

RE-P-2020-03-Annex B

London School of Hygiene and Tropical Medicine

HEIF accountability statement

Narrative return template for HEIF funding period
2021-22 to 2024-25

Return date: 21 May 2021

Return as Microsoft Word file to: KEPolicy@re.ukri.org

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Question 1 – Strategic objectives

Summarise the institutional strategic objectives that relate to knowledge exchange and guide your plans for HEIF.

We expect institutions' plans for HEIF to be guided by strategic objectives for knowledge exchange. However, there is no requirement for institutions to submit or maintain a standalone knowledge exchange strategy document.

We appreciate that KE objectives may be found in a specific KE strategy document or they may be contained as part of other strategic documents such as teaching, research or overarching institutional strategies.

Whatever form your knowledge exchange objectives are in, please provide a precis of the main objectives here so that we can see the strategic context that guides your plans for HEIF and forms the basis for your monitoring and delivery of intended benefits.

We welcome the inclusion of hyperlinks to published strategies and plans that may be referenced in the summary.

In answer to this question, you are free to use text or tabular format but please ensure that the question response is contained in no more than two pages of A4.

Knowledge exchange (KE) is embedded at the core of LSHTM's mission "to improve health and health equity in the UK and worldwide; working in partnership to achieve excellence in public and global health research, education and translation of knowledge into policy and practice".

LSHTM achieves this KE mission by deploying our expertise to work across sectors to rapidly respond to evolving global health needs. As a result, our agile KE Strategy is set within the framework of our [Institutional Strategy 2017-2022](#) and is interwoven across the strategic pillars of research, education, staff and student community, and partnership, with our strategic KE objectives defined in the "Innovation & Engagement" pillar, described below. The value and impact of this holistic approach to KE is evident through our ability to draw on our longstanding equitable partnerships to rapidly inform policy and practice across sectors and geographies during public health crises (Ebola and Zika epidemics, COVID-19 pandemic). Concurrent with this agile response we consistently build new partnerships and establish new routes to impact through emerging areas such as digital innovation.

High-quality, Relevant Research:

Our unrivalled experience in conducting research into infectious diseases, including malaria, HIV and TB spans the bench to bedside pipeline, providing KE opportunities across the pathway of prevention, diagnosis and treatment. Our recent focus has been

on the development, testing and evaluation of vaccines, informing vaccine policy through mathematical and economic modelling, and strengthening vaccine trial sites. In the chronic condition space, our expertise includes epidemiological and health systems research. This translates to a KE focus on innovation in health care, including more effective management of chronic conditions, and improved integration of care through the use of large-scale data including electronic health records. Our work on environment, climate change and health draws together our multidisciplinary expertise to understand and develop policy responses to the impact on health of climate and global environmental changes such as those resulting from urbanisation and migration. Across these research priorities, we work with key national and international policy bodies, to support knowledge translation and policy impact and this is facilitated by our interdisciplinary School Centres.

High-quality Education & Talented, Diverse & Inclusive Staff & Student Community

At the heart of our institutional strategy and KE mission is our outstanding, diverse, and committed staff and student community, who are crucial in delivering impact where it is most needed. Our KE activities support lifelong learners with a diverse portfolio of skills development programmes to support continuing professional development. This includes our Short Course provision, Professional Diplomas, Executive Programme for Global Health Leadership, and our highly successful suite of massive online open courses (MOOCs) and open-educational resources.

Strong National and Global Partnerships

Our partnerships across sectors and geographies deliver global health and socioeconomic benefits, especially in the most disadvantaged communities. We prioritise supporting capacity strengthening and the development of research and public health leaders to be able to work at the forefront of science and health policy.

Innovation and Engagement

Our “Innovation and Engagement” pillar defines our overarching KE aim “to maximise the reach and influence of our research, we will embed innovation across the School, encouraging engagement with external audiences, including policymakers, industry partners and the public.” This pillar also details our strategic KE objectives which embed innovation across our activities, enabling and empowering our staff and students:

i. Translation of areas of emerging research excellence.

