



Department
of Health &
Social Care

Antimicrobial Resistance (AMR) Structured Operational Research and Training Initiative (SORTIT) Annual Review 2020

NIHR Global Health Research Portfolio

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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. There are also sections on value for money, risk management, financial reporting, monitoring, evaluation and learning updates.

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. Tips on reporting style and content to minimise the need for redrafts and edits include the following:
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. DSHC summary and overview

1.1 Brief description of AMR SORT IT programme

This programme aims to build sustainable operational research capacity to generate and use evidence on the emergence, spread and health impact of antimicrobial resistance (AMR). The programme uses the Structured Operational Research and Training Initiative (SORT IT), which is a global partnership coordinated by TDR, the Special Programme for Research and Training in Tropical Diseases. TDR is co-sponsored by the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP), the World Bank and World Health Organization (WHO). SORT IT supports countries and institutions to conduct operational research around their own priorities, build sustainable operational research capacity, and make evidence-informed decisions for improving programme performance. The target audience are front-line health workers and decision makers.

The AMR SORT IT programme targets seven low- and middle-income countries (LMICs): Colombia, Ecuador, Ghana, Nepal, Myanmar, Sierra Leone and Uganda. These countries align with those supported by the Fleming Fund, a £265 million UK aid programme managed by the Department of Health and Social Care which aims to generate, share and use antimicrobial resistance data. AMR SORT IT research priorities are tailored to local needs and are coordinated with in-country Fleming Fund activities where these exist. Research priorities are also in line with the Global Action Plan on antimicrobial resistance, published by the WHO.

1.2 Summary of AMR SORT IT programme performance over the last 12 months (general progress on activities, early outputs, outcomes, impacts across all awards)

In addition to the thirty-six research studies (started in 2019) in Ghana, Myanmar, Nepal, Sierra Leone and Uganda, the AMR SORT IT programme (in 2020) received high-level endorsement from AMR coordinating committees WHO country and regional offices and implementing partners for 24 additional research projects in Myanmar and Sierra Leone. The AMR coordinating committees are the highest decision-making body in the target countries and are responsible for ensuring the implementation of national AMR action plans and setting research priorities. TDR also joined forces with WHO regional offices for Africa, the Americas and South-East Asia with a Grants Scheme to support 13 additional prospective studies to tackle AMR. TDR also provided support to WHO country offices and One Health committees, improving strategic planning and implementation of AMR plans.

The COVID-19 pandemic significantly affected the programme's progress, and consequently the programme's logframe could not be completed due to postponement of activities. TDR used an evidence-informed approach to guide the proposal to reschedule SORT IT training modules. They conducted an online survey for all AMR SORT IT participants from target countries, including partner institutions and WHO country offices. Of the 133 individuals involved in the project, 132 responded: 97 (73%) reported being redeployed to the frontlines of the COVID-19 response, using the skills they had learnt from SORT IT. This suggests that the investment in research training to date helped to strengthen health system resilience by equipping health workers with the skills and competencies needed for tackling COVID-19 in various ways. It also supported the integration of research within health systems.

To overcome COVID-19 restrictions on travel and gatherings, we championed the development and deployment of a 'SORT IT online platform' with a view to restarting and propelling SORT IT training in 2021. This online training platform was successfully piloted for a SORT IT course on tuberculosis in late 2020 and the experience has set the pace for restarting AMR SORT IT trainings in early 2021.

1.3 Performance of delivery partners

TDR have kept DHSC informed on progress of AMR SORT IT activities via regular update meetings. In the early phases of the COVID-19 pandemic, TDR completed a COVID-19 impact risk assessment for the programme at the request of DHSC. They submitted a six-monthly report in July 2020, trialling DHSC's new reporting template, and an annual report in January 2021.

Based on recommendations from the 2019 annual review, DHSC consulted the Department for International Development (now Foreign, Commonwealth and Development Office) colleagues on their SORT IT programme closure and lessons learned, ensuring key learnings could be applied to DHSC's AMR SORT IT programme. Consequently, DHSC and TDR discussed and agreed amendments to the logframe in June 2020. Amendments included greater clarity on the methodology to assess impact on policy and/or practice. Several targets were amended for indicators where previous targets had already been exceeded. This reflected the programme's early successes and continued strive for ambition.

