UKRI and BEIS stabilisation interventions to mitigate against the negative impacts of COVID-19 on the research sector

Process and early-impact evaluation

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Executive Summary

The Department for Business, Energy, and Industrial Strategy (BEIS)[1] and UK Research and Innovation (UKRI) developed a series of support packages for research organisations[2] to sustain publicly funded research, staff, and infrastructures during the start of the COVID-19 pandemic in 2020. The support was not provided to tackle long-standing issues such as research culture or underfunded areas, but to alleviate pressures on research as a direct result of COVID-19. These support packages were provided against a backdrop of wider COVID-19 related investments and strategic decisions across government departments. This study is focused on evaluating these support packages – referred to as research stabilisation interventions.

RAND Europe and Vitae were commissioned by UKRI and BEIS to evaluate whether the research stabilisation interventions fulfilled their objectives and to surface learnings for how government responses could be shaped and implemented in a timely manner, in case of a similar future crisis. This report details the process and early impact findings of the evaluation.

Limitations of the study

Direct attribution of said interventions to the impact observed in the research sector remains a challenge due to lack of linkages between intervention award and monitoring systems.

Given the varied nature and scale of the interventions, it is possible that in our analysis the effects of smaller interventions are masked by the larger interventions.

The datasets associated with the study only extend to the financial year 2020/2021 and hence this has been treated as the proxy year to display the short-term effects of the pandemic and the stabilisation interventions.

Key evaluation findings

The evaluation found that the intervention packages provided by the UK government were timely, rapid when compared to business as usual, and much needed to provide breathing room for organisations grappling with wide ranging impacts of the pandemic. While intervention design and delivery provided reflection and learning for the future on processes, its positive impact was nonetheless felt in many organisations' ability to continue crucial research, protect the workforce from redundancies and protect research deficits to some degree.

Design of the interventions was substantively informed by engagement with representative stakeholders in the government and research sector. To support intervention design, UKRI and BEIS relied on capturing a wide range of data, as well as using

[1] BEIS was replaced by the Department for Science, Innovation and Technology in February 2023. We have used BEIS when referring to past events and used DSIT when referring to the future.
[2] Organisations include: universities, research organisations, public sector research establishments and institutes.

institutional experience. At times this proved challenging due to the contradiction in datasets and the variety of datasets that had to be assimilated. The range of stakeholders that had to be engaged also slowed down the pace of design and implementation to some degree.

Some of the interventions provide useful examples of learning on how to develop novel and cross-government interventions in a crisis situation. For example, in the case of SURE, whilst UKRI and BEIS were able to design and implement a novel intervention at pace demonstrating cross-government coordination, learning from this process highlighted benefits of more targeted engagement with potential beneficiaries to ensure it is tailored to their needs. For example, this evaluation found the SURE fund was significantly underutilised due to unfavourable loan terms.

Time pressures negatively impacted many facets of the work such as intervention design, the communication of interventions to the research sector, and stakeholder consultation activities. During intervention design and delivery, time pressures and constraints were the most commonly cited challenge across government and beneficiary staff interviewed and surveyed. Interventions had to go through multiple approval steps spanning UKRI, BEIS, HM Treasury and in some cases No.10. Time pressures were further compounded by fixed financial planning cycles and targets. **Nonetheless many of these processes were heavily expedited to be able to move at pace, allowing rapid approval and sign-off when compared to business as usual**.

Working at pace to implement interventions was supported through various mechanisms such as development of new coordination and communication channels, autonomy to research organisations for allocation of funds and light touch application processes. Evidence from institutional leadership suggested that **the timeliness of interventions partially mitigated the effects of the pandemic on research activity and capacity** through positive impacts on the number of research projects able to be continued, and the retainment of research staff and students. However, some **research organisations felt burdened by the responsibility of acting locally for fund allocations**.

UKRI and BEIS recognised the importance of timely communication and used several modes of communication to support engagement with the sector with a focus on understanding needs of the research organisations. Given the challenging circumstances, **it was widely acknowledged that communication had worked well**.

Agility of specific interventions to respond to the evolving pandemic was dependent on the flexibility of its terms and conditions. Although the flexibility granted to institutions in using funds was appreciated, there were some cases where further flexibility and agility was desired and terms and conditions were found to be restrictive.

Monitoring requirements varied across the interventions, but on the whole were considered very light touch. This was highly valued by the recipients of interventions. However, the light-touch approach has resulted in some missed opportunities including limited data on the beneficial impacts that can be directly attributed to the interventions.

The stabilisation interventions were positively received by the sector providing much needed support and reassurance at a challenging time. Whilst more funding and further clarity in terms and conditions would have been welcomed by the research sector, the interventions allowed the sector some breathing room to regroup. However, representative sector bodies felt that some parts of the ecosystem were less supported by the interventions. For instance, specialist institutes and less research-intensive providers felt their needs weren't addressed comprehensively. Sector bodies also felt that a broader interpretation of the research sector is needed to address needs of non-UKRI grant funded students and technical staff.

Recommendations to support design and implementation of future interventions

- Targeted input from a range of representative stakeholders should be actively sought via representative forums or advisory groups to support proportionate intervention design so that interventions are attractively tailored to beneficiary needs.
- Where possible, internal business as usual activities should be reassessed and deprioritised to free up existing staff time and consideration should be given to using agencies to draw on temporary staff.
- An increased limit on delegated spending should be put in place for UKRI and DSIT under extenuating circumstances to limit multiple approval steps which could alleviate time pressures.
- Smaller interventions awarded in a staggered manner should be prioritised to allow for iterative improvements, alleviate time pressures due to fewer approval steps required, and minimise time spent on design of interventions.
- Under extenuating circumstances, it may be beneficial to relax rules on financial underspend and allow beneficiary institutions to shift funds into the next financial year.
- The volume and purpose of the new forums established during the pandemic response should be reviewed to assess continued value beyond the pandemic response.
- UKRI should encourage and support research organisations to develop a protocol to fall back on to prioritise and allocate research funds locally based on lessons learnt.
- Communication should be limited through a few select channels to manage the volume of queries and avoid burden with more focus on clarity of messaging.
- Internal data linking across UKRI datasets (i.e. financial, Researchfish and recipient organisation monitoring returns) should be considered when awarding new grants or existing uplifts to link funding to monitoring and reporting to aid assessment of impact and attribution.
- More work should be done at design stage of any intervention to stress test adaptability and restrictiveness over its duratio**n,** to support flexibility and agility in an evolving external context.
- DSIT and wider government should engage with universities and stakeholders to consider feasible options for supporting non-UKRI grant funded research in a future

crisis. The wider research sector should be involved to develop a more comprehensive support package for the research sector.

