threatening endemic/ epidemic disease.	Gambia Ghana Kenya Malawi	Mali Nigeria South Africa Uganda
NIHR Global Health Research Unit on Health System Strengthening in Sub-Saharan Africa, King's College London	The Unit aims to test the practicability and effectiveness of HSSI to build capacity across platforms to deliver high quality guideline-based continuing care in Sub-Saharan Africa.	Ethiopia Sierra Leone South Africa Zimbabwe	
NIHR Global Health Research Unit on Diabetes and Cardiovascular Disease in South Asians, Imperial College London	The Unit aims to create an inter-disciplinary environment that fosters development and implementation of acceptable, equitable, scalable and sustainable approaches to reduce the burden of diabetes and heart disease in Bangladesh, India, Pakistan and Sri Lanka.	Bangladesh India Pakistan Sri Lanka	
NIHR Global Health Research Unit Action on Salt China (ASC), Queen Mary University of London	A UK and LMIC partnership that aims to reduce salt intake amongst the poorest and most vulnerable populations through research and public health programmes.	China	
NIHR Global Health Research Unit on Global Surgery, University of Birmingham	The Unit aims to create a sustainable platform where patients and surgeons from LMICs can identify priority areas, perform studies to find solutions, and find ways to bring these solutions to their patients.	Ghana India Mexico Nigeria	Pakistan Philippines Rwanda South Africa
NIHR Global Health Research Unit on Improving Health in Slums at University of Warwick	A UK and LMIC partnership that aims to improve health services in slums within LMICs.	Bangladesh Kenya Nigeria Pakistan	

Global Health Research themes across the 13 funded NIHR Units in Call 1

Figure 1. The number of individual Call 1 Units (total = 13 Units) categorised and grouped into broad research themes, based on their individual HRCS code. Note that each Unit's research topic can cover multiple themes

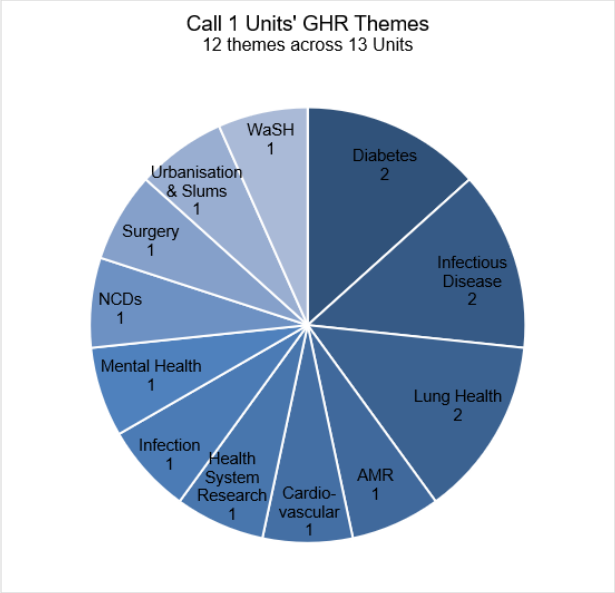


Figure 1 themes were based on the 13 individual Unit award HRCS classifications further grouped into 12 broad related themes. The portfolio is diverse, with diabetes, infectious disease and lung health being the predominant research themes, followed by a range of topics including anti-microbial resistance, health system research, mental health, and surgery.

Global geographic distribution of distinct Unit awards in LMICs

Figure 2. Heat Map showing LMIC location and number of Call 1 Units awards

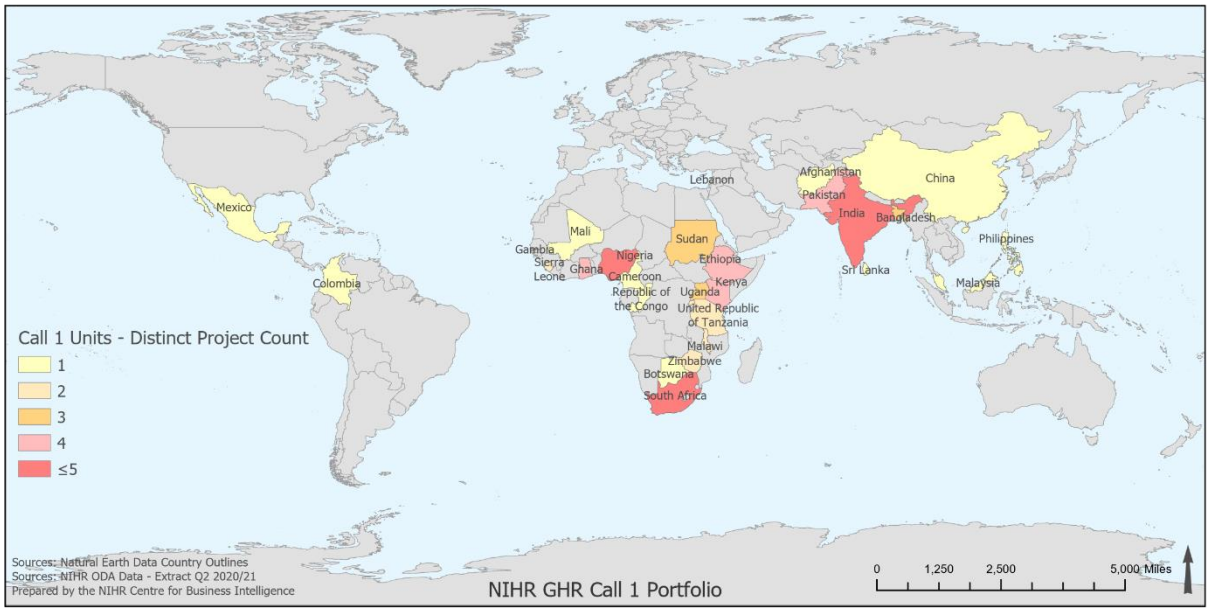


Figure 2 shows the global geographic distribution of the 13 Unit awards with a partnership in an LMIC (single LMIC counts per project). Non-LMIC partners (not shown) were eligible, where involvement was clearly justified and brought expertise not available within LMICs

and supported ODA eligible research activities. The highest concentration of Unit awards in LMICs can be found in India, Nigeria and South Africa.

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

NETSCC actively monitor and RAG rate the performance of each Unit on a quarterly basis in terms of overall progress. This reporting period (July 2019- September 2020) included the onset of the COVID-19 pandemic with research teams reporting the effects on their projects Eleven of the thirteen units were rated green; one unit rated amber due to operational risks; and one rated red due to both operational, and fiduciary risks. NETSCC continue to work with these teams to manage risks and support project progress. Twenty five changes to programme (including virement requests) from 10 units were approved in the reporting period specifically to ensure projects could effectively deliver their programme of work and respond to changing contextual factors; once the necessary financial change requests and approvals are approved the RAG rating is then reassessed.

RAG scores were recently determined based on the rating of project progression against milestones and deliverables, communication of issues with NETSCC, and identified risks and their mitigation within the following areas: financial, fiduciary, operational, legal/governance, safeguarding and reputational. Each risk is scored based on likelihood and impact and the combined score used to determine a final rating (red, amber or green). If a fiduciary risk is identified, this is generally weighted as red as it requires urgent attention and further mitigation. Green ratings reflect no unmitigated risks to progress/funded outcomes, amber ratings reflect some risks to progress/funded outcomes requiring mitigation and red ratings reflect significant risks to progress/funded outcomes requiring urgent mitigation. The ratings reflect an overview of project risk ratings within the reporting period (July 2019- September 2020) undertaken retrospectively.

Community Engagement and Involvement (CEI)

(a) Inclusion: Which vulnerable and/or at-risk groups have been identified through community engagement and mapping exercises

(b) Participation and two-way Communication

(c) Empowerment, Ownership, Adaptability and Localization:

Inclusion

Several Units reported specific details on activities relating to the identification and inclusion of vulnerable and/or at-risk groups. Such groups included people living with disease in remote areas and/or poor areas as well as populations with limited health literacy who may be reluctant to seek medical information and interventions. Other examples include the elderly living in the rural areas, migrant workers and those living with disabilities and stigma. Where the needs of such populations are different, Units reported adaptation and localisation of CEI activities and interventions. Such vulnerable populations were generally reached and engaged through local community members who work as part of the research team.

Participation and two-way Communication

Units reported involvement in numerous **public engagement and community sensitisation activities**. Activities included educational and awareness raising events such as public talks and conference exhibits as well as meetings with key members of communities, such as village leaders, community health workers and members of the local communities themselves. Communities were engaged through a variety of **outreach events**: theatre performances, school plays, community feedback meetings as well as using radio, websites and social media. Examples of **two-way communication** include disseminating research findings in the community through monthly knowledge exchange meetings and meeting with patients to receive feedback on how patient experience can be improved. One Unit created platforms in all sites for CEI members to express their hopes regarding the immediate changes and improvements the research project can bring. Their expectations included the hope for new services such as a primary health care clinic and an ambulance service and requests for access to treatment and health advice from partner institutions. One Unit noted the importance of clear communication with the community on the scope and limitations of the research so expectations were appropriately managed.

Empowerment, Ownership, Adaptability and Localisation

Units described the importance of considering communities' views, beliefs, traditions and culture when engaging with them and how these may then influence the research project and approaches used. Incorporation of CEI into the planning, implementation and dissemination stages of research was reported. This also included examples of CEI before the study to assess acceptability of the proposed research to the community. Co-design of research with communities included their input in development of research materials such as patient information sheets, protocols and questionnaires giving communities a sense of ownership and empowerment. To enable engagement in research, Units described adaptations of planned engagement processes such as enabling dedicated sessions for women, and separately to those for men in particular countries. Adapting of interventions or the research through CEI ensured they were appropriate to the local context and social/cultural norms and enabled communities to have a sense of ownership of the research.

"Collaborating with community members has provided insight into what is needed in various areas and highlighted barriers to participation in research projects. Understanding barriers and enablers has ensured that RESPIRE researchers can amend their recruitment process, inclusion/exclusion criteria in order to increase recruitment numbers and ensure relevance of the research to the local communities. In addition, by increasing awareness of respiratory conditions and RESPIRE research, our RESPIRE colleagues are providing essential respiratory education that is specific to the local population..." [NIHR Global Health Research Unit on Respiratory Health (RESPIRE) at The University of Edinburgh]

Activities were mostly led by CEI leads in partner countries with community advisory boards often established to provide input into project planning, community sensitisation activities and facilitate general consultation. CEI activities in projects has helped develop local knowledge and increase the CEI profile in countries where knowledge is limited. Units described delays to CEI activities due to the COVID-19 pandemic with reports of expanding virtual communication and use of social media to aid engagement. However, not everyone has access to the technology and therefore the more vulnerable people in the community may be missed. Furthermore, the quality of engagement and trust may be affected without face to face interaction.