However, the impact of COVID-19 severely affected the programme's progress. As part of mid-year reporting in July 2020, TDR requested a no-cost extension (NCE) to the programme for 12 months, with a proposed new end date of December 2022. This would enable rescheduling of delayed training modules, providing sufficient time for the modules to be conducted and completed. Due to the one-year Spending Review in autumn 2020, and reduction of the UK aid budget from 0.7% of Gross National Income (GNI) to 0.5%, DHSC communicated that a decision could not be made regarding this request until 2021.

TDR continued to support cross-government coordination, and participated in a Fleming Fund Fellowship coordination meeting, which focussed on ways to improve links and coordination across different Fleming Fund fellowships and capacity building initiatives, supporting a community of practice within countries. TDR actively engaged in discussions and forged new links with Fleming Fund colleagues.

Communication regarding financial progress has significantly improved over the past 12 months, with updates on progress occurring at regular intervals. TDR's latest finance report assumes that an NCE may be granted beyond the current MoU period (30/11/2021). Currently, financial projections show an anticipated underspend of £1,502,341 against the original MoU value by the end of the current MoU period. TDR's full anticipated spend amounts to £7,510,607, £800,000 of which is a final payment proposed for disbursement from DHSC outside of the current MoU period.

With the delivery of training modules taking place online for the time being, it is likely that the programme will continue to underspend, as virtual delivery is more cost-effective, drastically reducing the need for travel and associated costs. If an NCE is granted by DHSC, financial forecasts anticipate an underspend for the programme against the original MoU value. DHSC will consider the implications of this simultaneously while reviewing the NCE request.

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

Adapting to changing contexts: The COVID-19 pandemic created significant challenges for the programme, with travel halted and SORT IT modules unable to take place. TDR initially planned to postpone in-person modules for several months. When it became apparent that travel restrictions would continue for a longer period of time, TDR sought to rapidly develop an online platform to deliver SORT IT modules virtually. However, the platform's development took time to develop and test, resulting in inevitable delays to the programme. The platform, which was up and running in late 2020, enables a more agile model of delivery, and similar platforms could be considered for other individual research capacity strengthening initiatives that may consider remote delivery. DHSC and TDR should continue to reflect on lessons learned from adjusting to remote training, sharing key experiences with other organisations involved in the virtual delivery of research capacity strengthening activities going forward.

Coordination across government: Ensuring alignment and coordination with other Official Development Assistance teams in DHSC and in FCDO has been beneficial to the programme. The DFID SORT-IT programme closed in March 2020, and lessons learned

were shared with DHSC colleagues. TDR's engagement with Fleming Fund fellows has also enhanced a joined-up approach to AMR capacity building.

No-cost extension: TDR requested an NCE 16 months prior to the programme ending. While this was too early for DHSC to be able to make a decision, advanced warning for planning and anticipated issues was welcome, enabling DHSC to take a broader look across the global health research portfolio and assess potential delays and knock-on effects due to COVID-19.

Finance: Communication on finances has improved over time, and six-monthly instalments continues to enable closer monitoring of finances. Open discussions on financial scenarios, length of extensions and anticipated underspend of the programme has helped to inform decision-making for DHSC.

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

Recommendation	Owner	Timeline
Review and make decision on NCE request, considering various scenarios for extension timelines	DHSC	June 2021
DHSC to observe virtual modules in 2021/in-person modules if appropriate	DHSC	Dec 2021
Continue xHMG coordination with Fleming Fund and FCDO colleagues where relevant	DHSC and TDR	Dec 2021

2. Summary of aims and activities

2.1 Brief outline of AMR SORT IT programme aims

Build sustainable operational research capacity to generate and utilise evidence on the emergence, causes, spread and health impact of AMR in low- and middle-income countries. Specific objectives are to:

1. Build adequate and sustainable local Operational Research (OR) capacity on AMR
2. Support OR for:
 - Improved surveillance and monitoring of the AMR situation in countries.
 - Identifying drivers of antimicrobial drug resistance in human populations and enhancing prevention.
 - Improving antimicrobial stewardship and procedural interventions
3. Build adequate and sustainable structures and processes for evidence-informed decision-making at national level.
4. Foster mechanisms for knowledge sharing to maximise the potential for broader research impact.