Early impact

Lockdown restrictions had a significant impact on researchers; however, the interventions played a role in supporting the research community. Lockdown restrictions limited access to research facilities, which particularly affected early career and Science, Technology, Engineering and Math (STEM) researchers. Restrictions also affected researcher wellbeing and impacted productivity. However, the interventions were seen to have played a role in supporting research capacity to some extent through targeted support for certain groups such as early career researchers, and by providing a strong signal of the importance of research.

Academic staffing was broadly maintained during the pandemic, in part due to the intervention support amongst other support levers in place within institutions. Whilst there may have been variation in research staff numbers between institutions, overall, the levels of research staff across the sector were maintained during the pandemic at pre-pandemic levels.

The pandemic had a negative impact on research activity, although the interventions provided some mitigation against this. Despite the pandemic having a negative impact on research activity, the interventions were perceived to offer some mitigation against this. Interventions supported research activity to continue which also included directly supporting implementation of COVID-19 measures such as the purchase of equipment and PPE to allow some research to continue in a COVID-19 secure manner.

The pandemic significantly reduced research collaboration and engagement activities, but the interventions had some positive effects on innovation-focused activities. Interactions between business and universities and innovation activities[3] experienced a decline. However, 61% of university respondents in receipt of the Costed Grant Extensions stated the extensions had a positive effect on their ability to deliver support and initiate innovation activity.[4] The PSRE intervention project Measurement for Recovery, led by the National Physical Laboratory, reported that 78% of businesses who participated in the project observed new collaborative R&D projects.

The interventions supported research activity during the pandemic by enabling institutions to upgrade their infrastructure and providing additional support. Lockdown restrictions resulted in limited access to almost all research infrastructure, impeding research

[3] Innovation activities include both knowledge exchange and commercially focussed activities such as IP generation

[4] Tomas Coates Ulrichsen, “Innovating during Crisis: The Effects of the COVID-19 Pandemic on How Universities Contribute to Innovation” (National Centre for Universities and Business & University Commercialisation and Innovation Policy Evidence Unit, January 2021).

capacity and activity. The World Class Laboratories fund enabled institutions to upgrade their research infrastructure, supporting research activity to continue during the pandemic.

The pandemic's impact on research income varied by institution, however data showed no significant difference in the overall trends in research income across 2014/15 to 2021/22[5]. **The interventions provided a cushioning effect for many, estimated at 3.2% of research income for the whole sector**. This was particularly crucial for small and niche institutes like the Alan Turing Institute. Although data is limited, Transparent Approach to Costing (TRAC) analysis suggests that 31% of universities experienced a higher research deficit compared to the average across previous years (2017-2020). The interventions were able to cushion some of this deficit where the average intervention equated to 9% of the deficit.

EDI was not specifically focussed on in the initial phases of interventions, but this was later addressed. For example, in the case of the Doctoral Extensions, equality impact assessments were conducted which resulted in later phases of the intervention targeting those who were most vulnerable and adversely affected by the pandemic such as disabled students, those from ethnic minority backgrounds and those with caring responsibilities.

ROs had a lot of leeway to allocate funds on a needs basis following equality impact assessments however evidence suggests that the interventions were only partially able to mitigate the negative EDI impacts experienced by the sector during COVID-19, such as additional burden on women or those with caring responsibilities.

UKRI took pragmatic steps to reduce bureaucracy and support EDI by signposting existing measures that recipients could benefit from, such as disability allowance for students. Reporting requirements also included EDI updates for continuous monitoring of the impact of the pandemic and fairness of funding allocation.

Recommendations relevant to assessing impact of future interventions

- Future efforts should be put in place to mitigate the effects of a pandemic/crisis on non-academic staff and those not supported by UKRI by engaging with the wider research sector.
- Anticipated impact and benefits should be determined upfront with realistic expectations established and communicated to research organisations. These should also be reflected in monitoring requirements.
- Protocols developed for ROs to prioritise and administer funding must contain explicit reference to EDI to ensure good practice.
- In designing the interventions, DSIT and UKRI should ensure that EDI is considered and that interventions can be flexible enough to meet the diversity of needs.
- It may be valuable to design interventions specifically targeted at vulnerable or disadvantaged groups to ensure their needs are met.

[5] HESA Finance Data, www.hesa.ac.uk/data-and-analysis/finances

Broader considerations for future policymaking

In addition to the specific recommendations for interventions, there are broader considerations which are pertinent to taking a more strategic view on how the sector should respond and conduct research in a future state of emergency. There should be an in-depth assessment of the balance that needs to be struck between continuation of existing research versus responding to a crisis itself. A wider conversation between UKRI and universities on what instruments could support universities to improve their internal data capture for an adequate response would also be beneficial. Finally, there should be a targeted and pragmatic discussion across the sector on the balance between targeted support and un-hypothecated block funding at times of crisis and how this balance should pivot from the business-as-usual model.