Building on the KE activities described under “high quality relevant research” we are strengthening our translational research base in emerging areas of innovation including big data, bioinformatics and machine learning and other digital innovation. Translation of research is supported by dedicated training on the pathway to impact, with external experts providing insight across different modalities, as well as initial funding to enable the progression from idea to innovation.

ii. Connecting more with policy and practice communities, and with the public, locally, nationally and internationally

We are strengthening and expanding our engagement with communities of policy and practice in the UK and globally to shape health systems and services. In the UK, knowledge mobilisation is facilitated through strategic research programmes such as those directly working with the UK Department of Health and Social Care. We continue to play a key role in informing policy through membership of UK advisory bodies (e.g., Scientific Advisory Group for Emergencies (SAGE) and Joint Committee on Vaccination and Immunisation). Internationally we are expanding our working with regional and global

stakeholders, such as the Africa Centres for Disease Control and Prevention and the World Health Organisation via membership of advisory committees and joint working through Collaborating Centres. We also work in partnership with international publics, engaging with communities to determine research priorities, refine the design and delivery of research, and deliver onward dissemination and mobilisation of knowledge. These activities are underpinned by our [2018-2022 Public Engagement Strategic Action Plan](#).

iii. Becoming a leading forum for policy debate on health in the UK and Europe

LSHTM has a strong track record of open policy debates, with our global health lecture series and renowned programmes such as the Vaccine Confidence Project. This is expanding within Europe through initiatives such as the new LSHTM-Charité Global Health Lecture Series and new connections such as the European Global Health Research Institutes Network.

iv. Developing strong, ethical partnerships in enterprise and innovative technology.

Through key local and national cross sector partnerships we are able to capitalize on the potential of health data (London Health data Research UK (HDR UK)), to continue to address the increasing threat of antimicrobial resistance (Bloomsbury SET Connecting Capabilities Funding Award) and respond to the critical demand for novel vaccines (Vaccine Manufacturing Innovation Centre). In line with our focus on building digital innovation in the near term we are also exploring opportunities as one of the first academic partners of the International Digital Health & AI Research Collaborative (I-DAIR), a new global platform aiming to enable inclusive, impactful, and responsible research into digital health and artificial intelligence for health.

v. Supporting staff with proactive, high-quality consultancy and technology transfer.

We are enhancing our ability to provide clear advice, guidance, and support on intellectual property (IP), spin-out and consultancy activities through dedicated resources to support these activities. This includes our Innovation Committee, dedicated Head of Technology Transfer, Consultancy and IP, and enhanced legal and contract support which provide enabling infrastructure to progress our innovation and engagement agenda.

Our institutional strategy and priorities outlined above will continue through 2022. A key focus during 2022-23 will be refining LSHTM's future strategic vision. This will be informed by the results of the Knowledge Exchange Framework (KEF) and LSHTM's Knowledge Exchange Concordat action plan.

Question 2 – Use of HEIF

How do you intend to use your 2021-22 to 24-25 HEIF allocations?

As detailed in [RE-CL-2020-04](#) and RE-P-2020-03., in order to enable institutions to effectively respond to the Covid-19 pandemic, we will use the 2019-20 HEIF Annual Monitoring Statement submitted in February 2021 to gather information about the use of HEIF during 2020-21,

In this accountability statement return we would like to know about your plans for HEIF for the remainder of the funding period 2021-22 to 2024-25. Please include indication of the planned timescale of the activity e.g. 2021-22 only; ongoing or 2022-23 onwards.

Please use the response layout grid provided overleaf, to provide the following information:

- a) Describe the key activities supported by your HEIF allocation.
- b) Include specific reference to how you expect HEIF to support these activities – i.e. specific expenditures: funded posts, academic staff buy out, internal competitive projects; and the proportion of the activity that is supported by HEIF (e.g. x1 business development post 50% HEIF funded).
- c) How these activities relate to the government priorities and RE-OfS strategic objectives outlined in paragraphs 9 and 10 of RE-P-2020-03. Where student benefits are achieved, please include an indication of the number of students benefiting.
- d) Which strategic KE objective, as outlined in question 1, does each activity relate to.
- e) Indication of the timescale for each activity (e.g. 2021-22 only, ongoing or to be confirmed)

In answer to this question, please use the response grid provided and ensure that the entire question response is contained in no more than six pages of A4 or A3.