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

AMR-SORT IT Programme targets	Current status of progress against milestones/deliverables	If the award is not on track to contribute to expected outcomes and impacts, why not? What are the potential impacts of this and how have plans been revised to accommodate this?
42 research subjects started	36 (86%)	COVID delays in 2020 have obliged rescheduling activities into 2021 and beyond
80% of first authors from LMIC	100% - exceeded	
30% female first	47% - exceeded	

AMR-SORT IT Programme targets	Current status of progress against milestones/deliverables	If the award is not on track to contribute to expected outcomes and impacts, why not? What are the potential impacts of this and how have plans been revised to accommodate this?
authors		
50% government first authors	69% - exceeded	
80% milestone completion (SORT IT modules)	100% exceeded	
80% participant satisfaction score (SORT IT modules)	90% - exceeded	
30% southern institutions involved	75% - exceeded	
30% of mentors are alumni	70% - exceeded	

- 2.3 Delivery partner's assessment of how individuals/communities (including any relevant sub-groups) have been engaged and their needs reflected in identifying research priorities, design/planning, implementation, analysis, and reporting and dissemination

3. Outputs and outcomes

High quality policy/practice relevant research and innovation outputs

3.1 Aggregated number of outputs by output type.

Output type	Total number (cumulative number since funding began)
Standard operating procedures for SORT IT	1
SORT IT powerpoint presentations on AMR	2
Research protocols	36
SORT IT curriculum	
- For protocol development	1
- For data capture and analysis	1
- For manuscript writing	1
- For knowledge management	Under development
Database on SORT IT facilitators	1
Database of SORT IT participants	1
Database on SORT IT metrics	1
Platform for data-sharing (COVID/AMR)	1
SORT IT online training platform	1
Newsletters on SORT IT AMR	2

3.2 List of research and innovation outputs produced that are considered 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.

Award	Output title	Authors	Date	Output type (e.g. article, book chapter, policy brief etc)	DOI (where applicable)
SORT IT-AMR project	1. Innovative SORT IT online training platform to overcome COVID related restrictions.	TDR/TB-RPC	October 2020	Online platform that can be used for capacity building even in the event of future outbreaks	https://sortitresearch.com/en
	2. Operational research curriculum	TDR and partners	2020	SORT IT curriculum for research protocol, data analysis, manuscript writing that can be used by various implementing partners for capacity building in operational research.	

3.3 Lead/senior authorship

Due to COVID delays in 2020, the first manuscripts will be published in 2021 (this will be covered in the next annual report).

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

Due to COVID delays in 2020, the intended SORT-IT outcomes on informing policy, practice and individual/community behaviour in LMICs are expected to be reported in the 2021 report, once research projects have been completed and published.

However, an online survey revealed that 73% of 132 individuals directly involved with the AMR-SORT IT project are applying their acquired skills on the front lines of the COVID-19 response. It shows that SORT IT has equipped frontline health workers with the skills sets and competencies needed to respond to the COVID-19 pandemic and similar pandemics in the future. These activities have been synergistic with, and complement ongoing AMR activities and further contribute to health system resilience by: protecting health workers,

keeping health facilities safe, improving laboratory diagnostic capacity and informing communities on preventive measures.

The SORT IT AMR programme is intentionally focused on LMIC countries where the burden of AMR is high, particularly for the rural poor who have limited access to health facilities and antibiotics. Several research projects are focused on vulnerable groups such as neonates and women where policy and practice change are needed to reduce AMR related mortality. The World Health Organizations global action plan to tackle antimicrobial resistance emphasizes the “One Health” approach. This approach englobes humans, animals, the food chain, the environment and the interconnections between them as one entity. Thus, we included topics such as improving water quality, waste management, rational use of antibiotics in animal husbandry which will have a wider benefit on the lives of poor communities by informing policy, practice and community behaviour.

By embracing a “One Health” approach in the planning process, comprehensive engagement has been established with AMR coordinating committees, WHO country/regional offices and implementing partners in target countries in Asia, Africa and Latin America. SORT IT activities were fully aligned with national AMR action plans and complement ongoing AMR activities (including those of the Fleming Fund).

This bottom-up approach has allowed those who are expected to use the results such as members of national AMR committees, programme managers in disease control programmes, and other decision makers included in the technical working groups of the multisectoral platform on One Health. We have engaged early with them and they have been at the forefront for identifying relevant research that fits with national AMR priorities. The mechanisms for participant selection and research topics were also endorsed by these stakeholders.

SORT IT is now geared to catalyse the entire evidence-to-action cycle from defining the most relevant research, to implementation of research, to knowledge management, and to impact on the ground.