1. Introduction

1.1 Unfolding of the pandemic and sector demands

On March 23rd 2020, in response to the emerging COVID-19 pandemic, the UK Government announced the first lockdown in the UK and ordered people to 'stay at home'.[6] These orders significantly impacted the activities of the research sector in the UK. In April 2020, Universities UK (UUK) released a proposal to government requesting a balanced package of measures to maximise their contributions to the economy, communities, and post-virus recovery.[7] This proposal highlighted the significant contribution of UK universities including (i) developing highly skilled people, (ii) conducting cutting-edge high-impact research, and (iii) fuelling economic growth through job creation. UUK highlighted that there was a significant risk that the higher education sector's capacity to deliver potential benefits would be greatly reduced due to the impact of COVID-19. Some impacts were widespread whereas others were specific to different research communities and their activities.[8] The Association of Medical Research Charities (AMRC) published an infographic showing that the research charity sector experienced a 38% loss to fundraising income during the first phase of the pandemic, March to May 2020. AMRC charities also reported cutting or cancelling 18% of their spending on research in universities, and 70% of clinical trials and studies funded by these charities were stopped, paused or delayed.[9] Similarly, a report published by the NCUB found that the levels of innovation-focused activities varied across universities during the early phase of the pandemic, between March and July 2020. Some saw increased activity in sectors, such as the pharmaceutical manufacturing and medical biotechnology sector, while there was a general decline of 6%.[10]

The impact of the pandemic varied not only at the discipline or institution level but also at the individual researcher level. For example, within the social sciences, researchers faced specific barriers to conducting their research during the pandemic particularly when undertaking fieldwork or location-specific activities.[11] The pandemic also significantly impacted staff in UK higher education, with impacts on staff wellbeing, professional development and future plans.[12]

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[6] "Timeline-Coronavirus-Lockdown-December-2021.Pdf," accessed April 4, 2023, https://www.instituteforgovernment.org.uk/sites/default/files/2022-12/timeline-coronavirus-lockdown-december-2021.pdf.

[7] "Achieving Stability in the Higher Education Sector Following COVID-19" (UK Universities, n.d.), https://www.universitiesuk.ac.uk/sites/default/files/field/downloads/2021-08/uuk_achieving-stability-higher-education-april-2020.pdf.

[8] R Gardner et al., "Academy of Social Sciences. Social Sciences in a Time of Change, 2020-2022," July 2022, https://acss.org.uk/publications/social-sciences-in-a-time-of-change-2020-2022/.

[9] "COVID-19: The Risk to AMRC Charities," Association of Medical Research Charities, June 11, 2020, https://www.amrc.org.uk/covid-19-the-risk-to-amrc-charities.

[10] Tomas Coates Ulrichsen and Leonard Kelleher, "Through Crisis to Recovery," Cambridge: Policy Evidence Unit for University Commercialisation and Innovation (UCI), University of Cambridge and the National Centre for Universities and Business (NCUB), July 2022, https://www.ifm.eng.cam.ac.uk/uploads/UCI/knowledgehub/documents/2022_UCI_NCUB_Innov_Unis_and_Covid_Report.pdf.

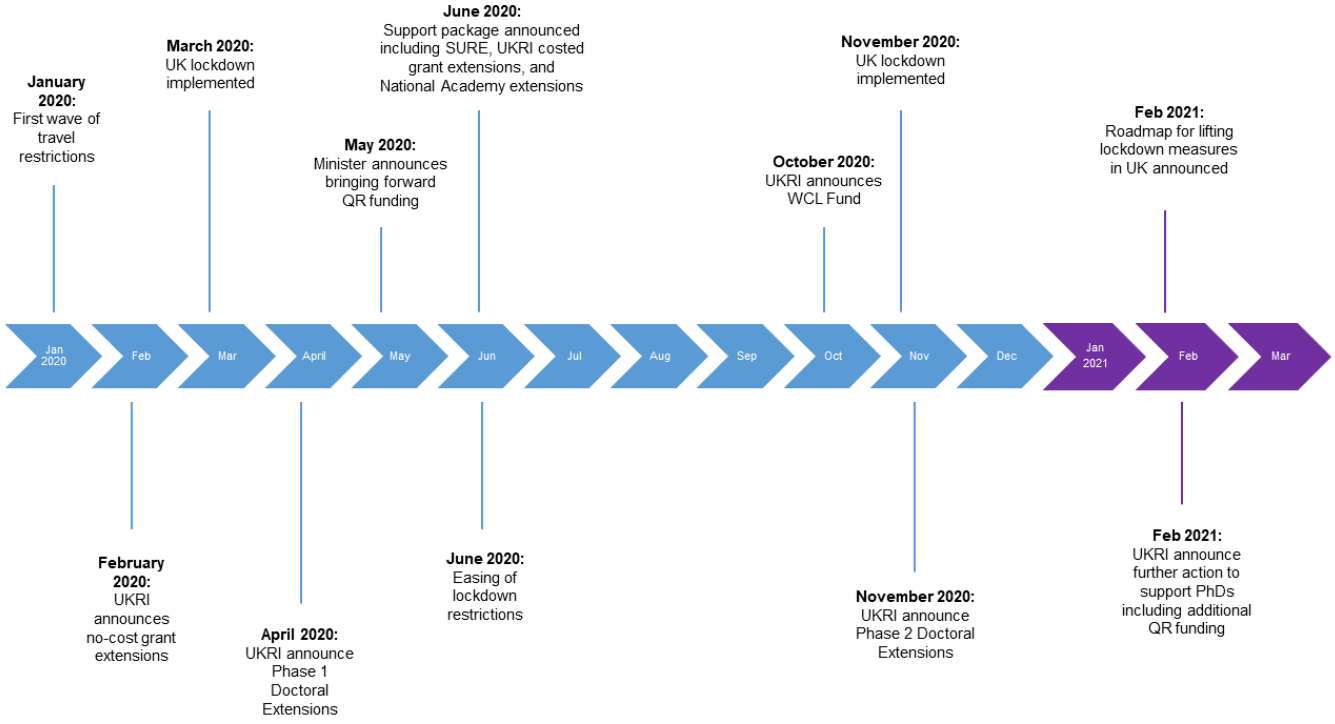
[11] Gardner et al., "Academy of Social Sciences. Social Sciences in a Time of Change, 2020-2022."