Question 2: Use of HEIF

(Max 6 pages of A4 or A3)

<p>Planned areas of HEIF supported KE activity</p> <p>Please provide an overview of planned KE activities or projects that will be supported by your 2021-22 and onwards HEIF allocations.</p>	<p>HEIF support</p> <p>How HEIF will be used to support the project?</p>	<p>HEIF priorities</p> <p>How does this relate to govt priorities and RE-OfS strategic objectives? (Including note of scale where student benefits are achieved.)</p>	<p>Strategic objectives</p> <p>Which institutional strategic KE objective does this relate to?</p>	<p>Indication of timescales</p>
<p>Empowering the idea to innovation pipeline:</p> <p>Programme to support translation of research into societal and economic impact through;</p> <p>1. Innovation initiation:</p> <p>Support for early-stage (usually early career) innovators to take initial steps in translating their idea into a global health solution. Staff and students are supported to develop their idea and then compete for seed funding in a pitch to panel event. This open competitive call will be in two stages, written application followed by a pitch to an expert panel of internal and external judges. The most promising projects will be supported with funding, mentoring, and dedicated translational project management support.</p>	<p>Pump Priming Funds:</p> <p>Competitive internal awards (up to 6 per year supported dependent on quality), 100% HEIF funded,</p> <p>Translational Facilitation:</p> <p>KE support post (1FTE equivalent) within Strategic Research Office, 100% HEIF funded</p> <p>x1 Head of Technology Transfer, Consultancy, and IP, 100% HEIF funded</p>	<p>Supports the “Skills, Innovation and Net Zero” pillars of Build Back Better, particularly “identifying early discoveries that are ready for development and exploiting these for the prosperity and security of the UK.”</p> <p>&</p> <p>Supports the priorities of (i) Inspiring and enabling talented people and teams, (ii) Growing the research</p>	<p>Translation of areas of emerging research excellence</p> <p>&</p> <p>Supporting staff with proactive, high-quality technology transfer.</p>	<p>2021-22 onwards</p>