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

Training level	Total number who are currently undertaking or have completed during the award period	% LMIC nationality	% female
2019 - Operational	Each research project	100%	47%

Training level	Total number who are currently undertaking or have completed during the award period	% LMIC nationality	% female
research	simultaneously implements four layers of training namely: 1) Training of frontline workers and programme staff 2) Training of SORT IT alumni as trainers 3) Training of academia as trainers and 3) Training of WHO country staff. In 2019, we enrolled 36 frontline health workers with research projects. 31 SORT IT alumni, 12 academic staff and 16 WHO staff were also part of the team. Roughly 3 persons are trained per research project		
2020 – operational research	No trainings due to COVID-19. Activities to restart in early 2021	NA	NA

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.

1. Research training: Has included 36 projects each led by a front-line health worker and brought together a network of 25 partner institutions from 24 countries creating Low and Middle Income Countries (LMIC) to LMIC and High Income Countries (HIC) to LMIC networks and partnerships (networking and building communities of practice). We managed to conduct four levels of training at the same time in SORT IT workshops that has multiplied the gains in capacity building and value for money. These four levels are:

Level 1: 36 research participants with priority research subjects on AMR included in the SORT IT training programme

Level 2: Training of SORT IT alumni and new trainers (Training of Trainers) - 31 SORT IT graduates were paired up with senior mentors and trained on teaching OR through the Training of Trainers approach

Level 3: Training of academia: 12 individuals from various academic institutions were trained to become trainers.

Level 4: 16 lead AMR staff from three WHO offices were trained on OR

2. Facilitating integration: All SORT IT activities and research studies were aligned with and integrated as part of the strategic AMR plans of target countries and the 5 pillars of the global action plan on AMR. As such, AMR SORT IT has contributed to informing the five pillars of the AMR plan at local and global levels.

3. Digital solutions: An innovative online SORT IT training platform was developed to overcome COVID-19 related restrictions on travel and gatherings and now allows for virtual implementation of SORT IT capacity strengthening activities and training through remote facilitation.

[The platform](#) can be used in the circumstances where the standard face-to-face approach is not permissible (e.g, in future outbreaks).

4. Software development: EpiData software for quality-controlled data capture and analysis was adapted to the needs of AMR-SORT IT.

5. Research grants: 13 research grants were provided to five countries to support locally driven prospective AMR research activities and strengthen research capacity of local institutions.

The project has gained significant recognition as illustrated below:

"TDR's approach to operational research is contributing to national efforts to fight AMR by developing the capacity to generate and use data on the emergence, spread and health impact of AMR."

Jos Vandelaer, WHO Representative in Nepal

"SORT IT is contributing to the global AMR effort by developing operational research capacity that helps monitor country-level progress in real time."

Marc Sprenger, Former Director, WHO AMR Secretariat

- 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)

	Total number of FTE support staff (research managers, finance, admin, community engagement practitioners, other) in post during the last 12 months
Employed in LMICs	12 FTE (6 SORT IT Technical Officers and 6 SORT IT fellows)
Employed in HICs	3.1 FTE (1 SORT IT coordinator, 1 SORT IT technical officer, 0.2 field implementation support, 0.5 finance controller, 0.2 knowledge management, 0.2. admin support)

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).

Collaboration was established with WHO offices in seven countries in Asia, Africa and Latin America. Twenty-five partners including non-governmental organisations, academic institutions and disease control programmes joined the AMR SORT IT partnership. Eighteen (75%) of these institutions are from the Low and Middle Income countries (LMICs) and were involved with LMIC - LMIC partnerships while six were from High Income Countries (HICs) engaging in HIC - LMIC partnerships.

SORT IT mentors originated from 24 countries and 70% are SORT IT alumni. This shows TDR's capacity to effectively mobilise and convene institutions and expertise at a global level ("thinking global, acting local").

This building of communities of practice is already having a "domino effect", with institutions such as the Damien Foundation (Belgium), the Institute of Tropical Medicine (Belgium) and Médecins Sans Frontières - are taking up AMR as part of their institutional priorities.

The project has gained significant recognition as illustrated below:

"TDR's collaborative relationship with countries and the complementarity it brings to the One Health approach are valuable contributions to the fight against AMR."