3. Outputs and outcomes

High quality policy/practice relevant research and innovation outputs

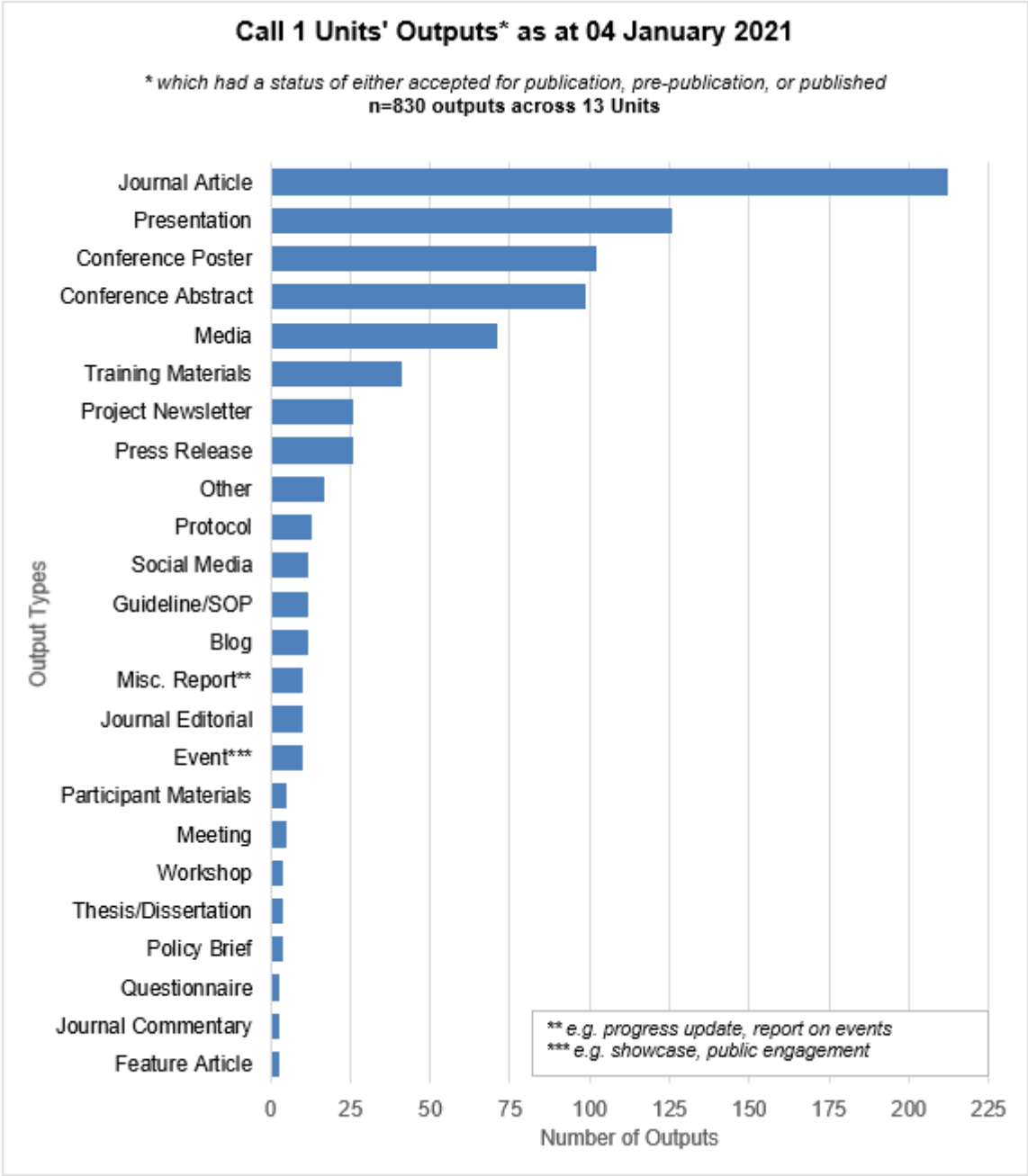
3.1 Aggregated number of outputs by output type.

NIHR guidance requires awards to report on a broad range of outputs, which can include a range of publication types, and other research outputs such as guidelines. In this period output reports were required to be submitted 14 days ahead of any intended publication.

Figure 3 displays the cumulative number of output types reported by Call 1 Units which at a minimum had been accepted for publication, were in pre-publication, or had been published by 04 January 2021. All Units reported having an accepted, pre-publication or published output since the start of their programme of work, with the most frequently reported output types being journal articles (26%, n=212), presentations (15%, n=126), and conference posters (12%, n=102). The cumulative total number of outputs reported in year 3 (830) is an increase of 55% compared to the total (537) reported at the end of year 2.

Grouped together under ‘Other’ in the chart below are the following output types, of which one of each was reported: whole book, Cochrane review, database, film, online opinion piece, software/algorithm, systematic review, toolkit, webinar, and in addition the following, of which two of each were reported: journal abstract, policy brief template, scoping review, showcase/conference booth.

Figure 3 Number of outputs by type of output



* Data on output numbers and types are generated through self-reported notifications from research teams through the NETSCC MIS as an ongoing activity over the lifecycle of their awards. Following submission of annual reports between 1 July - 5 September 2020, the report on final numbers and types of outputs was run in January 2021 to ensure a complete and accurate data set, noting that when output notifications are submitted retrospectively it is sometimes difficult to ascertain exactly when the publication was accepted for publication.

3.2 List of research and innovation outputs produced that are considered **by award holders** to be most significant in contributing towards high quality applied global health knowledge with strong potential to address the needs of people living in low- and middle-income countries.

Outputs reported as 'significant' by the Call 1 Units in contributing towards high quality applied global health knowledge with strong potential to address the needs of people living in low-and middle-income countries, spanned a wide variety of mediums including, journal articles, blog posts, toolkits, presentations, conference sessions, and public engagement activities. Several Units reported publications in both high impact factor journals such as the British Medical Journal, British Journal of Surgery, and The Lancet, and various disease-specific journals. Some outputs (e.g. guidelines, and development of more locally relevant predictive values for spirometry) may have a direct impact on the quality of clinical care available to some of the world's most vulnerable populations, while others (e.g. publication of the first LMIC-orientated surgical trial protocol) have the potential to contribute toward increasing research capacity in LMICs.

Examples of particularly impactful outputs identified by the teams include:

Development of predictive values for a Western Indian population – European Respiratory Journal, 2020

The NIHR Global Health Research Unit on Respiratory Health (RESPIRE) at The University of Edinburgh published a paper highlighting their findings on the importance of using ethnically appropriate normal population values* when conducting spirometry tests. Historic reliance on normal values derived from Caucasian population data had contributed to the misdiagnosis of lung disease in the Western Indian population. The team used spirometry data collected by the Vadu Health and Demographic Surveillance System to develop a set of recommended values and equations for this population. This approach has the potential to transform the interpretation of lung function in this region.

* '*Normal population values' are the measurements you would expect to see in an 'average person' in a particular population. The average person in one country or from one ethnic group may be different to the average person in another country or ethnic group, so it is important that medical professionals do not compare people to an average calculated for a different population.*

The Covid-Surg platform - The NIHR Global Health Research Unit on Global Surgery, University of Birmingham, established the Covid-Surg platform in March 2020 to explore the impact of COVID-19 on surgical patients and services. The platform is delivering two major cohort studies and several modelling and auxiliary studies, some of which are led by LMIC partners. Early data was published in the British Journal of Surgery and The Lancet, and a guideline was published in the British Journal of Surgery. The results were taken up by several national surgical societies and incorporated into WHO guidance. The platform has also developed patient resources, produced through CEI and guidance, which have been translated into 22 languages.

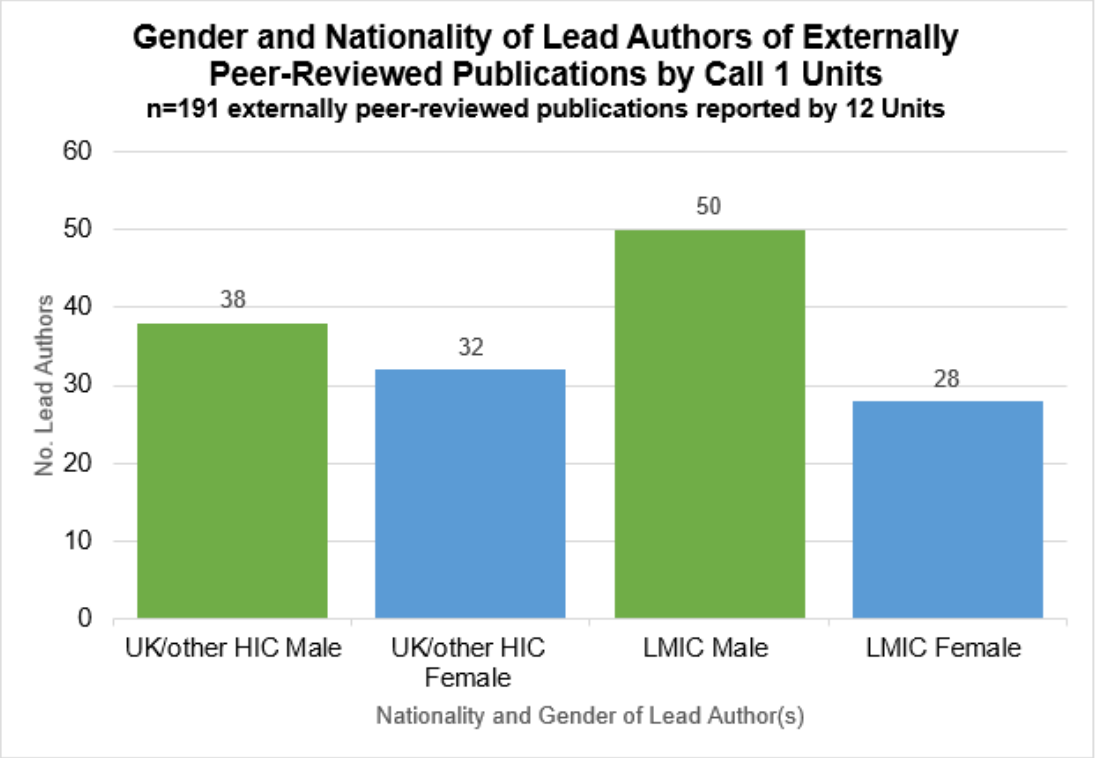
Engagement with key stakeholders has been achieved through meetings and conferences; an example is a symposium on post-TB lung disease, hosted by Stellenbosch University and attended by 68 delegates from 27 institutions, 12 disciplines, and 5 continents, which culminated in a letter to the Lancet Infectious Diseases advocating for health and well-being after tuberculosis treatment, and to address socioeconomic consequences including stigma and disabilities post-tuberculosis. One Unit engaged with international policymakers at the World Health Organisation by presenting their findings of healthcare use and access of slum dwellers, and another represented their Unit in a panel discussion around tackling the challenges of urban health in the context of fragile health systems at the European Congress on Tropical Medicine and International Health. Local media has been used to publicise some Units' work and/or disseminate their findings, e.g. an article on Nigeria's urban slums and health problems, published in The Punch, which is the most widely read Nigerian daily newspaper.

3.3 Lead/senior authorship

Since the start of funding, 191 peer-reviewed publications have been reported by 12 Units, which is a 110% increase on the number (91) reported in at the end of year 2. The authorship of these is summarised in Figure 4 below.

Figure 4 shows the breakdown of lead authors for externally peer-reviewed publications by gender and nationality as self-reported by Call 1 Units. Twelve out of 13 Units reported having externally peer-reviewed publications since the start of the award. 53% (78) of lead authors were nationals from LMICs, whilst 47% (70) were from HICs.

Figure 4. Cumulative number of externally peer-reviewed publications for lead authors by nationality (LMIC/HIC) and gender for Call 1 Units since start of funding.



Gender equity in lead authorship was well balanced in HICs, with 46% being female, however for LMIC lead authors only 36% were female and 64% male. Some Units counted the same lead author once for two separate publications when reporting their totals, hence the number of lead authors is lower than the number of publications.

Informing policy, practice and individual/community behaviour in LMICs

3.4 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

Outcomes of engagement and influence on policymakers

There are many examples of high-level engagement with Ministry of Health and other senior government officials from a number of Units; this section focuses specifically on the outcomes of these engagement activities.

In the UK, one Unit's publication on 'Understanding fragility: implications for global health research and practice' in March 2020 informed the subsequent development of a

DfID/FCDO and NIHR brief on Principles of health system resilience in the context of COVID-19 published in April 2020. In Sierra Leone, this Unit contributed to a review of the policy and strategic plan on non-communicable diseases and collaborated with the Ministry of Health to develop rapid guidance on managing essential services in hospitals and health centres during the COVID-19 pandemic. The Unit further met with the Chief Medical Officer to discuss their activities in support of the national Sierra Leone COVID-19 response and the wider health systems strategy.

In Bangladesh, a Unit has worked with the Ministry of Health to develop guidelines for the management of hypertension and diabetes, and guidance for patients on self-management of both conditions. Their research will further inform the implementation of the Ministry of Health's National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke.