<p>2. Innovation acceleration and adoption</p> <p>Support will be provided for innovators who have promising preliminary data on an asset/technology and need support to accelerate this along the Technology Readiness Levels (TRLs). This may include competitive funding support and/or translational facilitation for innovators supported through funding leveraged from other sources.</p> <p>We will continue to maintain and assess our IP portfolio (over 100 individual filings), progressing assets with commercial partners where appropriate.</p> <p>Later stage innovators who have a well-developed asset/technology ready to licence or develop through a spinout or start-up will be able to access support to advance this towards market adoption. This support will enable innovators to determine the best route to progress their innovation to scale and global health impact.</p> <p>Aligned with our commitment to sustainability, we will support our spin outs and start-ups to consider how to achieve net zero emissions as they bring their assets to market.</p> <p>Target: Pump prime up to 6 projects per year across the innovation pipeline, with translational facilitation support for 100 staff and students by 2025</p>	<p>x1 IP support post, 100% HEIF funded (from 2022 onwards)</p> <p>Innovation Committee & Champions:</p> <p>Committee of expert internal and external innovators (minimum of 10% of x8 senior academic and professional staff, increasing as needed depending on expertise required) to support selection, shortlisting and mentoring of applications and funded projects.</p> <p>IP & Legal costs:</p> <p>Current and forthcoming IP filing and maintenance costs and later stage legal costs for new ventures, 100% HEIF supported.</p>	<p>talent pipeline and (iii) Driving up innovation and productivity of the R&D roadmap</p>		
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<p>Enabling engagement across sectors:</p> <p>To deliver our KE objectives we will continue to build relationships across sectors through:</p> <p>1. Consultancy & contract research:</p> <p>Ongoing investment to strengthen the enabling infrastructure across the Technology Transfer Office (TTO), Strategic Research Office (SRO), Legal and Contracts teams will enable LSHTM to continue to maintain the breath and value of our contract research and consultancy activities with commercial and non-commercial organisations spanning industry, SMEs, universities, charities, and health policy makers in the UK and overseas.</p> <p>As the COVID-19 pandemic continues, LSHTM researchers will continue to provide expert advice to support the UK and international COVID-19 response.</p> <p>Target: Maintain levels of contract research and consultancy activities, increasing the diversity of partners.</p> <p>2. Developing Cross Sector Partnerships</p> <p>We will continue to strengthen our partnerships with regional, national, and international stakeholders across research priorities</p>	<p>x1 Head of Technology Transfer, Consultancy, and Intellectual Property, 100% HEIF funded</p> <p>x1 IP support post, 100% HEIF funded (from 2022)</p> <p>x1 Legal support, 20% HEIF funded</p> <p>x1 Contract support, 20% HEIF funded</p> <p>Flexible funding support for core funded academic staff to provide expert advice to global policymakers.</p> <p>KE support post (1FTE equivalent) within Strategic Research Office, 100% HEIF funded</p>	<p>Supports the “Skills, and Global Britain” pillars of Build Back Better</p> <p>&</p> <p>Supports “(i) Inspiring and enabling talented people and teams, (ii) Growing the research talent pipeline and (iii) Driving up innovation and productivity” focus of the R&D roadmap</p> <p>Aligns with “Being at the forefront of global collaboration” & “Levelling up R&D</p>	<p>Translation of areas of emerging research excellence</p> <p>&</p> <p>Becoming a leading forum for policy debate on health in the UK and Europe.</p> <p>&</p> <p>Supporting staff with proactive, high-quality consultancy and technology transfer.</p> <p>Developing strong, ethical partnerships in enterprise and innovative technology</p> <p>&</p>	<p>Ongoing</p> <p>Ongoing</p>
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<p>including infectious diseases (Bloomsbury Colleges and Tropical Disease Consortium), data (HDR UK, OpenSAFELY, I-DAIR) and healthcare innovation (UCLPartners Academic Health Science Network). We will also seek out new national and international strategic industry partnerships to deliver our mission, responding to emerging global health needs.</p> <p>Target: One new significant cross sector partnership per year.</p> <p>3. Public & community engagement:</p> <p>Our engagement programme seeks to inform, excite, consult, and collaborate with global communities.</p> <p>Engagement facilitation is provided by a dedicated PE team who provide regular training, project support and networking opportunities for experience sharing. To enable engagement ideas to be realised, the Public Engagement Small Grants Scheme provides funding for staff and doctoral students to develop and deliver public engagement projects about our research.</p> <p>We also engage with communities through:</p> <ul style="list-style-type: none"> Public lectures (e.g., Global Health Lecture Series), and externally (The Royal Institution, TED and TEDx events). 	<p>Indicative expectation of 10% of x1 senior academic and/or professional staff supported by HEIF per partnership to accelerate development</p> <p>x1 Events Coordinator, 30% HEIF funded</p> <p>x1 Public engagement staff, 100% HEIF funded (from 2023)</p> <p>Public engagement small grants, 100% HEIF funded (from 2023)</p> <p>Public engagement delivery costs, 100% HEIF funded</p>	<p>across the UK” focus of the R&D roadmap &</p> <p>Supports the “Global Britain” pillar of Build Back Better</p> <p>Supports the “(i) Investing in places, and (ii) Inspiring and enabling talented people and teams” pillars of Build Back better</p> <p>Supports RE/OfS objective for students to benefit through access to PE pump priming funds and training (anticipate circa 100)</p>	<p>Connecting more with policy and practice communities, and with the public, locally, nationally and internationally &</p> <p>Translation of areas of emerging research excellence</p> <p>Connecting more with policy and practice communities, and with the public, locally, nationally and internationally</p>	<p>Ongoing</p>
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<ul style="list-style-type: none"> • Participation in Science festivals (e.g., MRC Festival, Cheltenham Science Festival, and New Scientist Live). • Delivery of LSHTM Viral podcast and COVID-19 Q&A's • Interactive tools including our Outbreak tracker and COVID-19 Vaccine Development Tracker. <p>Target: 20,000 attendees per year (at in person and virtual public lectures and other engagement activities).</p>				
<p>Embedding innovation and impact through skills development:</p> <p>Working with our cross sector partners we provide skills development opportunities to ensure that we have a sustainable pipeline of skilled staff to contribute to the UK and global economy. This meets the growing demand for both technical skills including in health data science as well as supporting the talent pipeline for global health leadership:</p> <p>1. <i>Flexible, accessible specialised skills development:</i></p> <p>To empower global life-long learners to gain the skills they need at every stage of their career and adapt to the evolving job market, we develop and deliver training through specialised short courses, distance learning</p>	<p>Technology Enhanced Learning (TEL) support, 25% HEIF funded</p>	<p>Supports the “(i) Infrastructure, Skills and (ii) Global Britain” pillars of Build Back Better</p>	<p>High-quality Education & Connecting more with policy and practice</p>	<p>Ongoing</p>