[12] Rasha Kassem, "How Did COVID-19 Impact Staff in UK Higher Education?," HEPI, October 4, 2022, https://www.hepi.ac.uk/2022/10/04/how-did-covid-19-impact-staff-in-uk-higher-education/.

The impacts of the pandemic on researchers were explored by three Vitae surveys conducted over May/June 2020 (Wave 1), Feb/Mar 2021 (Wave 2) and Feb/Mar 2023 (Wave 3). These surveys captured the significant impact of the pandemic on research staff and students including the negative impacts on individuals and their research activities as a result of the COVID-19 restrictions, additional caring responsibilities, and challenges around planning research.

Comparison across the three waves of the survey has highlighted the ongoing negative impacts of the COVID-19 pandemic on research with researchers reporting reductions in time for research as well as continuing negative impacts on the timing, quantity and quality of research outputs and outcomes. Despite this, comparison across responses did show fewer negative impacts over time when comparing Wave 3 responses against Wave 2, with fewer researchers stating that the pandemic had forced them to change their research or had negatively impacted research planning. Participants in Wave 3 were also positive about funder support with 76% of those who were in receipt of intervention support agreeing that the COVID-19 interventions supported continuation of their research to some extent.[13] The impacts of the pandemic continue however, with a third of researchers worried about the long-term impacts on their job prospects.

Figure 1. Timelines of the COVID-19 pandemic and interventions to support research



Given the significant impact of the pandemic, there was a need for funders to provide additional support to the research workforce. In terms of the support packages and funding offered by UKRI this could be broadly characterised into (i) funding for research directly tackling COVID-19, and (ii) support and funding to organisations in order to sustain publicly-

[13] Vitae, "Vitae Wave 1 Survey," n.d.; Vitae, "Vitae Wave 2 Survey," n.d.; Vitae, "Vitae Wave 3 Survey," n.d.

funded research, staff and infrastructures.[14] Whilst the former was focused on funding research on COVID-19 and its implications, the latter was focused on supporting the research ecosystem and ensuring research efforts and talent was not lost as a result of the pandemic. The support was not provided to tackle long-standing issues, such as proportion of block funding versus grants, research culture and performance measurement, etc., within the research ecosystem but instead provided targeted support where needed.

1.2 BEIS and UKRI's response to COVID-19

To support the UK Government's response to the COVID-19 pandemic, BEIS and UKRI launched a series of policy interventions to address the causes and consequences of the pandemic. Whilst these interventions were varied in their nature and aims, several focused on stabilising the research and innovation system, considering the disruption caused by the COVID-19 pandemic. These interventions targeted universities and wider research organisations, inclusive of researchers and businesses involved in research and innovation.

The interventions which have been launched to date and are in scope of this evaluation, are listed in Table 1. It should be noted that interventions specifically targeting businesses involved in research and innovation, launched through Innovate UK, the COVID-19 Job Retention Scheme (CJRS), Coronavirus Business Interruption Loan Schemes, and COVID-19 Corporate Financing Facility, are being evaluated separately and are therefore not in scope of this evaluation. There are multiple government funded evaluations that are assessing the impact of COVID-19 on the research and innovation sector; however, this evaluation is focussed on the research stabilisation interventions only and the way in which these were designed, implemented, received, and utilised. Wider government evaluations will serve as an important contextual frame of reference for this evaluation.

Table 1. Interventions in scope of this evaluation

Intervention	**Aims**
Sustaining University Research Expertise (SURE)	The SURE fund aimed to offset losses to key research income streams as a direct result of the pandemic and preserve **capacity** and **capability** of research departments.
UKRI COVID-19 Grant Extension Allocation (CoA)	This intervention aimed to provide research organisations with the resources needed to **sustain** UKRI-funded **research** grants and fellowships affected by the pandemic. Funding was awarded to institutions who then allocated individual grants.
National Academy Extensions (NAE)	This intervention aimed to provide four National Academies with the resources to **sustain research grants** and fellowships impacted by the pandemic, through costed extensions.

[14] UKRI, "Funders Recognise the Impact of COVID-19 on Future Applications," March 2022, https://www.ukri.org/news/funders-recognise-the-impact-of-covid-19-on-future-applications/.

(part of grant extension allocation)	
UKRI Doctoral Extensions (DE)	The extensions aimed to address and mitigate against the immediate risk to investment in doctoral training were doctoral candidates not able to complete their research projects.
UKRI COVID-19 Institute Support Fund FY 20/21 (CISF)	This fund was created to **support the delivery of science**, research and operations in major research institutes, support their short-term stability and **prevent loss of capability**.
Repurposing support for small, specialist institutions (SSI)	Research England (RE) repurposed funding from the Specialist Institution Funding to support specialist institutions and **mitigate losses** caused by reductions in charity research funding.
Additional funding through the World Class Laboratories Fund (WCL)	Funding was provided through RE and devolved funding bodies in Scotland, Wales and Northern Ireland, to enable providers to make existing research infrastructure COVID-19 safe with modifications.
Changes to existing UKRI programmes (QR reprofile and no cost extensions)	UKRI introduced several measures designed to **increase the flexibility of existing programmes** and reduce administrative burden on researchers and research organisations such as QR[15] reprofile and no cost extensions.
Medical Research Charity Early Career Researcher Fund	This fund was aimed at mitigating the impacts of COVID-19 on the research funded by medical research charities. The fund targeted **early-career researchers** who were funded by the members of the Association of Medical Research Charities (AMRC) and was delivered by UKRI.
BEIS COVID-19 PSRE interventions	BEIS released additional funding to support **the continuation of research activities** across three of its Public Sector Research Establishments (PSREs). This included the Met Office, the National Physical Laboratory (NPL) and the UK Atomic Energy Authority (UKAEA).