Through co-funded evaluations and trials of vaccines against disease caused by the bacterium Streptococcus pneumoniae in the Gambia, Kenya, Malawi and Nigeria, a Unit has assessed optimal scheduling and dosing regime in collaboration with each Ministry of Health within these countries. Pneumococcal disease continues to be a considerable health concern and cause of mortality, particularly among infants and children in LMICs.

Another Unit wrote a blog advising against lockdown in urban informal settlements which was picked up by the Tony Blair Institute for Global Change, then incorporated within their advice to governments around the world. The Unit's rapid engagement with community leaders, residents and health workers identified that slum residents' ability to seek healthcare for non-COVID conditions (including pregnancy, mental health and arising from domestic violence) was reduced during lockdowns. The balance between the potential benefits and harms of lockdown is therefore different for slum communities compared to other settings.

In China, the Unit working with the China National CDC has advised new national food labelling standards for pre-packaged food which will be implemented after a consultation period, and one of the Unit's collaborators has secured funding through the Newton Fund Impact Scheme to develop a strategy to reduce the salt content of food consumed outside the home in Malaysia. Furthermore, the CDC is considering the use of an app-based platform developed by the Unit to support its "Healthy Lifestyle Campaign for All" in a sustainable way.

In Cameroon, a Unit's recommendation that adults attending healthcare facilities for breathlessness should be screened for Chronic Obstructive Pulmonary Disease has now been adopted by the Ministry of Health.

Based on another Unit's work in Bangladesh with the Ministry of Health, pulse oximetry will now be rolled out nationally which should substantially improve the quality of services for children under five years old.

On an international level, a Unit is collaborating with the World Health Organization Regional Office for Africa to formulate a roadmap to help countries develop strategies to address weaknesses identified in their health research systems.

Outcomes of engagement with practitioners

A Unit working **internationally** with partners in a total of ten African countries has delivered spirometry training in eight of those countries. Some hospitals in Ethiopia have purchased equipment and the Unit's local team is also training hospital staff. The spirometry techniques are now being used in practice and this is described as being self-sustaining in some countries.

At the **regional and national level**, a Unit is working to ensure their interventions for diagnosis and management of childhood pneumonia are adopted into practice in Bangladesh. They also developed a toolkit for implementation of pulse oximetry to assess children with severe pneumonia, which will change how this disease is managed in a clinical context.

At the **local level**, in villages in rural Tamil Nadu, India, the Unit's provision of a free mobile clinic has reported a participation rate of close to 90% of the population. The Unit's initial findings indicate a marked increase in diabetes prevalence since a survey conducted 10 years ago, with nearly 40% of the population now prediabetic or diabetic.

A hospital in Nigeria rapidly confirmed and then effectively dealt with an Acinetobacter bacterial outbreak within its Intensive Care Unit, due to the bioinformatics capacity that had been developed through a Unit working there. Another Unit has worked with colleagues at the Punjab Institute of Cardiology in Pakistan to open its first Department of Preventative Cardiology; this allows optimised medical therapies for patients in Lahore with acute MI and ensures they receive post-MI lifestyle counselling.

At an administrative level, a Unit has also contributed to the revision of the electronic health management information system now being used in Tanzania.

In the UK in response to the COVID-19 pandemic, one Unit has supported pathogen surveillance efforts at Public Health Wales and Public Health Scotland by providing expertise for installing local software to streamline data processing of COVID-19 associated metadata and to aid visualisation of genomics data. The same Unit also assisted with India's COVID-19 response by helping to develop a rapid PCR diagnostic test for COVID-19.

In Sierra Leone, a Unit rapidly developed guides for hospitals and primary care settings to manage essential services during the COVID-19 pandemic. This built on their earlier work developing and pilot-testing guides and training materials on the management of NCDs in primary care. In Nigeria, over 1000 health workers have already used the COVID-19 training

app developed by one Unit, and in South Africa another Unit has developed a training course for health care workers on palliative care skills for COVID-19 patients.

Outcomes of engagement on individual/community behaviour

There are examples of Units engaging with the community in creative and culturally appropriate ways.

Examples include a Unit visiting a school in Bangalore to raise awareness of AMR and the need for good hygiene practice to reduce AMR. In Pakistan, a Unit used Mobile Health Units to raise awareness of diabetes prevention and management in the community.

LMIC and UK researchers trained and increased support staff capacity

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

The NIHR Academy defines trainees as individuals undertaking formal training/career development awards that are competitive, include a training plan, have a defined end point and who are in receipt of at least 25% NIHR award funding. A breakdown of the type of higher degrees undertaken by NIHR Academy Trainees from LMIC Units is shown in Table 2 below. One of the 13 awards do not have any NIHR Academy trainees, so data below covers 12 Units.

The number of NIHR Academy trainees reported has decreased compared to the last reporting year, by 46 individuals from Units' Call 1 year 2 reports (previously 226 NIHR Academy trainees). As data is a cumulative count, this change is likely due to improved clarity and understanding of the definition of an NIHR Academy Trainee and a prior erroneous reporting on other trainees who were not part of the NIHR Academy defined formal training programmes.

Some Units supporting formal trainees used flexible ways to fund formal training awards where the duration extended beyond the term of funding award.

Table 2 Type of higher degrees undertaken by NIHR Academy trainees (12 out of 13 Units reported data)

Training level	**Total number who are currently undertaking or have completed during the award period** (% total trainees)	**% LMIC nationality**	**% female** (HIC and LMIC combined)
BSc	2 (1%)	50%	0%
Masters	51 (28%)	94%	41%
PhD	93 (52%)	86%	34%
Postdoc	28 (16%)	64%	43%
Other (e.g. research fellows where training level not indicated)	6 (3%)	100%	17%
Total number of trainees	**180**	**153 LMIC nationality** (85% of trainees)	**66 females** (37% of total trainees)

Eighty-five percent of Units' NIHR Academy trainees are from LMICs and 37% of the Units' NIHR Academy trainees are female. This indicates that the Units awards are supporting LMIC capacity strengthening and positively impacting on gender balance across the allocation of formal training awards. There is a broad spread of trainees across all the different award types, with the highest total number of trainees studying for a PhDs (52% of all trainees), followed by Masters (28%), Post-Doctoral (16%) and 3% unspecified.

Figure 5 Number & reported gender of NIHR Academy Trainees undertaking higher degrees within Call 1 Units

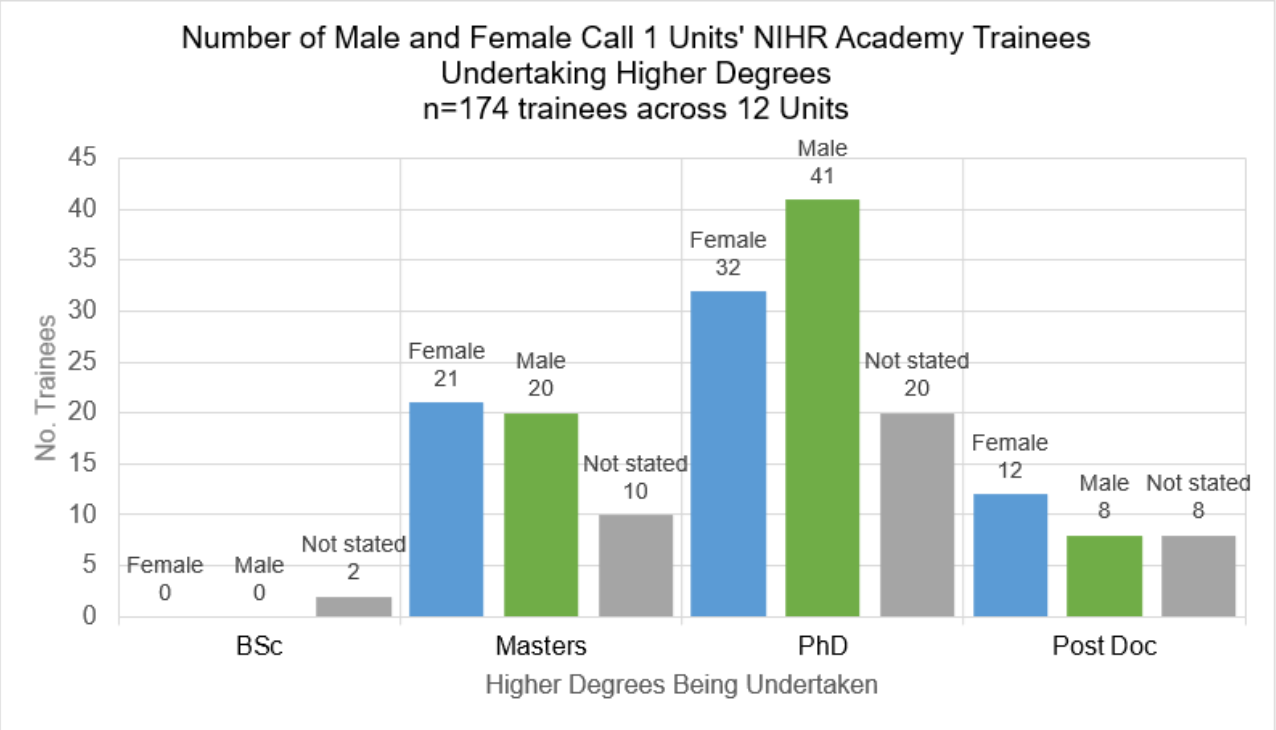


Table 2 and Figure 5 indicate that the gender balance amongst the trainees who reported their gender is quite even, with 37% (66) female and 39% (70) male. However, a significant proportion of trainees 24% (44) did not state their gender making further conclusions difficult.

Looking only at those individuals who stated their gender, females represented 51% of those undertaking a Masters; 44% of those undertaking a PhD, and 60% of those undertaking a Post-Doctoral fellowship. Six trainees reported by the project teams categorised in Table 2 as 'Other' were not included in Figure 5; four were undertaking a research fellowship where the training level was unspecified, and two were undertaking postgraduate certificates/diplomas.

In terms of the gender of the NIHR Academy trainees reported to be undertaking higher degrees (BSc, Master, PhD or Post-Doctoral fellowship), at Master level 41% (21) were female and 39% (20) were male, and more male trainees were undertaking PhDs (44% of PhDs) than female (34% of PhDs), but for post-doctoral fellowships there were more females (43%) than males (29%).

Figure 6 shows the countries of nationality of Academy trainees reported. 85% of the trainees reported their nationality as being from a low- and middle-income country. The LMICs with most trainees were India (11%), South Africa (8%), and Zimbabwe and Pakistan (6%) each. Coverage was reflected across Asia, Africa, and Central America. The rest reported either UK nationality (11%) or did not state their nationality (3%).