<p>courses and Massive Online Open Courses (MOOCs).</p> <p>Our doctoral students gain cross sector experience through global placement opportunities. During the future HEIF period we will explore additional opportunities for innovation internships for students and staff to gain the experience of transitioning between academia, industry, and other roles.</p> <p>2. <i>Global health leadership development programmes</i></p> <p>Through our leadership programmes (Executive Programme for Global Health Leadership and Pathway to Academic Leadership Programme) we develop cadres of effective leaders spanning career stages who are equipped to inform and influence policy, as well as capitalise on opportunities for knowledge commercialisation.</p> <p>Target: Professional development of minimum of 500 participants per year across all programmes above.</p>	<p>Marketing and communications support, 20% HEIF funded</p> <p>KE support post (1FTE equivalent) within Strategic Research Office, 100% HEIF funded</p> <p>Administration staff costs and costs of delivering global health leadership training programmes, 100% HEIF funded</p>	<p>Supports RE/OfS objective for students to benefit</p> <p>Supports “Inspiring and enabling talented people and teams” focus of the R&D roadmap</p> <p>&</p> <p>Expected alignment with new R&D People and Culture strategy</p>	<p>communities, and with the public, locally, nationally and internationally</p> <p>Connecting more with policy and practice communities, and with the public, locally, nationally and internationally</p> <p>&</p> <p>Becoming a leading forum for policy debate on health in the UK and Europe</p> <p>&</p> <p>High-quality Education</p>	<p>Ongoing</p>
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Question 3 – Monitoring success

How do you manage your HEIF funding and monitor the success of your activities against the strategic objectives set out in question 1, and in line with delivering Government priorities?

Describe the policies, procedures and approach you have in place in the context of your strategic objectives to:

- i. manage your HEIF spending
- ii. measure progress
- iii. evaluate outcomes and
- iv. identify lessons learned.

In answer to this question, you are free to use text or tabular format but please ensure that the entire question response is contained in no more than four pages of A4.

Management of HEIF spending:

Delivery of our institutional strategy and strategic direction is overseen by our [Senior Leadership Team \(SLT\)](#). They regularly review progress, risk management, and set School-wide budgets. Budgets are operationalised by our Management Board, and relevant teams (Communication & Engagement Team, Legal Services, Strategic Research Office (SRO), Technology Transfer Office (TTO), Research Operations Office). Deployment of KE resources is specifically overseen by the Innovation Committee (the term Innovation is used more broadly than KE). This committee was established in 2018 in recognition of the central role of innovation at LSHTM. The Innovation Committee brings together input from across the School community, including academic representation across strategic research themes, members from the central services detailed above (SRO, TTO, Legal Services, Research Operations Office) and relevant external expertise. It is Chaired by the Chief Operating Officer, providing a direct link to SLT to inform the management of HEIF spending across the innovation and engagement pipeline, and evaluation of outcomes as outlined below.

We expect our KE objectives and activities outlined in Q1-2, to result in a number of KE outcomes:

1. **Empowering the idea to innovation pipeline** will result in an increasing number of early-stage technology disclosures during 2021-22. During 2022-25 we expect these to mature into 5-10 opportunities for potential commercialisation, including in our areas of emerging research excellence.
We will also review our current IP portfolio (over 100 individual filings) and broker new opportunities to progress these assets towards impact through commercialisation where appropriate.
We will increase our portfolio of high growth spin out and start-up companies and expect 4-5 new ventures by 2025 in areas aligned with our research priorities including digital innovation and planetary health.