Hanan Balkhy, WHO Assistant Director General for AMR

3.9 Aggregated HIC/LMIC spend across all awards

	Total committed amount (GBP) allocated to:	% of total committed amount to all institutions:
UK/HIC institutions	£ 546,535	23%
LMIC institutions	£ 1,827,165	77%
All institutions	£ 2,373,700	

3.10 Delivery partner's summary of any other noteworthy outcomes beyond those captured above (note that these may include unanticipated outcomes (both positive/negative), outcomes outside health, and any other secondary benefits to the UK or any other countries)

WHO country staff and AMR SORT IT officers and operational research fellows in countries have increased their capacity for research and now form part of the mentoring team for SORT IT for tackling AMR. The AMR SORT IT programme has galvanised the AMR committees in country by bringing various members of the One Health platform together and has promoted collaborative planning to tackle AMR.

The early engagement of these AMR committees and buy-in within the AMR SORT IT project helped catalyse an approach that fostered embedding of those trained, their retention within programmes and their eventual enablement in building structures and processes for informed-decision making.

The capacity building perspective for individuals now embraces the concept of “Train individuals, Embed them within disease control programs to build the critical mass of human resources for research, Retain them by minimising turn over and Enable them by equipping them with the right skills and tools for tackling AMR. This “Train, Embed, Retain, Enable” concept is in line with WHO's General Programme of Work (GPW-13).

The fact that over 70% of all those involved with the AMR-SORT IT project are on the frontlines of the COVID-19 response has wider benefits including controlling the spread of new infections on a global basis including the UK. Control of AMR which also has pandemic potential is of indirect benefit to all countries including the UK (“AMR there, is AMR here, is AMR everywhere”)

4. Value for money

- Delivery partner to summarise their approach towards ensuring value for money in how the research is being undertaken. For example:

4.1 Economy - how are you (the delivery partner) ensuring that funding is being spent on the best value inputs?

WHO procurement measures include tenders for hotels and procurement of supplies with strict internal procedures that ensure competitive pricing.

Use of WHO country office staff for the organisation of SORT IT training courses cuts down admin and other costs.

We championed the development and piloting of a 'SORT IT online platform' to catch up on COVID-19 delays in implementation. Developed with a SORT IT partner in Armenia (TB-RPC), this platform should allow us to run online trainings thereby avoiding the need for travel and accommodation with potential cost savings. It will also allow us to bring subject matter experts to link in for one- or two-hour sessions which in the past often resulted in travel to countries. The initial development of this platform was supported by USAID (and costed about 20,000 USD) with further development ongoing with NIHR funds. Using this online platform, we estimate a 30-40% reduction in costs of training modules. This innovation shows leverage, will reduce costs and improve efficiencies.

For more information, please see link:

https://drive.google.com/file/d/1IpDfzF8_DFHvKP0AFMWxxwv8rUO5lgKG/view?usp=sharing

The AMR-SORT IT programme has staff who are embedded in WHO country offices and these individuals were deployed to the frontlines of the COVID-19 response. Their activities are contributing to health system resilience by protecting health workers, keeping health facilities safe, improving laboratory diagnostic capacity and informing communities on preventive measures. This is a strong synergy between AMR work and the COVID-19 response. In addition, 70% of SORT IT alumni are on the front lines of the COVID-19 response applying their SORT IT skills. This shows that they have acquired the skills and competences which are needed now and in the future.

Enhanced efficiency - how are you (the delivery partner) maximising the outputs (research and innovation outputs, knowledge exchange, strengthened researcher and support staff capacity, strengthened partnerships/networks) for a given level of inputs?

The value for money of this project has continued due to TDR's established convening power, global engagement capacity and the SORT IT know-how that has been built over the past 12 years.

The use of 31 previously trained SORT IT alumni from previous SORT IT work as mentors in the training involving new frontline health workers brings efficiency.

The development of an online platform that allows virtual training to take place has also increased efficiencies, by allowing projects to avoid being significantly delayed due to the pandemic related travel bans. It has also enhanced the ability to bring together subject matter experts to link in for short sessions that would have in the past resulted in them traveling to countries.

Effectiveness - how are you (the delivery partner) assessing that the outputs deliver the intended outcomes?

To promote effectiveness and impact, we continued to engage early with those who are expected to use the results of the research such as members of AMR committees, managers of disease control programme, and decision makers within technical working groups and other relevant stakeholders.

We have time-bound milestones and performance targets against which we assess achieved outcomes. We also have a post project survey that assesses the impact of research on policy and/or practice on the ground.