Figure 6 Number (n=180) and nationalities of NIHR Academy Trainees funded within Call 1 Units (12 out of 13 Units reported data)

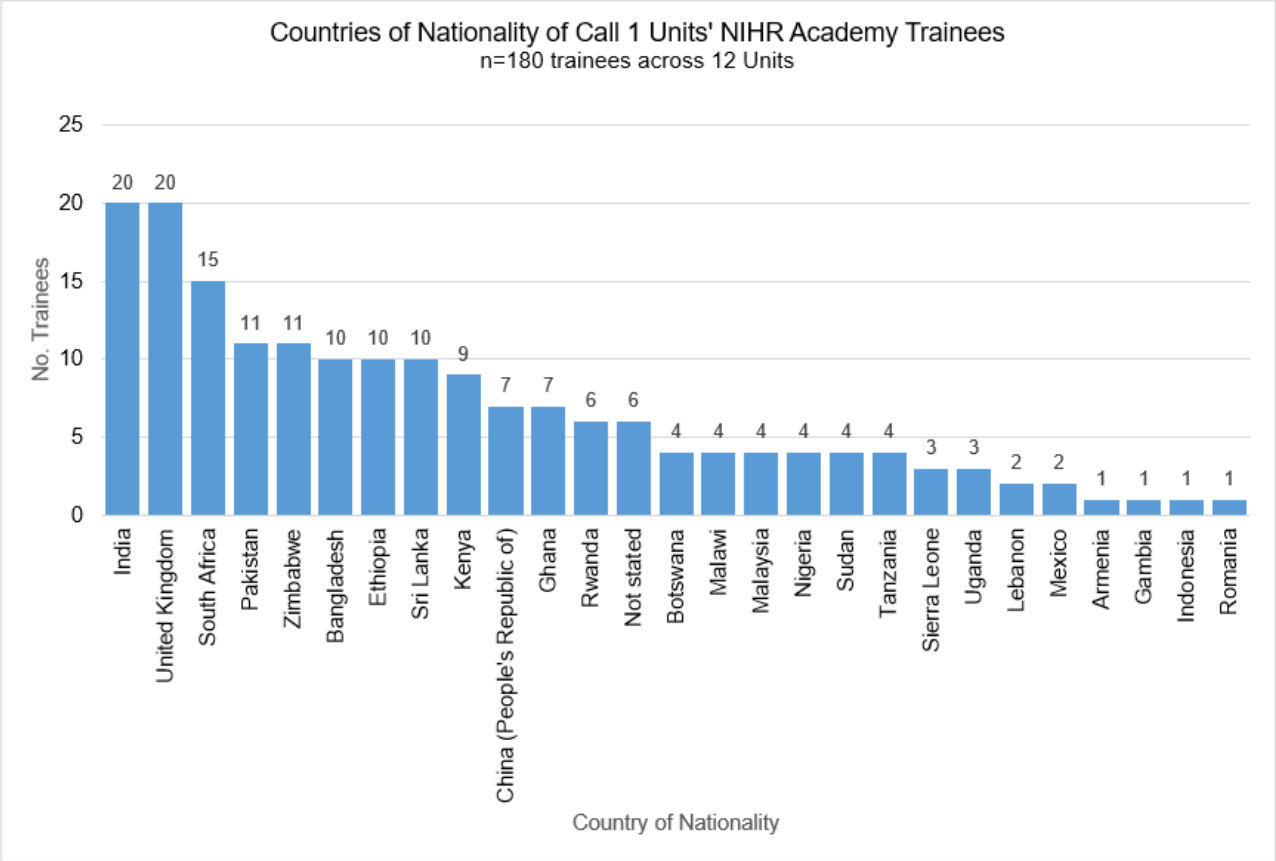


Figure 7 Numbers of NIHR Academy Trainees across the different global regions reported by 12 out of 13 Units

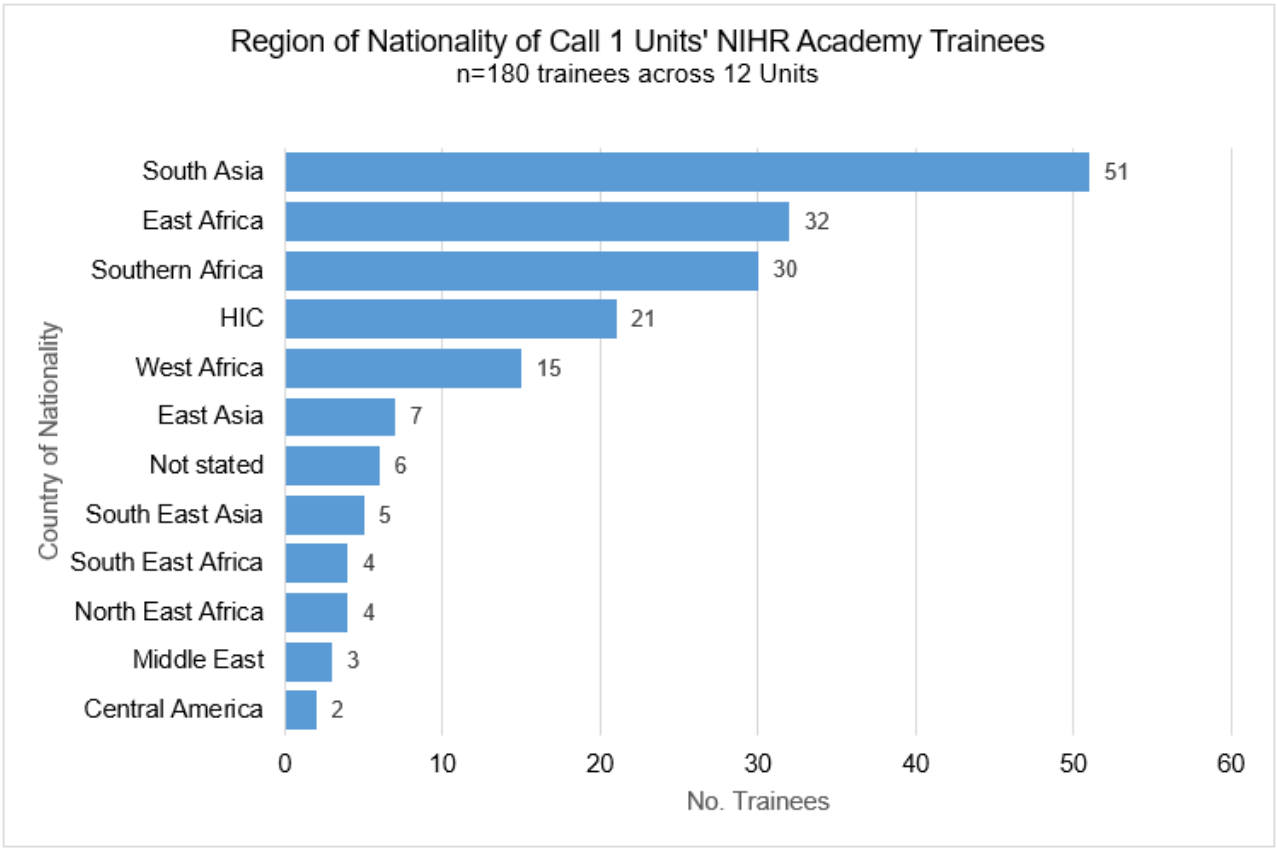


Figure 7 shows countries of nationality reported by the NIHR Academy trainees divided into regions. South Asia had the highest proportion of trainees 28% (51), with the next most frequently reported regions being East Africa 18% (32) then Southern Africa 17% (30) trainees. High income country nationalities are grouped under the HIC label.

Figure 8 Number and gender of Call 1 Units' NIHR Academy Trainees by region of trainee nationality

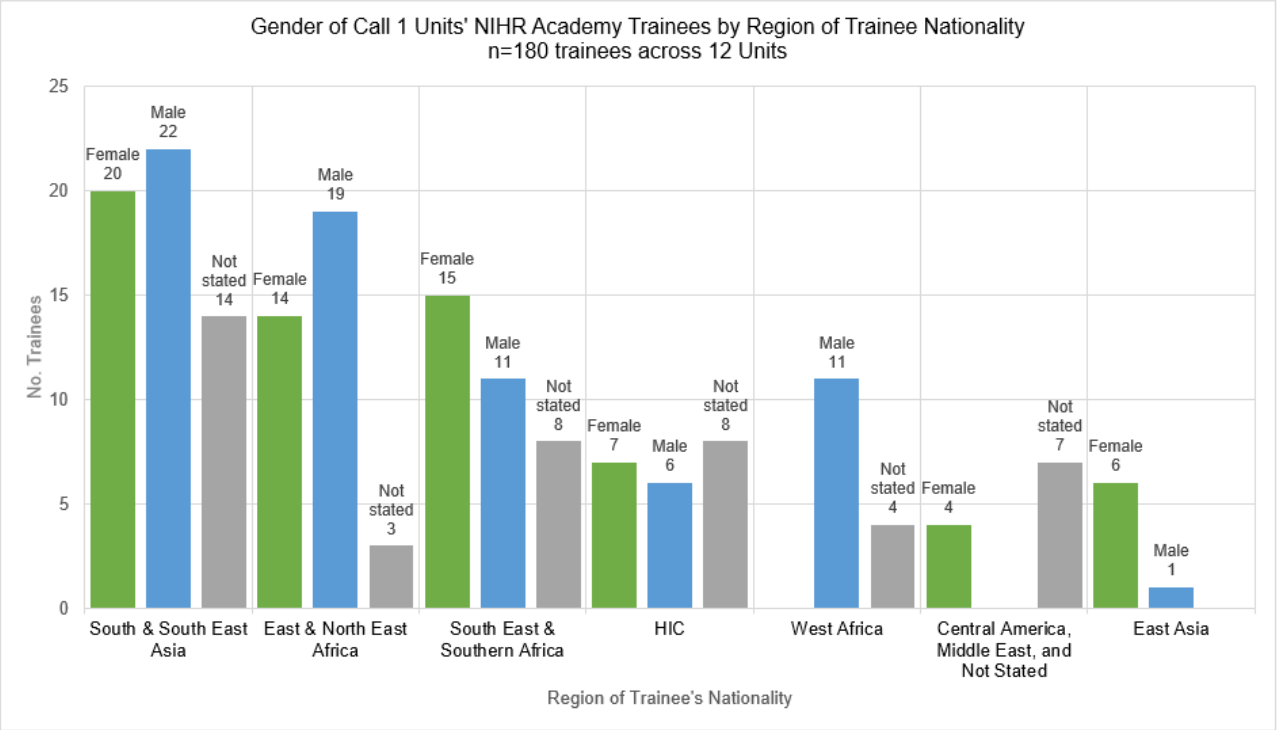


Figure 8 shows the reported genders of the 180 NIHR Academy trainees within each region, grouped by country of nationality, reported across 12 of 13 Units. The balance of male and female trainees varies by region, with more male trainees in some regions (S & SE Asia & W Africa) and more female in others (SE & S Africa & E Asia). A significant proportion (24%) of trainees did not state their gender. High income country nationalities include the UK and Romania and are grouped under HIC.

An example of NIHR Academy trainee activities:

Rutuja Patil is a RESPIRE PhD student based at the Vadu Rural Health Program, King Edward Memorial Hospital in Pune, India. She is part of a team carrying out sero-surveillance to identify the prevalence of the SARS-CoV-2 infection in a rural population in India. The findings of this project will help guide the design and provision of appropriate healthcare and containment measures in India, with the potential to inform other low- and middle-income country responses. Her PhD studies are examining the feasibility of using a teleconsultation facility to manage chronic respiratory diseases in remote rural areas in India. Remote consultations are increasingly relevant when face-to-face consultations with healthcare providers are less possible due to COVID-19 pandemic conditions. [NIHR Global Health Research Unit on Respiratory Health (RESPIRE) at the University of Edinburgh]

LMIC institutional capacity strengthened

3.6 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.

Units' programme activities have been adversely affected by COVID-19, however, the move to remote working resulted in some unexpected wins; projects adapted to changing circumstances at impressive speed, creating virtual training and networking opportunities to mitigate delays and allow research to continue whilst ensuring safeguarding of those involved. For example, a series of Good Financial Grant Practice training webinars reached 137 participants in 24 countries, providing attendees with the skills to write successful funding bids in the future. The GFGP is a means to standardise and strengthen financial and wider governance of grant funding to support greater accountability, the reliability of data and to improve transparency and trust.

Recruitment and training opportunities continue to strengthen capacity across all Units with a dedicated focus on generating long-term sustainability. PhD students and early career researchers are encouraged to disseminate skills and training both for their continued personal development and to build local capacity.

"In Kenya, our clinical PhD student became an accredited ultrasound trainer & trained 33 independent ultrasound practitioners, some of whom purchased ultrasound machines which are used in daily clinical practice." [NIHR Global Health Research Unit on Lung Health and Tuberculosis in Africa at LSTM]

Locally driven initiatives with the potential for national impact are an opportunity to strengthen health systems, promote product development and generate opportunities for recruitment and career development. For example, partnership working for one project began with an aim to increase knowledge management capacity, but soon progressed into a proposal for a pilot Unit for Health Policy and Evidence at CDT-Africa. The Unit Co-Director was awarded a Certificate of Recognition for Capacity Building at the CDT-Africa Consortium meeting in Addis Ababa.