2. **Enabling engagement across sectors** will maintain the value of our contract research and consultancy with government agencies, healthcare companies, and other partners in the UK and on the global stage. This will also enable us to create and formalise a new industry partnership each year up to 2025. We will continue our successful public engagement activities, prioritising institutional activities that ‘consult’ or ‘collaborate’ with relevant global audiences, responding to community needs to maximise impact.
3. **Embedding innovation and impact through skills development** will address global skills gaps, developing a pipeline of entrepreneurs and professionals able to effectively influence policy and practice. Through attracting and nurturing a diverse pool of global talent we will build human resource including public health leaders able to support UK and global responses to the ongoing COVID-19 pandemic and future public health challenges.

Policies and procedures: We manage our research and commercial interactions in alignment with our mission to improve health and health equity in the UK and worldwide. This is evidenced by our [IP Policy](#) which was developed following examination of best practice from across the sector and clarifies the rights and responsibilities of staff and students. It also ensures that LSHTM can require provisions in commercial agreements that promote the availability of treatments at affordable prices in low income countries, may adopt an IP strategy that promotes access to such products in low income countries and where appropriate, can waive rights to receive revenue from the commercialisation of treatments in low income countries, in order to promote affordable access. We manage our contract research within the preferred terms and conditions outlined in [our policy for research related agreements](#), ensuring that we protect Academic Freedom to Operate and are able to disseminate research outcomes to deliver global impact from our activities.

Measurement of progress and evaluation of outcomes:

LSHTM’s Innovation Committee meets quarterly with ongoing interactions between meetings to review progress against our KE strategic objectives, evaluate outcomes, inform the development of new policies to improve efficiencies and agilely respond to evolving KE needs.

Annually the HE-BCI submission is collated, and the Innovation Committee reviews results, comparing and contrasting with institutions with similar research strengths. The metrics provided through this survey are useful to assess outputs such as the level of collaborative research, income from consultancy, contract research and IP. This has provided useful trends, including highlighting areas of strength such as collaborative research and contract research, and provides a measure of our partnerships across sectors. Comparison also highlights areas for improvement, such as improving the efficiency of consultancy to increase the breadth and volume of contracts, and enhancing engagement with the SME community for both consultancy and contract research. To improve our ability to network with the UK start up community, we now have representation from LSHTM’s Innovation Committee on the BioIndustry Association’s Science and Innovation Advisory Committee (SIAC). During preparation of the KEF submission and following the release of KEF results in 2021 we have expanded our review of progress to include a detailed benchmarking against our “KE peer group”. This has provided a more holistic lens to draw out similarities and differences, seek out best practice across the sector and in particular amongst our KE cluster, including through the self-assessed measure of public and community engagement. Reviewing the HE-BCI

and KEF metrics has directed our focus on empowering the innovation pipeline and strengthening the support framework to deliver our ambitions.

The above quantitative evaluations driven by the HE-BCI results are complemented by the activities of the Public Engagement (PE) Advisory Group, which is made up of academic and support staff, doctoral students and external participants. The PE advisory group shares some membership with the Innovation Committee ensuring alignment of strategic activities. The PE advisory group provides guidance to the PE operational team and monitors progress against the PE action plan. During 2018-19 the UKRI SEE PER programme enabled a large scoping exercise to be carried out to understand LSHTM's PE context. This included an online survey answered by 32% of staff and doctoral students, cross-institution focus groups, and in-depth interviews. With input from an external evaluation consultant, the PE Team developed an impact-focused evaluation framework, which is now being used to quantitatively and qualitatively measure progress against strategic aims.

Our ability to connect with and inform global communities of policy, practice and publics is additionally monitored through media outputs (133,763 news stories about LSHTM in 2020), the destinations of our graduates (32,000 alumni are working to improve health around the world) and captured within impact case studies for the Reference Excellence Framework. The ability of the LSHTM community to deliver high impact KE activities on the global stage has been exemplified during the COVID-19 pandemic, where our experts have been providing independent and authoritative advice to policymakers around the world. This includes informing the UK response through membership of SAGE, the global response through the new World Health Organization SAGE Working Group on COVID-19 vaccines, and our Director's role as Special Advisor to the President of the European Commission on research and innovation for COVID-19.