[15] QR refers to the Quality-related research funding allocated by Research England to universities.

1.3 Evaluation aims and structure

RAND Europe and Vitae have been commissioned by UKRI and BEIS to undertake an evaluation of the COVID-19 research stabilisation interventions. The evaluation is structured over two phases running between October 2021 – Dec 2023.

Phase 1: Baseline assessment of process and impact

In Phase 1 a baseline assessment for the process and early-impact evaluations was developed. Within this stage, the report included some preliminary analysis of secondary data provided by BEIS and UKRI and a small amount of primary data collected through five scoping interviews with stakeholders. The findings from this phase gave a partial and emerging view of the processes and potential impacts of the interventions and this was used to inform the work conducted in Phase 2.

Phase 2: Process and early impact evaluation

- **Process evaluation** – this assessed how effectively BEIS and UKRI designed and delivered the various policies to stabilise the research sector and how they were received by the research community; the scope, nature and distribution of support provided; and the way in which the support provided by the stabilisation interventions was used by universities and research organisations.
- **Early impact evaluation** – this captured emerging early evidence regarding the impact of the stabilisation interventions and explored the extent to which the interventions have achieved their intended aims of supporting and stabilising the research system.
- **Impact feasibility assessment** – this provided recommendations for configuring an impact evaluation with potential areas of focus and data sources to consider.

This report details the findings from Phase 2 of the process evaluation and the early impact evaluation based on extensive secondary data analysis and primary data collection (details of which are provided below). The purpose of the evaluation is to assess whether the interventions fulfilled their objectives and to pave the way for considering how government responses could be shaped and implemented in a timely manner, in case of a similar future crisis.

1.4 Evaluation approach

This is a mixed methods theory-based evaluation, underpinned by the main evaluation themes listed in Table 2. The evaluation themes were derived from the high-level theory of change (ToC) as presented in Figure 2. The evaluation was conducted using a mixed-methods approach, including primary data collection through interviews with programme management and sector bodies, surveys of institutions and researchers, and focus groups with institutions in receipt of support. The evaluation also included a review of documentation and quantitative data analysis of internal datasets provided by DSIT and UKRI. Towards the end of this phase of the evaluation, a 3-hour validation workshop was conducted with stakeholders from DSIT

and UKRI to discuss emerging findings and assess the strength of evidence. More details in methodology can be found in Annex D.

Theory of change

A ToC captures how an intervention is expected to work, including the steps from the inputs to the intended outcomes and impacts, as well as capturing the underlying assumptions. Here, we set out the current version of the ToC for COVID-19 stabilisation measures as shown in Figure 2. The diagram is intended to be read from left to right, but this is not intended to imply a simple linear progression of outcomes and impacts given the complexity of the higher education and UK R&D landscape and the interdependence between outcomes and impacts. For instance, 'research activity' as identified in the ToC is dependent upon 'research capacity' being maintained. In addition, the main assumptions are captured at the bottom of the ToC.

We have used this ToC to shape our evaluation themes and questions as set out in Table 2. It should be noted that this ToC was developed retrospectively after the interventions had already been developed and launched and their aims determined. The ToC is driven by the objectives and aims identified by UKRI and BEIS for the interventions in scope. It was developed with a collaborative workshop with UKRI and BEIS stakeholders to arrive at key outputs and outcomes as anticipated to be realised through the interventions.

Evaluation focus

The focus of the evaluation is set out with the key evaluation questions in Table 2, arrived at through discussions with UKRI and BEIS and based on what was most important for them to understand, transparency, accountability and to inform future responses of such nature, should they become necessary.

The ToC does not explicitly state the links between activities and outputs, however the process evaluation has been structured thematically to assess 'how' and 'how effectively' processes supported the aims and objectives of the interventions. The process evaluation was assessed through the lens of 'relevance' as per the OECD evaluation criteria,[16] analysing the extent to which intervention design and objectives respond to the needs of beneficiaries and the wider ecosystem. The evaluation follows the principles outlined in the UK Government's Magenta book.

The links between outputs and outcomes are more explicit and follow a logical sequence of events. The early impact evaluation is structured across the main themes illustrated in the ToC and evidence from data collection able to shed light on the contribution of the interventions towards achieving the desired outcomes. The early impact evaluation is an exploration of emerging themes through the lens of 'effectiveness' based on the OECD criteria,[17] assessing whether the interventions delivered on their intentions which are highlighted through the main evaluation themes and questions in Table 2.

[16] "OECD Evaluation Criteria," n.d., https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm.
[17] "OECD Evaluation Criteria."

Evaluation themes and questions

The evaluation themes and questions for the process and early impact evaluation are highlighted in Table 2 below, and the remainder of this report is structured accordingly.