Other LMIC partners are actively involved in the collection, analysis and validation of what is currently the largest international dataset of surgical outcomes for cancer patients (16/136/79). Collaborators at individual hospitals will be given access to the full dataset at their individual sites, facilitating local audit and quality improvement projects.

In India, Nigeria and Ghana, the formation of dedicated NIHR GlobalSurg Unit Hubs means that a network of 'hub' hospitals can operate with minimal UK involvement and bring research to vulnerable populations. The number of studies running at these sites has led to

increased staffing opportunities and an expansion of the spoke network to include 'sub-hubs' operating in a support capacity to the Hubs. This supportive infrastructure model has enabled multiple studies to take place, involving recruitment of patients from at least 55 hospitals, positively impacting the efficiency of research output.

"This Unit would not only benefit our … ability to increase our research uptake but would produce a framework to guide future research uptake across NTD research in Ethiopia, in collaboration with the Ethiopian Federal Ministry of Health. CDT-Africa secured five inter-regional and international grants in their first year of operation, so for them to build their institutional capacity it is vitally important that research uptake is improved" [NIHR Global Health Research Unit on Neglected Tropical Diseases, BSMS]

Investment in LMIC research sites has included the purchase of equipment that will support local infrastructure and enable the sustainable continuation of work. ECG machines, spirometers, retinal cameras, computers, and ultracold freezers have been purchased to support research in South Asia, whilst mobile health units have been purchased for Pakistan to enable field research to take place. The Ghana Data Centre (funded in collaboration with the Wellcome Trust) is a fully functioning suite of 15 computers and a local server to provide access to a data analysis platform. Power outages result in the loss of samples, so solar panels have been installed in Sinuresi, ensuring sustainable and reliable energy for many years to come.

Financial Assurance Fund activities

In June 2018, NIHR launched the Financial Assurance Fund, providing an opportunity for funded Global Health Research Units and Groups to apply for additional funding for specific activities aiming to build financial management capacity in the LMIC partner organisation(s). The application process was managed by NETSCC with proposals considered through an externally appointed Funding Committee. FAF funding was awarded over a 12-month period with up to £50,000 available to applications from single institutions and up to £100,000 for joint applications. Successful applications were required to demonstrate the ability to reduce financial risk and strengthen financial capacity in LMICs partner organisations and provide sustained outcomes beyond the end of NIHR funding.

Five Call 1 Units were awarded FAF funding during the reporting period via two separate FAF calls (one April 19 and one November 19). Across all calls three Units applied twice and were successful in achieving two FAF awards each between the pilot 2018 and the final call in November 2019; a total of 20 FAF awards were allocated in total; Units (10) and Groups (10). Across the awards, FAF funding was used to deliver activities to support partners to prepare for GFGP assessment and accreditation. Examples of other funded activities included training on financial management and costing research proposals, development and production of governance manuals, and accounting software purchase and training. In the reporting period one Unit undertook the first GFGP certification of a partner: KIMS Bangalore, India (July 2020). Three Units have held GFGP training for partners and extended this opportunity to other teams within the Units and Groups cohorts.

"*Our Indian Partner KIMS, [...] reported positive changes in HR practices (such as staff entitlement to annual leave, and transparency around salary bands and career progression) […] as a requirement of GFGP bronze-level compliance. As GFGP re-certification is based on audits that demonstrate continued compliance over time, we are confident they will continue to operate in a way that will safeguard staff*". (See KIMS GFGP journey on Vimeo - [NIHR Global Health Research Unit on Genomic Surveillance of Antimicrobial Resistance, Wellcome Trust Sanger Institute]

Another held a workshop open to other NIHR GHR Units and Groups awards:

"*A workshop on Good Financial Grant Practice was held in Kigali, Rwanda in February 2020. This workshop attracted 84 project and finance managers across nine NIHR Units and Groups from the UK, Africa and Asia. The workshop objective was to understand the critical gaps in the grant funding landscape and solutions developed by the Global Grant Community for addressing these gaps*'' - [NIHR Global Health Research Unit on Tackling Infections to Benefit Africa, The University of Edinburgh].

3.7 Aggregated distribution of support staff (collected for the purposes of understanding how wider research support responsibilities are divided between LMIC and HIC institutions)

Table 3 shows that 89% of FTE of support staffing was contributed by staff employed in LMICs. 11% of the total FTE was contributed by support staff employed in HICs.

Table 3 Total number of FTE support staff (research managers, finance, admin, community engagement practitioners, other) in post during the last 12 months

Employed location	**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*
Employed in LMICs	319.0
Employed in HICs	41.4

*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

Refer to 3.6 for examples of support staff capacity-strengthening activities.

Equitable research partnerships and thematic networks established/strengthened

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

Establishing and strengthening equitable partnerships and thematic networks is a key principle for NIHR Global Health Research funding. Equity in partnership was evidenced by Units throughout the research life cycle. All teams were required to set up equitable systems of governance and provide evidence that LMIC members were appropriately and equally represented in relation to their UK counterparts. The approaches to equity often included establishing multi-way agreements and clear Terms of Reference to ensure equity in leadership roles, communication and publication.

The inclusion of partners and building of equitable partnerships was achieved in several ways:

Partners participating in or leading research prioritisation activities

- Both initial and periodic research prioritisation meetings involving local stakeholders were reported with one Unit describing how research prioritisation workshops in partner countries had also enabled new collaborations to form.

Continuous engagement with partners and stakeholders through:

- **Meetings**: These ranged from project management meetings to monitor progress to strategic meetings where partners formed part of committees and were involved in key and strategic decision making. Regular meetings were reported with some teams describing an increase in the frequency of virtual meetings during the COVID-19 pandemic. Annual conferences were held to engage partners with one Unit describing a yearly rotation of location between partner countries.

- **Ad hoc visits**: In addition to north-south and south-north visits, south-south face to face meetings between partners for training and knowledge sharing and support were reported. One Unit described how partners had discussed a future strategy towards co-leadership of the project. Conferences, meetings and visits were face to face for some of the reporting period with a transition to virtual platforms due to the COVID-19 pandemic.

Promotion of local ownership through:

- Co-designing research projects with partners
- Partners' involvement in the recruitment of research project staff
- Joint decision making
- Projects being led locally by partners
- Collaborative publications including partners being lead authors of publications
- Equal responsibility for dissemination of research findings

One Unit described how shared ownership of the project and clear communication with partners has helped build equitable partnerships:

"Equitable partnerships are the foundation of our Global Health Research Unit - as is the sustainable exchange of knowledge, and the transfer of expertise. We operate a shared ownership model with each Unit and their up-skilled teams contributing to the generation of actionable data to help improve the national public health systems in place across our network. From the outset, we have empowered our Partners to act autonomously in the setting up their National Surveillance Units - providing support and advice where needed, but otherwise giving our PIs the necessary freedoms to establish their Units to best achieve buy-in with policy makers and secure the adoption of genomics to deliver robust, rapid and reliable AMR surveillance in their home countries. Clear communication and transparency around the decision-making process has been vital to ensuring that all Partners and Stakeholders are able to pull together to achieve common goals" [NIHR Global Health Research Unit on Genomic Surveillance of Antimicrobial Resistance, Wellcome Trust Sanger Institute]

NIHR funding has enabled collaborations and the establishment or expansion of topic specific and geographical networks. Through close partnerships, one Unit described the co-organisation of the first international Post Tuberculosis Symposium. NETSCC have helped

facilitate the establishment of inter-portfolio networks and initiatives between NIHR Units and Groups and other international research collaborations.

Table 4 below summarises the thematic networks between NIHR funded Units and Groups.

Table 4. Summary of inter-portfolio networks

Network	Led by	Number of Units/Groups in network	Aims
Surgery	Universities of Birmingham (16/136/79) and Cambridge (16/137/105)	6	Learning from each other's in-country experiences, sharing of surgical resources, and evolving a common strategy for global surgical research for the future
Health economics	University of Birmingham (16/136/79)	13	Share learning, explore common challenges related to methods and discuss strategies to address challenges of conducting applied health economics in LMICs.
Data governance	University of West of England (16/137/49)	18	To help NIHR projects develop a low-cost high impact data management strategy that can be used to develop local capabilities by bringing together existing world-leading expertise to run a virtual online course for data governance champions.
Data governance	University of Edinburgh (GHR 16/136/109)	3	Development of a global network of collaborators interested in data management and secure sharing of data.
Respiratory	Universities of Edinburgh (16/136/109) and Liverpool (16/136/35)	9 (+2 GCRF and 1 GACD)	To work collaboratively in the area of respiratory research on agreed deliverables and by jointly providing funding for a research post. The UK's Global Health Respiratory Network: Improving respiratory health of the world's poorest through research collaborations

3.9 Delivery partner's summary of any other noteworthy outcomes beyond those captured above

Impact of the coronavirus pandemic

Following the start of the COVID-19 pandemic, an evaluation was carried out in April 2020 and July 2020 using further adaptions to routine quarterly QSTOX reporting (Q4 2019/2020; Q1 2020/21) to understand potential delays to delivery, contextual issues, redeployment of staff to local responses and the potential impact on spend and delivery across the cohort. The feedback showed that most teams were moderately impacted and were forced to either pause their studies or to focus on work that could be continued remotely, e.g. virtual engagement/meetings, analysis of data collected and writing publications. Several teams indicated that staff had been redeployed to support in-country COVID-19 pandemic responses. In one case, a Unit partner in India applied their capacity for whole genome sequencing developed through the support of the NIHR award, to sequence COVID-19 samples collected from Bangalore. The team has now received accreditation for COVID-19 testing from India's National Accreditation Board.

Units were creative and all continued to progress aspects of their work remotely and no Unit had to completely stop their activities; changes to programmes were facilitated to address delay to work packages due to impact of COVID-19. More information on the project risks related to the COVID-19 pandemic, its impact and the NIHR response is covered in Section 5.

Forging relationships with industry and policy makers at supranational and national levels

A Unit working in Africa revealed that they were helping the global health company Merck KGaA, in their efforts to deliver a new drug formulation for paediatric schistosomiasis, and WHO on developing new guidelines for mass drug administration that will allow 50 million children under five years old to be treated for paediatric schistosomiasis across Africa. Currently, there is no paediatric medication for schistosomiasis and children are treated with adult formulation but this, however, can result in incorrect dosage being administered.

Another Unit reported that their industry partner, MindWave Ventures has developed a prototype application (Chronic Care App). This is designed to provide an information system to support chronic care for mental health and other noncommunicable diseases with user-led design approach to generate data that could be used by different stakeholder groups (clinicians, facility managers, local government) to support health systems strengthening.

Capacity strengthening

A Unit working in Colombia, the Philippines and Nigeria, on a project focusing on genomic surveillance of antimicrobial resistance reported that, a clear demonstration of impact achieved during the year is that, as a result of capacity building and successful knowledge transfer, the Partners have been able to detect and confirm disease outbreaks in their countries – without relying on the UK Central Hub.

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.

NIHR ensure that research teams fully justify how funds will ultimately contribute towards improved health outcomes for people living in LMICs and that research is contextually appropriate and generalizable to maximise the impact of the research for every pound spend across the research-life cycle. Ongoing assessment of value for money is integrated within NETSCC's research management processes and builds on the DfID/FCDO 4 E's approach which defines value for money as the optimal use of resources to achieve the intended outcomes (from inputs to outputs, outcomes and impact).

The 4 E's are defined as follows:

- **economy –** the degree to which inputs are being purchased in the right quantity and at the right price
- **efficiency –** how efficiently the project is delivering its outputs, considering the rate at which intervention inputs are converted to outputs and its cost-efficiency
- **effectiveness –** the quality of the intervention's work by assessing the rate at which outputs are converted into outcomes and impacts, and the cost-effectiveness of this conversion
- **equity –** degree to which the results of the intervention are equitably distributed

4.1 Economy

Eligibility of costs and overall value for money are reviewed by NETSCC during the application review process, at contracting, during project set-up, and continues throughout active monitoring. Throughout monitoring, Units are required to demonstrate compliance with institutional procurement policies, provide justification for budget virements and/or any changes to the contracted programme of research in accordance with published NIHR finance guidance.