We are also guided in our management of HEIF by feedback from our community. During 2017-19 we explored the impact of using an external TTO service and following consultation determined that dedicated internal infrastructure (supported by HEIF funding) and the close engagement that this allows with both academics and other central services was required in order to progress translational research outputs beyond the academic arena. Reflecting on feedback from internal and external stakeholders, our IP policy was updated extensively during 2019-2021 to provide additional clarity on how the policy applied to students, awards to originators, and the commercialisation route through Chariot Innovations Limited, which was established a wholly-owned subsidiary company of the School in August 2013. In addition, we review collective responses from the Careers in Research Online Survey (CROS) and Principal Investigators & Research Leaders Survey (PIRLS) on how well equipped our community feels in participating in KE activities and delivering research impact. This informed the development and delivery of several workshops on research impact. Working collaboratively across the SRO, TTO and Talent and Educational Development teams we will continue to review the development needs of the LSHTM community in this area, drawing in the future on the responses from the Culture, Employment and Development in Academic Research Survey (CEDARS) to evolve our skills development provision accordingly.

Identifying lessons learned:

Our ongoing review of progress using quantitative and qualitative measures continues to inform how we deploy our KE resources. Key lessons learned include:

Dedicated resourcing delivers impact: LSHTM's Innovation Committee (supported through HEIF funding) was initiated following consultation that highlighted the need for a

dedicated group to progress KE activities. The success of this committee is evidenced by the additional resources leveraged since its inception to pump prime early translational projects closer to impact through both commercial and non-commercial means. This includes early-stage funding from Wellcome (Institutional Translational Partnership Award), and partnership in the MRC Tropical Infectious Disease Consortium Confidence in Concept Award and the Connecting Capabilities Fund – The Bloomsbury SET. Together with HEIF funded support, this has provided a pipeline of funding, training, networking and facilitation to increase the number and breadth of projects progressing along the translational research pipeline closer to societal and economic impact. LSHTM's commitment to the Concordat to Support the Career Development of Researchers and in particular supporting researchers to engage in a minimum of 10 days' professional development per year ensures that our budding entrepreneurs feel empowered to dedicate time to gain skills and develop networks to progress their idea into an innovation. As we review our progress against our strategic objectives and as these evolve with the development of our new strategy, we will continue to deploy additional resource where it is required most to deliver impact.

Early career innovators need tailored support: As we have strengthened our internal infrastructure, we have reflected on the research areas and teams currently engaging in technology transfer activities. Reviewing IP disclosures and patent filings highlighted that senior academics working on vaccines, diagnostics and drug discovery often already have a clear line of sight to a potential market and have access to cross sector collaborators through existing networks. We are therefore providing tailored support to early and mid-career researchers through new training initiatives and one-to-one engagement with KE and TTO leads to develop personalised KE action plans and support a sustainable pipeline of emerging innovators. This has resulted in an increase in the level of disclosures from early and mid-career researchers and across a broader range of research themes, including areas of emerging research excellence such as digital innovation. At the doctoral and postdoctoral level we are working with regional partners to develop "Innovation Internship" opportunities to provide experience in a venture environment focused on addressing complex societal challenges and support transitions between sectors. Aligned with our focus on embedding inclusive practice across all operations, we are also seeking to widen participation in KE activities, exploring whether there is a need to provide additional support to historically underrepresented groups.

Recognition motivates participation: To recognise the value of KE in our community, knowledge translation and enterprise (including public engagement relating to research and education) has been formally embedded within yearly staff reviews and in Academic Promotions as an example 'external contribution' since 2015. To further recognise the value of KE and cross sector engagement, a new PE award was launched in 2018 and during 2019 we celebrated "120 years of health innovation" and piloted an Innovation Award. Raising the profile of these activities has increased motivation to participate in KE with an increasing number of staff and students attending training sessions, requesting support and seeking out innovation opportunities.

As we progress our action plan aligned with the Knowledge Exchange Concordat and develop our new institutional strategy, we will reflect on further lessons learned and enablers to deliver our KE objectives. LSHTM's HEIF allocation represents a critical resource to enable KE and innovation across disciplines, sectors and career stages. This funding is vital to allow the School to contribute to the sustainable excellence of KE in the UK, increasing its attractiveness as a leading destination for research and innovation.