4.2 Equity

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

We have included gender and geographic equity in the participant selection process and we specifically target vulnerable groups as a priority for research topics. For example, studies on neonates and women wherever possible. Participant selection processes have promoted gender and geographic equity and we promote LMIC first authorship in published outputs. 47% of selected front-line workers in the SORT IT training programme are women and we aim to reach 50%. In terms of geographic equity, for example, in Nepal, the selections committee considered geographic location as part of the applicant selection process.

The AMR-SORT IT programme focuses on seven LMIC countries, some of which have weaker health systems and populations are generally vulnerable to AMR. This is due to limited or lack of access to health care facilities, inadequate laboratory diagnostic facilities and limited access to effective antibiotics due to availability or high costs. In many LMICs, the use of suboptimum doses of antimicrobials, or using antimicrobials to which resistance has already developed, fosters drug resistance.

These geographic and socio-economic perspectives contribute towards an equitable approach to programming.

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

In order to ensure that funded activities benefit vulnerable groups, TDR work to ensure that funded activities are focused on responding to nationally relevant research questions, integrating the research agenda into the national plans and ensuring endorsement of research participants by multisectoral AMR committees. This has included involving the health, agriculture and environmental sectors. The AMR committees in each of the target countries (comprising of all key stakeholders including the community) were well placed to guide us on issues of geographic and gender equity, dissemination of research findings and eventual research uptake.

- 4.3 List of any additional research and infrastructure grants secured by LMIC partners during the course of this NIHR funding - including value, funding source, lead institution and country, what % of additional funding allocated to LMIC partners, HRCS code.

Not applicable

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.

Risk	How is the risk being managed/mitigated?	Current status
COVID-19 pandemic and continued embargos on travel and gatherings into 2021 and beyond	We have rescheduled SORT IT trainings to restart in January 2021. We developed an innovative SORT IT online platform (a digital solution) to continue trainings and remote mentoring in 2021 but hope that face-to-face and hybrid trainings can start in the second or third quarter of 2021.	<u>Likelihood</u> : Medium <u>Impact</u> : low due to availability of an on-line training platform with which we can deliver trainings.
Non-availability, drop-outs or illness of some research participants as 70% of those involved with the AMR-SORT IT project are on the front-lines of the COVID-19 response.	We have been liaising early with AMR technical committees, WHO country offices and researchers to provide replacements in case the initial researcher is unable to participate.	<u>Likelihood</u> : Medium <u>Impact</u> : Medium as this will influence the expected outcomes in terms of numbers who completed the SORT IT programme successfully.
Difficulties of researchers to collect research data on time due to over-riding COVID-19 related priorities	We have been liaising with WHO offices to provide additional data collection staff who can perform field data collection.	<u>Likelihood</u> : Medium <u>Impact</u> : Medium as the COVID-19 pandemic is ongoing.
Currency fluctuation risk between UK£ and US\$	Contingency was included in budget lines	<u>Likelihood</u> : low <u>Impact</u> : low
Lack of buy-in from WHO country offices and AMR committees	Involvement in planning and early engagement	<u>Likelihood</u> : Low (engagement has been established with AMR committees and WHO offices) <u>Impact</u> : Low

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

WHO has a written policy on combatting fraud and corruption, and TDR confirms that WHO's policy will be fully implemented if concerns arise. TDR will take timely and appropriate action to investigate any allegations of fraud and corruption in accordance with its accountability and oversight framework. If an allegation is found to be substantiated through investigation, WHO will give due consideration to timely and appropriate sanctions in accordance with regulations, rules and procedures, and full recovery is sought from the recipient entity. TDR will keep DHSC informed through mechanisms outlined in WHO's policy (reporting to governing bodies and to donors).

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.

As illustrated in the 2018 External Audit of TDR and in the annual reviews of the Internal Control Framework, TDR follows WHO's policy on internal controls, and we comply with WHO mechanisms for safeguarding assets, including preventing and detecting errors, theft, fraud. In addition to that, for this project, to enhance safeguarding of policies and processes, TDR has introduced:

A. Safeguarding SORT IT trainees, partners and beneficiaries:

1. In all our activities, we abide by WHO's policies on prevention of any form of harassment, sexual abuse, or violence of any sort and each staff member is trained and retrained on these aspects every year. Every employee is also obliged to respect these policies as part of the contract agreement. There are also staff seminars on this topic regularly. As for research, we follow all the applicable GCP rules and standards, that safeguard the rights and wellbeing of research subjects.