Units ODA budget spend is monitored via quarterly financial reports, with use of random expenditure verification checks of invoices/transactions, and deep dive spot checks where necessary. Within this reporting period NETSCC initiated spot checks on 9 awards and at the time of writing this report 6 assessments have been fully completed (see section 5.1).

Units demonstrated **evidence of achieving value for money** through following established procurement processes, utilising their own infrastructure/resources where possible, organising joint purpose activities to reduce costs (e.g. dual conferences and training events), and other cost saving activities (e.g. used free consumables where possible).

4.2 Enhanced efficiency

Enhancing impact

To maximise opportunities to amplify timely stories of impact, all Call 1 Units are required to upload all outputs generated, within 14 days of publication, onto the MIS. NETSCC track and use data on outputs to demonstrate the emerging impact of ODA funding on intended beneficiaries. The extent of reporting outputs changed in September 2020, to reduce burden and focus on timely reporting of impactful outputs within 72 hours. Annually teams report on their most significant outputs, addressing the evidence needs of people living in LMICs, and examples of these are listed in outputs section 3.3.

Enhancing financial efficiency

Units demonstrated evidence of enhancing financial efficiency in the period. Examples included organising joint purpose activities to reduce costs (e.g. dual networking and training events), using efficient and long-standing procurement processes, and utilising previously implemented research infrastructure to aid the initial set up of research.

Enhancing sharing of intellectual knowledge

Units commonly reported on the efficiency of converting research inputs into outputs, through methods of knowledge exchange, development of partnerships/networks and engagement with stakeholders and communities to aid dissemination. NETSCC support wider networking and shared learning across the cohort by facilitating engagement between researchers, the development of research consortia and themed networks, and sharing of best practice for example, in capacity strengthening and on-line training materials via the NIHR Academy trainee's forum, and network of Unit Training Leads.

4.3 Effectiveness

Each Call 1 Unit submitted a proposed pathway to impact within their application. These were peer reviewed by subject experts and assessed for scientific merit and feasibility by the Funding Committee. Through regular monitoring, NETSCC ensures adherence to all funded aims. Where changes are required, regarding the partners or research plans, cases are carefully scrutinised through the Change to Programme process to ensure these originally funded aims will still be met.

Drawing on the learning, experience and outcomes of the work of the Units and Groups, in 2020 NETSCC and DHSC published the overarching NIHR GHR programme Theory of Change, and further developed Theory of Changes for Units and for Groups as a framework indicating the inputs, outputs, outcomes and longer-term impact expected and tracked by

NIHR to support applicants to planned future Unit and Group calls launched in the reporting period and inform existing award holders reporting on outcomes and impacts.

NIHR ensure effective knowledge exchange and transparency across the cohort and beyond, promoting the outcomes and impact through case studies and publishing findings of these Annual Reviews which are made available in the public domain.

As described in section 3.4, several examples of early impact have been identified through the 2019-20 annual reports, including engagement with Ministry of Health and other senior government officials to ensure study outputs were rapidly translating into effective outcomes. As mentioned above, Units must inform NETSCC of all impactful outputs generated within 14 days of publication, these are reviewed in relation to Units achieving their research aims and are also amplified through NIHR channels to increase coverage and transparency of research findings, including use of SLACK and other communications channels.

4.4 Equity

NETSCC is committed to supporting research teams to establish equitable partnerships. Supporting this ethos, NETSCC continually assess Call 1 Units' approach to equity and diversity throughout the life course of their funding. Through active monitoring, annual reporting and review of changes to programme, NETSCC maintain oversight and identify any concerns related to equality, diversity and inclusion to be addressed by teams as necessary.

Through annual reporting, data is collected on the gender and reported disability of staff and trainees within each Unit's research and support teams, both in LMICs and HICs. The gender split of lead, co- and last authors on peer-reviewed publications generated through each Unit's research is collected and reviewed by the NETSCC portfolio lead (see section 3.3). Similarly, data on gender is collected on funded trainees and is reported in section 3.5. The trainee data clearly demonstrates that NIHR funding is having a positive impact on providing funding for training of female researchers within a range of formal academic training posts for Units Masters and Post-Doctoral.

As described in section 3.8, all Units are actively promoting equitable partnerships. This is demonstrated through continuous engagement with their partners, encouragement of local ownership, joint decision making and appropriate recognition of researcher's contributions. Addressing equity within research participants is discussed in section 2.3.

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

The Call 1 Units guidance set out clear expectations for research that focused on the health and well-being and benefit the most marginalised and vulnerable in LMICs. This expectation was assessed as part of the application review process and reviewed as changes are requested throughout the lifetime of the award.

Through annual reports, NETSCC monitor how the needs of vulnerable groups have been considered and met within the design, implementation and translation of the planned research. Most Units reported the inclusion of ‘at risk’ and ‘vulnerable groups’ in their research. As described in the CEI section (3.2), this was often achieved through their CEI activities to ensure the voices of all community members were heard. NETSCC monitor attainment of ethics approvals and keep copies of these within each project record. This ensures an independent committee has assessed that the research will ‘do no harm’ to participants and will safeguard any vulnerable and at-risk groups involved.

Research data collected is usually disaggregated by gender, socioeconomic status or other characteristics enabling health inequalities to be identified. NIHR promotes openness and transparency in research through a number of its policies, guidance and platforms to support data sharing and open access publications. To ensure research outputs are accessible to the global health community, NIHR require publications to be available in open access journals and are tailored to meet the needs of different audiences. NIHR support teams to amplify awareness of research findings through the production of impact case studies, NIHR cohort meetings, NIHR-led panel sessions, these annual reviews, the use of NIHR communications platforms, SLACK and by subscription to NIHR Global Health Research newsletters.

4.5 List of any additional research and infrastructure grants secured by LMIC partners during the course of this NIHR funding

Figure 9 Grants secured by LMIC partners during course of NIHR funding

Funder	No. applications successfully awarded	Amount awarded (GBP)
UK funders: DfID (FCDO), Fleming Fund, GCRF, MRC, NIHR, Wellcome Trust	7	£1,309,918
LMIC Government/HEI funding	6	£337,141
LMIC NGOs/Professional Societies/Commercial/charities	3	£1,211,515
Other international funders: ARES, BMGF, Merck, Novartis, Sanofi, Taskforce for Global Health, US NIH, WHO, various	11	£1,885,239

Twenty-two new funding awards totalling approximately £4,736,515 (some awards reported in local currency were converted to £ sterling) have been reported as secured **by LMIC partners** since the Call 1 Unit awards commenced in 2017. For those where the percentage of the award allocated to LMIC partners was stated, 95% of this reported funding was allocated to LMIC institutions. Five other new funding awards were also reported but these amounts were not stated; these included support for PhD students and two grants supporting genomic surveillance work in Nigeria.

A variety of activities have been funded through these additional awards, e.g. research studies, pilot studies, PhD students' work, and increasing NCD management capacity in refugee camps.

There were several high value awards, for example, £1.2m secured by KIMS Hospital India from India's Biotechnology Industry Research Assistance Council to establish a pneumococcal vaccine immunogenicity evaluation centre, and £865,302 secured by AFIDEP from the WHO for a project entitled "Heightening Institutional Capacity for Government Use of Health Research (HIGH-Res)".

Some partner organisations have been successful in securing awards from national and/or governmental sources, e.g. Bangladesh's Ministry of Health, while others have been awarded funding from industry sources, e.g. Merck, Novartis Pharmaceuticals Corporation, and Sanofi.

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.

In the period NETSCC piloted a revised approach to individual project and portfolio level risk assessments to generate a single project RAG and align to a cross NIHR assurance risk register. Table 8 shows the five most significant risks, listed in risk registers, across Call 1 Units, and the strategies to manage and mitigate these risks. Risks to the delivery of programmes of activity were related to safeguarding, contextual issues (including the impact of the COVID-19 pandemic), staffing/ participant recruitment, financial and fiduciary controls. In the period the importance of safeguarding was promoted and safeguarding of staff and participants, delays to planned research activities and the negative impact on budget spend were common and significant risks identified and being actively mitigated, as best possible, due to the COVID-19 pandemic; risk registers were reviewed regularly, and each updated as required.

In response to COVID-19, NIHR advised award holders that funding would continue to support teams, even where staff temporarily could no longer work and where some activities needed to pause. This approach was taken to facilitate staff redeployment to in-country front line COVID-19 emergency responses, as needed and to help maintain the research teams. Many changes to research programmes were received; several of which were requests to deliver COVID-19 work related to the original funded aims or to adjust budgets, resourcing or timing of planned programme activities to mitigate expected delays. Any requests to re-purpose funds for new COVID-19 work that did not relate to the existing aims of the Units were redirected to COVID-19 focussed funding calls.

QSTOX returns (Q4 2019/20) were modified due to the COVID-19 pandemic to include additional data fields to evaluate its impact on GHR research activities. More detailed breakdowns were later requested in Q1 20/21 to understand the impact of staff redeployed to in-country responses were captured. NETSCC set up a central log of key reported risks, programme changes to support COVID-19 work, expected delays to Unit programmes, and the impact on spend across partner countries to inform DHSC. This log has been used across all the NIHR Global Health co-ordinating centres.

Table 5 Top five most common, significant risks in terms of impact and likelihood, as reported in the Call 1 Units Risk Registers

	Risk	Examples of risk	How is the risk being managed/mitigated?
1	**Contextual** barriers to timely research progression/ completion, and safeguarding (11 entries from 6 Units)	• Environmental risks (severe weather, natural disasters, disease outbreaks/epidemics) • Political risks (political climate, public disorder, civil unrest, economic instability) • Safeguarding risks (personnel safety/ travel/ safeguarding of research participants/communities)	Research activities planned around political calendar; use of local partner knowledge; close monitoring of local LMIC situation; adherence to ethical guidelines; maintaining contact with ministries; developing contingency plans; undertake risk assessments and putting mitigations in place; providing for travel insurance for staff
2	**COVID-19 Pandemic** Impact on research core milestones (15 entries from 7 Units)	Delays to research progression, deliverables and completion due to the COVID-19 pandemic: • Public health/lockdown measures impacting on data collection, field research, specialist data analysis, access to equipment and systems • Restricted travel • Researcher/participant safety • Participant recruitment, attrition, anxiety and safety	Close monitoring of COVID-19 situation; remote working put in place; provide staff training and wellbeing support; use of alternative research and data collection methods; purchase of PPE; recruitment processes ready to resume as soon as conditions allow; applications for no cost extensions requests; explore virtual networks for training and knowledge transfer; undertake risk assessments; communications/guidance on public health and reducing risks for COVID-19 transmission
3	**Operational** General research challenges (11 entries from 6 Units)	Delays to research activity due to: • Changes to research protocols and obtaining ethical clearance • Accessing data and equipment / insufficient equipment • Research staff and participant attrition	Ensure clear and strong communication channels; ensure adequate IT budget; establish efficient procurement processes; use reliable delivery providers; develop flexible protocols to allow remote data collection; develop understanding of processes, requirements and timelines for ethics boards; recruitment rates will be monitored closely; local expertise will be utilised for participant recruitment attrition
4	**Financial** Fiduciary controls and award longevity (3 entries from 3 Units)	• Exchange rates and delay of payment to partners • LMIC tendering policies cause delays to equipment procurement • Financial sustainability of research partnership beyond NIHR award	Provide LMIC partners with one off financial advance of 6 months; source and ship consumables direct and charge back to LMIC budget; seek diverse sources for additional funding
5	**Scientific** Cultural /scientific differences (2 entries from 2 Units)	• Differences in culturally acceptable data collection methods • Difficulties in methodological approaches and interpretation of data	Establish strong relationship with LMIC communities; test run data collection method with local stakeholders; ensure cultural context is built into every stage of project plan

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

Yes changes. Call 1 Unit awards are contractually required to undertake due diligence on all down-stream partners and establish NIHR vetted collaboration agreements prior to transfer of funds. NIHR encourage the use of GFGP to assist institutional self-assessment and certification against the GFGP standard. One Unit achieved bronze accreditation for their Indian partner KIMS Bangalore in the period another (see section 3.6).