Figure 2. Theory of Change

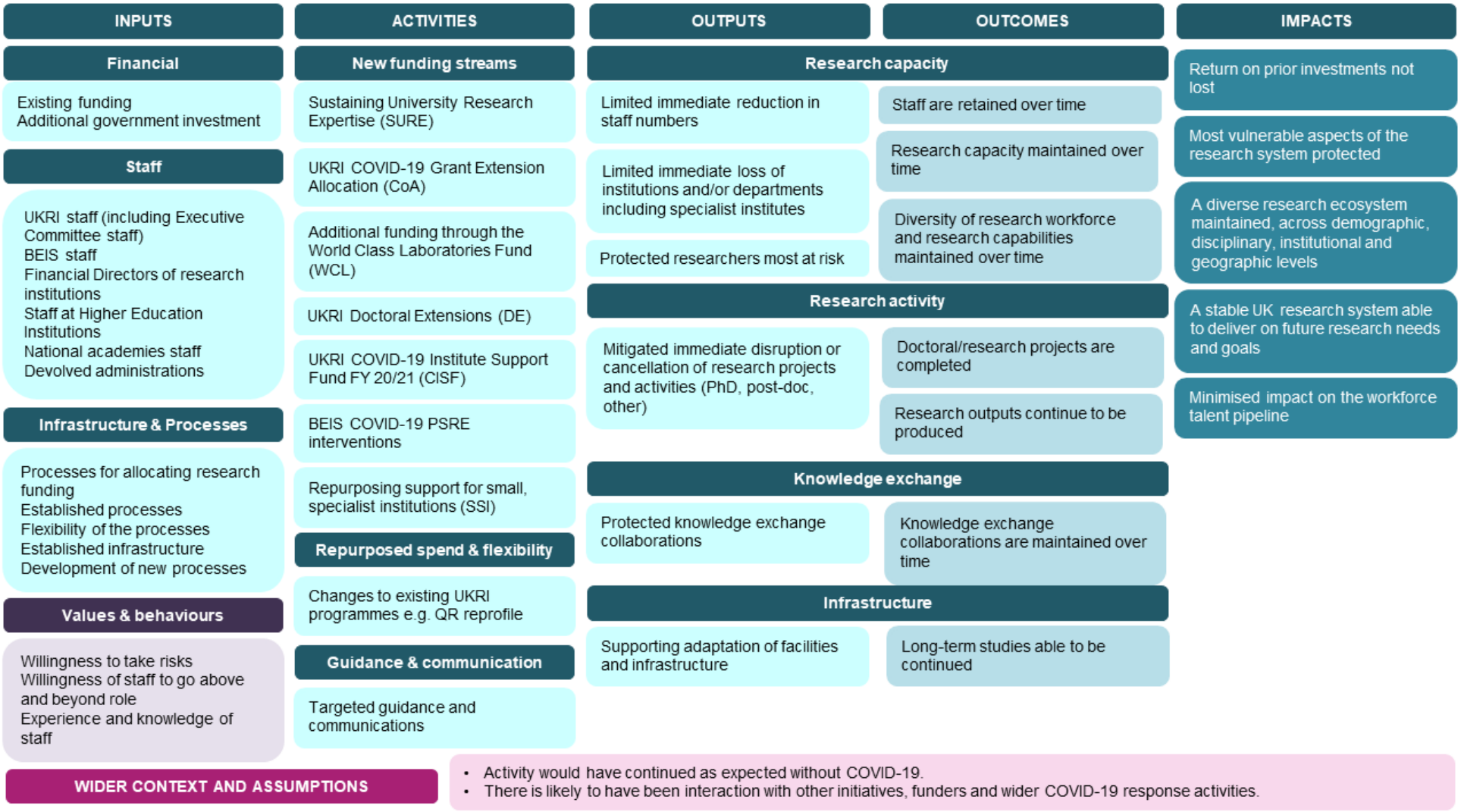


Table 2. Evaluation themes and questions

Evaluation themes	Key evaluation questions	Analysis
Design and setup of interventions	• How were the interventions designed, and what was the evidence utilised? • Which stakeholders were involved and how? • What were the mechanisms through which decisions were made regarding design and setup of interventions?	Section 2
Implementation of the interventions	• How were government and sector stakeholders involved in intervention implementation? • How were recipients of the intervention engaged in the process? • What was the uptake of the interventions and how was the funding utilised? • How effective were processes undertaken to monitor policies? • How timely were the interventions and what was the consequence on organisational decision-making? • How adaptable were the interventions in an evolving context? • Were there any unmet needs?	Section 3
Early Impact	• What was the impact on research capacity? • What was the impact on research activity? • What was the impact on knowledge exchange? • What was the impact on research infrastructure? • What were the financial impacts?	Section 4
EDI	• How was EDI factored into the intervention design and what was its effect?	Section 5
Lessons learned and recommendations	• What lessons can be learned from observed processes and impacts? • What are the recommendations for future interventions and ways of working?	Section 6

1.5 Data gaps and limitations

There are several limitations to this study as noted below:

- There is limited existing quantitative data to support this evaluation, and it was challenging to link outputs and outcomes that can be measured through sources such as Higher education Student Data (HESA) and Transparent Approach to Costing (TRAC) directly to the interventions. To mitigate against this limitation, this study has collected quantitative and qualitative primary data from different stakeholders and triangulated data sources where possible to provide more robust findings. However, direct attribution of quantified impacts to the interventions remains a challenge.
- Although the evaluation has drawn on the processes and impact from across the multiple interventions in scope, they have primarily been considered as a collective, based on the scope agreed with UKRI and BEIS. This is a limitation given the varied nature and scale of the interventions as it is possible that the effect of smaller interventions will be masked by larger interventions.
- The RAND Europe survey of institutional leadership was intended to be completed by the most informed contact person at each institution or person who would be able to best recollect experiences relating to the interventions. However, in some cases the relevant person was not available to respond or no longer working at the institution. As such, some respondents to the survey had limited knowledge of the full information being asked for.[18]
- The backdrop to the interventions was incredibly complex, with both the COVID-19 pandemic and the UK's exit from the European Union impacting the research and higher education sector significantly and in novel ways. Within this context, it is challenging to understand what 'business as usual' looks like, and findings from this evaluation should be framed within this wider sector context.
- The latest datasets that are available have been used where possible for this evaluation. It should however be noted that this does not cover the entire duration of the pandemic. For example, the latest update for TRAC data at the time of writing is 2020/2021. This data was used to look at pandemic impacts in comparison to pre-pandemic data (2017-2020).
- The funding allocated to interventions has been taken as a proxy for intervention spend. Although a large proportion of this funding was likely to have been spent within the FY, some may have been carried forward to future years.

[18] "RAND Europe Survey," n.d.

2. Design and setup of interventions

This section discusses the findings with regards to the effectiveness and suitability of processes that underpinned the design and setup of interventions. This includes findings on which datasets underpinned intervention design, how various stakeholders were engaged, and the governance mechanism put in place for decision-making.