<https://intranet.who.int/sites/ilearn/documents/prevention%20of%20harassment%20faqs.pdf>

<http://intranet.who.int/sites/paac/documents/policy%20on%20preventing%20abusive%20conduct%2001032021.pdf>

2. The frontline workers being trained are all required to be embedded within national programmes and thus likely to be retained and enabled to carry out further research that benefits the health system. The application process included the need to be ‘embedded’ within the health system and this is meant to safeguard the retention of those trained.

3. An online alumni network allows regular contact and monitoring of those already trained from the AMR SORT IT programme and this has enhanced community spirit and solidarity in tackling AMR. It also provides a safeguard to maintain the partnerships built through the SORT IT programme.

B. Safeguarding assets from theft/fraud etc:

1. In terms of financial processes, we perform quarterly follow up of actual expenditures against planned expenditures and forecasting by all WHO country offices in target countries. We also perform a quarterly review of all expenditures by the finance focal point and feedback to countries. A headquarter approval process for expenditures is in place based on budget lines.

2. In terms of down-stream implementing partners, we work through performance-based contracts with deliverables. Payment is made on a staggered basis and linked to deliverables.

3. WHO procurement measures include tenders for hotels and procurement of supplies with strict internal procedures that ensure competitive pricing

4. Quarterly meetings with WHO country staff involved with the AMR-SORT IT project to highlight successes and challenges and slate the way forwards.

5. Improved project monitoring through a TDR e-tool (e-TDR)

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

We have developed a virtual training platform which provides an alternative means of training during the COVID-19 pandemic. This would be of wider benefit in reducing airline flight related carbon emissions in 2021 and beyond. Going forwards, we plan to use the experience to introduce a hybrid approach of face-to-face and online sessions for training and other meetings /workshops.

6. Delivery, commercial and financial performance

6.1 Performance of awards on delivery, commercial and financial issues

Expenditure in the year 2020 was £1.3m (with an additional £0.5m committed costs) against planned costs of £2.3m. The variance is due in the most part to the COVID-19 pandemic with cost savings from courses related to moving to a virtual platform and courses postponed until 2021.

In 2020, the planned training modules of the African and Asian regional SORT IT courses on writing up 24 manuscripts (Modules 3) and providing the tools needed for effective research communication (module 4) were postponed due to COVID-19.

Similarly, the National SORT IT trainings workshops intended to generate 48 research protocols and data collection instruments (Modules 1 and 2) in Colombia, Myanmar, Nepal and Sierra Leone were postponed and have been re-scheduled to the first half of 2021 using a virtual platform. (£0,4m).

All performance-based contracts with downstream implementing partners were extended into 2021 and payments deferred to ensure that all desired deliverables are met.

Salaries of WHO country office staff and funding of AMR coordination activities continued in countries as these were critical to uphold ongoing frontline activities of the COVID-19 response by enhancing health worker protection, enhancing laboratory capacity and surveillance and improving awareness on preventing COVID-19. There is a strong synergy between the AMR response and the COVID-19 response which will prove vital for continuing, with greater strength, the AMR activities in 2021.

There were also delays in administrative and ethics approvals for prospective studies related to small grants and in the recruitment of AMR focal points and fellows. The recruitment issues have since been solved. Procurement of reference lab supplies and equipment were also slowed down as the over-riding priority for countries was on the COVID-19 response.

Close financial monitoring and re-profiling of year 2 (2020) spend, including regular communication with the country offices, was done to ensure spend profiles were as accurate as possible. Revised planned costs as at September 2020 were £6.7m, £1.5m (18%) lower than the total original budget of £8.2m. Current projections of planned costs by the end of year 3 (2021) are £6m due to activities delayed until 2022 (pending approval of a NCE). As a result of cost savings, a new SORT IT national course in Ghana has been proposed to start in 2021. A request for this additional activity to the budget will be formally requested in 2021. No additional funds are required.

A request for an NCE to June 2022 would ensure that all the planned modules of the SORT IT courses would be completed. Planned costs, taking into account the extra six months of activities and the additional course in Ghana, would increase to £7.2m. The value for money would be enhanced and reputational risks minimized through an NCE.

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/iat-standard/>). Yes
- If these are not yet met, please outline the reasons why.