An assurance visit template was developed and tested in February 2020 when two assurance visits were conducted on partner institutes based in Rwanda and South Africa, Cape Town. Two Call 1 Units with LMIC partners in South Africa were assessed during the assurance visits within the reporting period, and the learning applied to improve NIHR assurance processes.

Approximately 5% of quarterly financial reports from awards undergo expenditure verification spot checks of invoices/transactions, and deep dive checks as necessary. In the reporting period, 8 Unit awards were subject to expenditure verification spot-checks, of which two reviews have completed; 6 spot check reviews are ongoing at the time of reporting and findings will be reported in year 4 reports. Due to COVID-19 some Units have found it difficult to access proof of expenditure hence the protracted review process. Some low-cost items were identified and considered to be non-ODA compliant; these costs were subsequently removed by the contractor. A deeper dive review is underway on one Unit Award; related to capital items on the asset register that were acquired without NIHR authorisation, a retrospective request for approval is under review; final review findings will be reported in the next period. No other issues were identified with the other awards assessed. The cross NIHR assurance group are made aware of any potential risks to ensure shared learning across the cohort. In general Units follow NIHR finance and ODA compliance and query eligibility

Evidence of policies related to finance, procurement, human resources (e.g. codes for staff conduct, recruitment, training, travel and expenses, and conflict of interest policies) are expected to be made available to NIHR on request or as part of local assurance visits. A coordinated approach to ongoing due diligence and assurance of Global Health Research Programme Awards and production of further guidance to award holders is under development in the period. Activities are coordinated through a central NIHR Assurance lead

and amendments incorporated into the current DHSC ODA contract to strengthen safeguarding and IATI reporting provisions. Where contractor's due diligence checks on new partners identify any risks, mitigation steps are required. Contractors are expected to undertake an independent audit of partner organisations to verify compliance. One Unit reported no assurance concerns were identified after completing audits on partners. Fraud, corruption, and bribery clauses in collaboration agreements are all vetted contractual for compliance by NIHR. During the reporting period, there were no allegations of fraud or financial impropriety made against any of the NIHR Units.

NIHR continues to ensure coherence with other GHR funders and centrally coordinates assurance activities across NIHR to strengthen guidance and support both to internal staff and award holders regarding NIHR expectations for the identification and reporting of Fraud incidents. NETSCC have both institutional and internal whistle blowing and complaints policies and procedures in place. No concerns or allegations of fraud were identified or reported in the period by teams or individuals. Any concerns/allegations reported to DHSC/NIHR would involve investigation during this period may involve suspension of funding or future planned payments.

NETSCC further supported DHSC in providing evidence of the approach as part of the ICAI review into fraud.

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.

NETSCC actively promoted the publication of UKCDR Guidance on Safeguarding in International Development Research and the practical application of guidance in COVID-19 to all award holders in April 2020, and routinely share the DfID/FCDO enhanced due diligence for external partners to support awardees understanding of the expectations on them as contractors and downstream partners in relation to safeguarding and a need to anticipate, mitigate and address harm.

Safeguarding and an NIHR-wide assurance processes and guidance development are being linked to wider GHR funders including DfID/FCDO to ensure a consistent approach is adopted. A webinar was held with UKCDR, DHSC and NIHR staff, with parallel event for NIHR award holders in July 2020 to promote the new guidance and to reinforce expectations on Safeguarding for individuals and organisations in different roles. NETSCC have institutional and internal whistle blowing and complaints policies in place. A NETSCC safeguarding lead was appointed in the period and training for staff is arranged within next

reporting period. No safeguarding concerns were reported to NETSCC in the period, these would be reported to DHSC via incident reporting and as necessary funding may be suspended whilst serious concerns are investigated.

Call 1 Units do not as yet have explicit safeguarding provisions in their NIHR contracts but expectations of NIHR in relation to safeguarding and the need for appropriate policies and procedures to support effective safeguarding and reporting have been made clear. Although only two contract variations for Call 1 Units had been processed during the reporting period, another 7 were in process all new contract variations approved added the new strengthened safeguarding provision into existing DHSC ODA contracts. NIHR then require that this new safeguarding contractual clause be reflected in revised downstream collaboration agreements.

The NIHR annual reporting templates were revised to include specific questions on safeguarding and reporting of incidents. No specific safeguarding concerns were raised to NIHR during the reporting period.

Several Units noted that they or their host institution are developing or have developed safeguarding policies and frameworks which are in line with UKCDR guidance. Further UK leads are working with their LMIC partners to ensure that local safeguarding policies and systems are in place and supported. Some Units gave examples of mitigation strategies put in place following the identification of potential safeguarding issues; for example, when team members felt at risk (particularly in poorer urban areas) protective measures such as additional security, keeping to normal working hours, self-defence training, and ensuring younger staff are accompanied, were introduced. With COVID-19 many teams adapted engagement approaches and programmes to ensure safeguarding of researchers and participants.

In the reporting period, the University of Ghana and Lagos, Nigeria were subject to a safeguarding exposé (Oct 2019); NIHR immediately investigated any partnerships with the organisations. One Unit had partners based at the University of Lagos, in a different faculty department. They provided immediate assurance of their teams safeguarding approaches and institutional policies, in addition the actions to investigate, review and strengthen the safeguarding processes within the University of Lagos.

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

NIHR provide guidance to Units on expectations related to addressing sustainability within the awards, both in terms of research and capacity strengthening as well as environmental impact. Sustainable environmental solutions are strongly encouraged as part of the NIHR

approach to ensuring value for money, for instance using local suppliers and video conferencing. Sustainability questions have been revised in future year's annual reporting to strengthen existing reporting on this.

Teams have demonstrated their awareness of the potential environmental impact of their work, specifically seeking to minimise air travel between partner countries in line with the NIHR Carbon reduction guidelines indicated in guidance to award holders. NETSCC require teams to give full consideration to ways to reduce carbon emissions and lessen environmental impacts through minimising air travel, utilising video conferencing, virtual meetings and technology, use of local suppliers and other effective ways to ensure value for money across the portfolio.

The COVID-19 pandemic has necessitated further innovative solutions to continue work programmes and engagement during periods of severe travel and social restrictions which have significantly reduced environmental impact associated with international travel between partners.

6. Delivery, commercial and financial performance

6.1 Performance of awards on delivery, commercial and financial issues

Units are closely monitored to ensure projects deliver all the required outputs, adhere to agreed timescales, and minimise potential underspend where possible. As presented in Section 2.2, there are no serious issues affecting delivery with any of the Units.

The majority of the reported underspends were related to initial start-up delays as described in the previous Annual Review Report. As the Units have moved into their third year of work, reasons cited for delays include issues such as challenges with transfer of funds to LMIC partners, COVID-19 pandemic, delays in ethical approvals for studies, delays in recruiting staff members and unexpected contextual challenges.

The average percentage underspend was 26% across all the Call 1 Units in year 3 - a decrease of 11% from the 35% average underspend reported at the end of year 2 and with one award with a slight overspend. Based on current spend profiles, taking into account the non-cost extension process and change to programmes described below, modelling predicts this will reach an average 7% underspend by end of year 4. Year 4 estimated spend is based the Year 4 Q2 QSTOX returns. Five awards are predicted to deviate by 10% or more (under spend) and six awards are expected to be overspent (-1% to -16%) and how these are being addressed will be covered in the next reporting period.

During the reporting period, all 13 teams indicated that they would like to take up a formal opportunity to apply for no cost extensions of six months and longer where justified. The no cost extensions account for delays experienced due to the COVID-19 pandemic and act to reduce predicted underspend. Two Unit variation to contract requests were approved in the period, the later VTC was to address COVID -19 delays which enabled introduction of the new safeguarding and IATI contract clauses. The outcomes of the other eight awards in the process of contract variations during the period will be reported in year 4 reports. In this reporting period, five Units were successful in obtaining additional funding for FAF (see section 3.6)**.** FAF funds are to be made available only if all financial underspends are used at the end of the project. If underspends remain then the FAF funds awarded will be reduced on a pro-rata basis.

To inform the requirements for a future visits programme, NIHR staff made the Global Health Research programme's first two assurance visits in the reporting period. Visit documentation was developed through engagement with UKRI. Documents were shared with institutes for completion in advance of visits. Key learning points from the visits include:

February 2020 visit to Cape Town, South Africa:

- The Assurance Checklist template was not fit-for-purpose for use by downstream partners. This has subsequently influenced the structure of the NIHR template.
- Ideally partners should be given three months to complete the assurance template for NIHR review and prior to the visit.
- Funded partners needed clearer guidance on managing fluctuations in exchange rates. Guidance developed in late 2019 was better promoted to funded teams as a result.
- The language in the NIHR contract is challenging for some LMIC partners to understand and interpret. This will be taken into account in the next revision of the NIHR ODA contract.
- NIHR should consider mandating the use of NIHR logo asset register stickers. This will be reviewed in the next reporting period.
- Some partners reported a lack of awareness of the NIHR's requirements on safeguarding. More information and promotion of materials will be provided when the UKCDR review completes and the NIHR's position published.
- A number of suggestions to improve call guidance notes were made, including highlighting the need to provide finance and administrative support for partner PIs, not just those in the UK. These will be taken into account for future funding calls.

February 2020 visit to Rwanda

- Due diligence checks required before funding is awarded is time consuming and can involve multiple audits and long delays. The absence of a standard NIHR due diligence checks template has also contributed to the delays. A standard due diligence template was made available in the period on the NIHR website.
- A number of teams found NIHR restrictions in moving funds between budget headings was challenging and more flexibility on the part of NIHR was suggested. This will be taken into account in the planned review of the NIHR Escalation Policy.
- The NIHR approach of not releasing funds in advance of need and generally making payment in arrears is a challenge to most LMIC institutions; most teams felt that this should be addressed in future funding calls as LMIC subcontractors and partners often require funding before work begins.
- Reconciling differing donor and government requirements is challenging and leads to project delays. Additionally, funder requirements differ from one call to another and the applicants would prefer more consistency in approach. NIHR are engaging to ensure greater consistency in approaches where possible across ODA funders.

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

- Delivery partner to confirm whether or not International Aid Transparency Initiative (IATI) obligations have been met (please refer to https://iatistandard.org/en/iati-standard/). Yes/No

- If these are not yet met, please outline the reasons why.

Yes. DHSC reports relevant transparency data relating to the NIHR Global Health Research Units to the IATI registry on a quarterly basis, as part of the Department's commitment to aid transparency in compliance with the IATI standard.

All funding call guidance and outcomes are published in perpetuity on the NIHR website and full details of the research funded are available on the NIHR funding and awards and NIHR open data platform.

The Call 1 Units did not initially have a contractual obligation to meet the IATI standard by reporting data relating to ODA funding to the IATI registry, although new clauses around requirements for Contracting Institutions to report to IATI were introduced as teams were approved for changes to contract such as No Cost Extensions. The clause came into effect from Spring 2020 for all awards thereafter undergoing contract variations. Prior to this, NIHR engaged the Units at the 2019 cohort event highlighting the importance of transparency of ODA funding and encouraged them to have discussions within their contracting institutions to prepare them for the new contractual obligations to report to IATI within six months of the contractual change. NIHR continue to work with teams to support institutional adoption of reporting requirements within the lifetime of the awards and direct award holders to IATI reporting guidance and to respond to queries.

7. Monitoring, evaluation and learning

7.1 Monitoring

Monitoring activities throughout the review period and how these have informed programming decisions.