2.1 Evidence and process underpinning intervention design

The evidence utilised and processes put in place to design the COVID-19 stabilisation interventions were drastically varied. The objectives of the interventions listed in Table 3 illustrate the rationale for varied processes and dataset requirements given the variation in the scope of the interventions.

Table 3. Intervention objectives

Intervention	Objective
Sustaining University Research Expertise (SURE)	• To enable research and innovation activity to continue where it is disproportionately impacted by the loss of key income streams. • To preserve the capacity and capability of research departments, including retention of researchers. • To minimise unnecessary expenditure and deadweight. • To ensure appropriate targeting of the intervention, whilst providing sufficient confidence and assurance to the sector that support will be delivered quickly and effectively. • To time limit the intervention in a way that incentivises institutions to return to pre-COVID income routes as soon as possible. • To maximise positive economic impacts.
UKRI COVID-19 Grant Extension Allocation (CoA) and National Academy Extensions (NAE)	• To ensure that UKRI grant outcomes continue to be met, and the value of its grant investments continue to be realised. • To sustain grant-funded research skills and capability of UK organisations that will be needed to underpin the post-pandemic national recovery.

	• The National Academy Extensions were part of the Grant Extension Allocation and aimed to provide the four National Academies with the resources to sustain grant research.
UKRI Doctoral Extensions (DE)	• To enable UKRI-funded students to achieve doctoral training outcomes and to be paid to do so.
UKRI COVID-19 Institute Support Fund FY 20/21 (CISF)	• To provide UKRI's strategically funded institutes with resources in 2020/21 to ensure their short-term stability, to prevent institutional failures and to avoid deterioration of strategic national scientific capability as a result of impacts of the COVID-19 pandemic.
Repurposing support for small, specialist institutions (SSI)	• To address a reduction in charity funding to small, specialist institutes who may be particularly vulnerable to this loss caused as a result of the COVID-19 pandemic. • To enable institutes to continue ground-breaking and lifesaving work.
Additional funding through the World Class Laboratories Fund (WCL)	• To enable providers to make existing research infrastructure COVID-safe through modifications, as well as necessary maintenance.
Changes to existing UKRI programmes (QR reprofile and no cost extensions)	• To increase flexibility and reduce administrative burdens (on researchers and research organisations).
Medical Research Charity Early Career Researcher Fund	• To help support early career researchers supported by medical research charities.
BEIS COVID-19 PSRE interventions	• To help with continuation of research activities across BEIS' Public Sector Research Establishments.

Despite their varied objectives, the interventions were underpinned by common design principles including an overarching focus on maintaining stability of the research sector, sustaining research activity, and reducing administrative burden of intervention implementation. As outlined in Table 3, a key focus of the interventions was to maintain stability within the research system during the pandemic. This meant that addressing existing issues within the higher education sector were excluded from the scope

of the interventions and interventions were developed to offer temporary support to ensure stability during the pandemic.[19]

Creating stability within the research system was tackled in different ways across the interventions. This included providing additional support to research staff and students to ensure project completion, as was the case with the Doctoral Extensions, Grant Extension Allocation and Medical Research Charity fund. Whereas for others it was about providing institutions with bespoke and targeted support such as the Small, Specialist Institution funding, and World Class Laboratories funding.

During intervention design, there was a focus on reducing administrative burden, and where possible, decisions regarding the prioritisation of funding were devolved to ROs or recipients. This supported ROs to deliver the interventions in a timely manner by reducing constraints around funding prioritisation.[20] UKRI and BEIS attempted to keep the application processes and reporting requirements of interventions light-touch.[21]

Interventions were designed against a backdrop of high uncertainty. Therefore, UKRI and BEIS relied on capturing a wide range of data, as well as using institutional experience to support intervention design. The interventions were designed in a context of significant uncertainty. During the early phases of the pandemic, institutional expertise played an important role due to the limited data on the impact of the pandemic.[22] UKRI undertook substantial data collection efforts,[23] in order to mobilise expertise and understand the impact of COVID-19 on the HE sector.[24] Where possible, UKRI relied on established channels of data collection through partners such as the Office for Students (OfS) and devolved HE funding bodies, who ran data collection exercises to understand the scale of losses from international student income.[25] Calculations by the Department for Education (DfE) allowed for the establishment of a counterfactual for what income streams would have looked like in 2020/21, had it not been for the outbreak of COVID-19.[26] To navigate the uncertainty, multiple data sources had to be synthesised and this supported the modelling conducted to assess the demand for support.[27] An illustrative example of this is discussed in the SURE case study.

[19] "UKRI and BEIS Management Information," n.d.
[20] "UKRI and BEIS Management Information.", "Programme Management Interview 09", "Programme Management Interview 10"
[21] "Programme Management Interview 02", "Programme Management Interview 05", "Programme Management Interview 10"
[22] "Scoping Interview 05,", "Scoping Interview 01,"
[23] Finance business partners are embedded across government departments and institutions where they provide financial advice in support of organisational decision-making
[24] "UKRI and BEIS Management Information."
[25] "UKRI and BEIS Management Information."
[26] "UKRI and BEIS Management Information."
[27] "Programme Management Interview 01"

Case study 1: predicting demand for the SURE intervention

Context

SURE was co-designed by UKRI and BEIS as a novel intervention intended to enable research activity anticipated to be impacted by loss of income during the pandemic, particularly income generated through international student fees.[28] A key objective of SURE was to preserve the capability of research departments, including retention of researchers. Within the suite of interventions, SURE was the largest intervention planned. All HEIs were eligible across the UK and the support aimed to cover up to 80% of international student income loss. The intervention was set out as a combined loan-grant offering with a ratio of 3:1 (loan:grant). The loans were offered on generous terms, with low interest rates of 0.55% and a long repayment period of 10 years.