TDR acknowledge and support the requirements of the International Aid Transparency Initiative Standard (IATI Standard). WHO, as a signatory to IATI, shall publish information and data in accordance with the IATI Standards. In accordance with this commitment, WHO publishes information on the WHO Web Portal (<https://extranet.who.int/programmebudget/>) which facilitates the traceability of contributions from the UK Government to WHO and down to WHO Major Offices. TDR also publishes information on grants and contracts awarded as annex to the annual reports of each Strategic Priority Area (Research for implementation, Research capacity strengthening, and Global engagement); upon approval from TDR governing bodies, these reports are published on TDR's website.

7. Monitoring, evaluation and learning

7.1 Monitoring

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

Robust inbuilt metrics. The SORT IT training is routinely assessed through an in built monitoring which includes: achievement of the 80-80-80-80 performance targets - 80% participant satisfaction score; 80% successful completion of all milestones; 80% publication record within a maximum of 18 months of manuscript submission and; 80% of research assessed for impact on policy and practice through surveys. We also assess the numbers of institutions from HIC and LMICs involved in collaborative partnerships and the capacity of alumni to continue undertaking and publishing operational research beyond the life of the programme.

Equity. Gender equity, LMIC leadership and north-south, south-south collaborations are reported each quarter on a global level. Mapping of geographic coverage is also included.

Quality of generated evidence. To ensure quality control of generated evidence, TDR routinely assesses the quality of reporting of SORT IT publications according to international standards. The last comprehensive assessment of SORT IT showed that 90% of publications (n-392) involving 72 countries, and 24 thematic areas showed excellent reporting quality.

Financial reports. Quarterly financial and activity updates with WHO country offices and partners through written reports and virtual means.

Performance contracts. All delivery partners have performance-based contracts and are paid on achievement of deliverables. Due to COVID-19 delays, all contracts with implementing partners were extended into 2021 and payments were deferred.

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

All SORT IT training modules are routinely evaluated for quality and improvement through participant surveys by those trained. We also receive feedback from mentors, WHO country offices and others who participate in the SORT IT activities and suggestions are

critically reviewed by the SORT IT technical and organisational committees and taken forwards as appropriate. Within 18 months of study completion, we systematically, evaluate completed research studies for impact on policy and/or practice

7.3 Learning

TDR collect regular feedback and critical reflection on SORT IT activities and SORT IT courses from research participants, attending members of AMR committees, SORT IT mentors and WHO country office staff. A dynamic and adaptable model allows integration of "change for the better". For example: we have adapted the SORT IT curriculum and approach to be more in line with AMR SORT IT programme and virtual training after the first set of trainings in Africa and Asia.

□ Key lessons

Engaging early with multisectoral national AMR committees in the planning process to secure their endorsement of the AMR-SORT IT project was key to paving the way forward and helped to mitigate against projects encountering political and administrative issues later on. Bringing the WHO country offices and implementing partners on board early in the six target countries facilitated the work on the ground. This led to rapid implementation of the SORT IT project with 36 research studies under way in five countries (Ghana, Myanmar, Nepal, Sierra Leone and Uganda).

The main initial challenges were around setup within countries in terms of administration, finance and recruitment procedures.

The COVID-19 pandemic was the biggest challenge and as a result, the pace of several activities had to be slowed down. Contingency measures need to be put in place in the event of future outbreaks. The currently used online platform is one of these measures to mitigate the impact of future outbreak with the same scale. Other measures include having a stand-by list of replacement candidates in case the initial researcher is taken ill or has overriding operational priorities and providing additional data support persons for the collection and analysis of field data. As we continue to learn from the COVID-19 pandemic, we will continue to consider other contingency measures too.

7.4 Key milestones/deliverables for the coming year

Award	Key milestones/deliverables for coming year
AMR-SORT IT programme	36 additional research participants and AMR projects initiated (total research projects during the award =72)

Award	Key milestones/deliverables for coming year
	Completion of 36 ongoing research projects, publication of studies and effective knowledge dissemination to stakeholders and decision makers to foster uptake of research findings. This will include building capacity of research participants to develop materials for a lay audience, powerpoint presentations and an elevator pitch
	Accelerate the implementation of 13 research grants that were provided to specific institutions in five countries to support locally driven prospective AMR research activities and strengthen research capacity of local institutions.
	Recruit two SORT IT fellows

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