NETSCC are in regular contact with teams and attend independent Advisory Group meetings by video conference or face-to-face where feasible; invites are also extended to DHSC colleagues. Regular communication with the cohort of Unit Directors, Research and Finance Managers is maintained via the SLACK platform and email. NETSCC staff attend meetings such as conferences, workshops and stakeholder engagement events either in person or remotely, balancing environmental considerations.

The NETSCC document project issues on the MIS which are reviewed at the monthly Programme Management Meetings with DHSC. Sources of information and data captured include:

Per project:

- financial reports (quarterly)
- monitoring reports (6 monthly/annual/interim)
- trainee data reports (annually)
- independent Strategic Advisory Group meetings/ minutes
- evidence of due diligence and ethics approvals,
- evidence of policies, assurance audits on request
- project outputs
- email correspondence

Programme level:

- directors and project manager cohort meeting outputs
- SLACK GHR U/G community engagement channel
- site visits and in-country assurance visits to multiple partners

NETSCC actively monitors all projects across a number of areas, including but not limited to; progress against milestones, spend in relation to forecast, capacity strengthening activities, assurance and due diligence of downstream partners. Project risks are assessed for the duration of contracts to enable appropriate support to be provided to teams to mitigate any impact on the overall delivery. Where significant concerns are identified, NETSCC works with DHSC in line with the NIHR Global Health Research Programme Escalation Policy.

Annual reports provide detailed information on progress and allow in depth monitoring against contractual milestones and deliverables. They also provide key information on community engagement, equity of partnerships, capacity strengthening, outputs and

outcomes. They are used for monitoring risks and mitigations, and for ensuring effective governance, assurance and compliance. The annual reports also invite funded teams to give their feedback to NETSCC on areas for programme strengthening which ensures two-way learning. Depending on their complexity, reports are reviewed by at least two members of the NETSCC team. Following review, response letters are sent to project Directors highlighting the notable achievements and where further information is required.

Financial monitoring

Awards are required to submit a quarterly statement of expenditure which includes accurate spend to date, forecasts and details of any required budget amendments. The finance team spot checks receipts for purchases and require evidence that due diligence checks have been completed for all institutions in receipt of ODA funds. A final financial reconciliation will be required within three months of completion of the project awards. The team have prepared a template and guidance for final financial reconciliation and will refine this with feedback from the first awards finishing.

7.2 Evaluation plans and activities that have taken place across awards throughout the review period.

The monitoring, evaluation and learning approach for the cohort is being developed closely with DHSC and is aligned to the agreed results framework developed with DHSC and other NIHR Coordinating Centres. This approach will inform future annual reporting and data collection templates, ensuring templates, reporting and data capture processes take account of stakeholders' needs and requirements for transparency of ODA funding. In the period an evaluation of the FAF has been undertaken and recommendations for integrating this into future awards made to DHSC. Learning has been shared with the impact working group to inform learning and approach to other evaluations.

To navigate the challenging times ahead brought about by the COVID-19 pandemic, an evaluation exercise was carried out in April and July as part of the quarterly QSTOX financial reporting process. The evaluation aimed to help NIHR to understand and act to help funded teams during this constantly evolving and unprecedented health crisis. The information the teams were asked to provide included the following:

- anticipated delays in months per work package
- description of how the pandemic is affecting delivery of the work packages
- affected partner organisations
- potential request for no cost extension and for how long
- potential request for costed extension (*not supported for Units Awards*)
- options for team to shift research activities to achieve original objectives
- plans to request change to programme to include COVID-19 related research related to the original aims

- request to undertake COVID-19 work

The results were collated and helped to inform NIHR where the teams were being impacted and how they could be best supported. The findings are also shared on the NIHR Hub for cross-centre learning.

7.3 Learning

Examples of how learning from the NETSCC monitoring approach has helped with programme improvements include:

- modifying and clarifying NIHR guidance to funded teams
- informing content for new funding calls
- identifying more streamlined and efficient way to capture data
- informing considerations for the future assurance visits process

NIHR encourages funded awards to learn from one another through their research collaborations and by the sharing of research experiences. Mechanisms through which this is achieved include webinars, cohort meetings and SLACK.

NIHR Global Health Research webinars are a key NETSCC engagement tool: through using this approach, NIHR creates spaces for dialogue that can engage a global audience and save substantial travelling time and expense, as well as encourage equitable participation. In December 2019, NETSCC hosted a well-attended webinar on finance and project management, which attracted 80 participants. Separately NETSCC delivered presentations at other face to face events including a Finance Managers workshop in Cambridge in September 2019, hosted by an NIHR Global Health Research award-holder.

- Key lessons

This section summarises portfolio learning from monitoring activities and cohort events over the reporting period:

Collaboration Agreements learning points include:

- NIHR sharing an approved collaboration agreement template(s) would lessen the time taken by the teams to draft an acceptable agreement.
- the NIHR position that IP ownership should initially rest with the main contractor is not considered by all partners to fully promote equitable partnerships, and where appropriate changes in ownership are supported by NIHR. Examples of where an equitable split has worked well would be valued given the optics for partners.

- going ahead with a single institutional collaboration agreement reduced delays compared to use of an all-encompassing agreement across the partners and allowed for research to continue in a timely way.

Data Governance learning points include:

- on recruiting data collection sites, some sites require a Data Sharing Agreement ahead of sharing materials so ensure such agreements are in place at the beginning of the contract to avoid delays
- where necessary, databases and datasets can be exploited, with minimal cost to become sustainable – example e.g. via grant-back licence requirements for analytical outputs generated by others using such datasets, or through nominal fees for accessing or interrogating datasets.
- some GHR teams work in compliance with the Nagoya Protocol for 'Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation' - this protocol supports transparency for providers and users of genetic resources and ensures benefit-sharing when these resources leave a country.

Ethics process learning points include:

- understanding the requirements for ethics approval, regulatory approval, governance and sponsorship issues in different LMIC contexts at the start of the programme can minimise project start-up delays.
- establishing global health focused ethics sub-committees for regulatory review of global health projects at research institutions may reduce delays to ethical approvals.
- challenges may be further minimised through (i) training to support capacity for setting up international research studies (ii) good communication and sharing best practice with other Groups and Units.

Partner and project management learning points include:

- partner relationships require a dedicated project manager to ensure robust quality systems, coordinate regular project management meetings, communications and monitor progress. In-country project managers help to keep programmes running well.
- support for south-south learning and networks between LMIC Lead PIs has proved invaluable but shared costs for the central coordination for sustainable networks present challenges with different award lengths or where these cannot be covered as part of a partner award.
- clear allocation of writing roles, the provision for coaching and editorial support is an effective way of producing outputs equitably when working in cross partner teams.
- ensuring that all projects and partners have clear milestones and deliverables, to monitor and report progress against quickly identifies challenges and corrective interventions.

- active monitoring through onsite staff, site visits and dialogue with project officers/managers aids understanding of contextual issues and shared understanding of the LMIC needs.
- consider the potential for political and environmental instability in LMIC contexts and identify cultural barriers at the outset of a project.
- in politically unstable environments, partners need to work persistently with key informants and influential policymakers to maintain policy dialogue.
- ensuring institutions support costs for child/elder care positively facilitates women/early career investigators/those with caring responsibilities to fully participate in research activities and partner networks.
- engage a wider range of staff within ministries to mitigate for the high turnover and ensure stability/continuity.
- a larger number of hospital sites engaged in each context will influence speed of recruitment for Hubs undertaking clinical trials.
- UK led approaches to address issues of equality diversity and inclusion e.g. peer review may need to be more sensitive and culturally appropriate to the LMIC contexts.
- employing permanent staff e.g. medical officer/s ensures project efficiency and continuity by avoiding a burden on additional training, handover of projects with part-time/temporary staff.

Language and Communications learning points include:

- creation of networks of early career researchers to engage with their peers and to develop their language and communication skills.
- Zoom is the most recommended platform for remote meetings where robust audio is vital; WhatsApp is useful for day-to-day team connectivity.
- access to English language training for LMIC colleagues/students may be needed to help them fulfil their potential and effective participation in the research projects.
- Interactive communication sessions with a variety of small and large group interactive discussion and exercises, case studies, role play and are generally found to be more effective and engaging.
- NIHR's use of Slack has facilitated open information sharing and discussion between awards related to difficulties experienced during COVID-19.

CEI and stakeholder engagement learning points include:

- engaging with all stakeholders including, policymakers, academics, clinicians, patients, carers, and community members and leaders throughout the research process to support local impact.
- improving the understanding of the local context and familiarity with the CEI concept to increase the chances of the project being successful in LMICs.

- maintaining regular communication with research teams through WhatsApp groups, email, and monthly knowledge exchange meetings and dedicated follow-ups are necessary for continued engagement.

Financial management learning points include:

- transfer of funds to partners can be challenging and appointing a dedicated finance officer in some teams have helped.
- budget forecasting can be difficult and project partners need to be trained adequately
- budgeting for recruitment of project managers/support staff in-country early on in the project start-up phase helps to avoid unnecessary delays.
- UK partners making payments to suppliers, with goods delivered directly to collaborators can be necessary to minimise in-country delays and barriers.
- UK institutions pre-financing LMIC partners - at their own risk can help reduce delays in recruitment and start up.
- delays in recruitment of staff leads to accumulation of underspend on salaries and there is need for teams to raise underspend reallocation with NIHR well in advance via a formal NIHR change to programme process.
- appointing a liaison officer improves communication and facilitates compliance with financial procedures.
- finance and project management webinars provided an opportunity for teams to network with other teams and to ask questions on a range of project management and financial matters.

7.4 Outline key milestones/deliverables for the awards for the coming year

Projects have set their milestones for the next 12-month reporting period in their annual reports. Contractual milestones are (i) to continue to complete their quarterly financial and annual reports, (ii) deliver on outstanding deliverables, and (iii) work towards funded outcomes. Key to success is demonstrating the impact of ODA funding in addressing priorities for research and capacity building in LMICs and in influencing policy and practice through effective stakeholder engagement ahead of contract end dates. Where awards have been extended some awards have been asked for interim reports to span a period between the usual annual report and requirement for submission of a final programme completion report. The programme completion template has been reviewed and approved with DHSC during this reporting period and the framework and process for programme completions are being finalised.

Assurance and risk management processes are continuing to develop and are incorporating learning from FCDO and UKRI. A due diligence template and an assurance template have been agreed. In February 2020, in-country assurance visits were made to Rwanda and South Africa, to provide opportunities for reviewing in-country partner progress and equity of relationships with the UK, testing NIHR assurance templates to assess policies and the compliance with DHSC contractual terms. In-country presentations given by NIHR staff, and feedback was sought to inform shared learning and best practice. Learning from assurance visits has been collated and key points to inform development of best practice and improved guidance is captured in Section 6.1.

7.5 Any other comments/feedback/issues to flag to NIHR/DHSC? This could include any suggestions on anything the delivery partner could do to improve its support for award holders, or on anything that DHSC could do to better support the delivery partner.

The key lessons picked up from the Call 1 Units' annual reports, which NIHR may wish to take into consideration in similar future programmes, are summarised as follows:

- NIHR should provide collaboration agreement templates which teams could use to lessen the time teams spend in drafting agreements with their partners.
- the starting position for IP ownership resting with the UK lead institution is deemed unequitable by partners in LMICs. On a case-by-case basis shared agreements are increasingly being requested
- the teams valued NIHR information webinars e.g. on project and financial management and welcome further opportunities to engage with these, as well as face-to-face events which have been very well received.
- new NIHR funding opportunities should be communicated to the cohort of Trainees to raise awareness of larger grants they could consider applying for.
- SLACK, the information messaging platform hosted by NIHR, is a useful space for knowledge exchange and collaboration between GHR Units and Groups cohorts. SLACK has been useful particularly at establishing initial connections and networking between team

Published to GOV.UK in pdf format only.

[Directorate/Division/Branch]

www.gov.uk/dhsc