High degree of uncertainty in the data underpinning the SURE model

The initial data collected by BEIS and UKRI fed into a model developed by BEIS in collaboration with DfE, UKRI and the OfS to estimate the financial impact of COVID-19 on the HE sector. This model combined data from multiple sources including: the Higher Education Statistics Authority (HESA), charity funding bodies, UCAS, Home Office visa data, surveys, DfE, interviews with Russell Group financial directors, wider stakeholder consultation, grey literature from news outlets, and the Office for Budget Responsibility (OBR). This model for estimating financial impact had to be designed to cope with a high degree of uncertainty (using Monte Carlo simulation), since many of the data sources inputted into the model were highly uncertain, especially early on within the pandemic. This data analysis was complemented by a programme of structured data gathering from ROs through interviews, and stakeholder consultation. Due to the rapidly evolving nature of the situation, qualitative and quantitative data used by BEIS and UKRI for their internal modelling had to be updated on a weekly, and in some instances daily, basis.[29]

There were discrepancies within the underlying data. For example, at one point in the design process as BEIS and UKRI were modelling the impact of COVID-19 on international student numbers, and the two primary data sources estimating this impact, UCAS and visa data, were incongruous. The UCAS data sets estimated a far lower reduction in the number of international students compared to the visa data set. BEIS and UKRI had to evaluate the relative strength of these sources considering timeliness, comprehensiveness, and existing use of datasets. BEIS and UKRI also consulted the British Council's August survey of Indian and Chinese students. Ultimately, this resulted in early estimates of losses from anywhere between 10-45%.[30] This indicates the scale of uncertainty that BEIS and UKRI had to work with when designing the intervention. It was

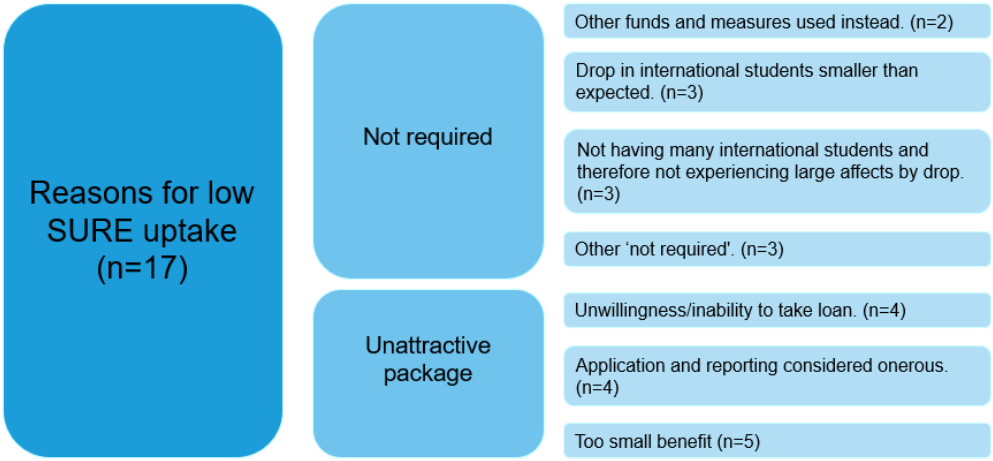
[28] "https://Www.Gov.Uk/Government/Publications/Support-for-University-Research-and-Innovation-during-Coronavirus-Covid-19/University-Research-Support-Package-Explanatory-Notes," n.d.
[29] "UKRI and BEIS Management Information."
[30] "UKRI and BEIS Management Information."

also highlighted that data sources were not necessarily available when required and had to be shared across stakeholders. For example, BEIS did not have access to institutional TRAC data, and only the Home Office had access to the visa data.[31]

Limited uptake of SURE across the sector

From the hundreds of eligible institutes, only 5 took up the SURE fund. In the RAND Europe survey, one of the reasons for not taking it up was that eligible institutions did not need it. This was in part because the drop in international students was not as big as some anticipated. Other reasons cited included use of other funds and measures, unwillingness to take on a loan, work relating to applying to the fund, and reporting requirements too onerous for the benefits that were offered.[32] Figure 3 below provides a breakdown of this thematic analysis from the RAND Europe survey.

Figure 3. RAND Europe Survey: Reasons for low uptake of SURE Fund (response from the overall survey respondents of n=61)



Key lessons learnt

Given the amount of planning, coordination and approvals required to establish SURE, the anticipated benefits were not proportionate given the limited uptake. The underlying data for modelling was highly uncertain, with surveys of international students and university forecasts proving not to be predictive of financial losses. The intervention may have benefitted from greater RO input into the terms of the loan and grant components, to make it an attractive proposition for a larger proportion of institutions and to keep BEIS and UKRI abreast of plans to mitigate forecasted international student losses. Although there was limited uptake of SURE, it has demonstrated the ability of UKRI and BEIS to design and implement a novel intervention at pace and engage in cross-government coordination. In future, building on this learning and adapting the processes to include better systems for accurate data collection at the RO level would be beneficial and would

[31] "Internal Validation Workshop," n.d.
[32] "RAND Europe Survey."

support forecasting during a crisis. In addition, due to the challenges around integrating and gathering data from multiple sources,[33] efforts to streamline these processes would be beneficial.

At the start of the COVID-19 pandemic, UKRI was funding approximately 25% of all doctoral students, making UKRI the single largest funder.[34] At the time of the interventions' development, most doctoral students were co-funded by ROs, the public sector, the private sector, or voluntarily. Overall, up to half of UKRI-funded students were co-funded, which meant that when it came to addressing the financial impacts of COVID-19 on doctoral students, UKRI had to consider how other co-funders of doctoral students – ROs, charities, and businesses – were impacted by the pandemic, and how they intended to act to secure their own financial stability.

Modelling of the potential impact of COVID-19 was also undertaken by some institutions themselves. This was the case for institutes when applying for the BEIS PSRE intervention. The NPL carried out internal modelling to feed into their business case for intervention support,[35] and the Met Office also carried out modelling on commercial aviation to estimate their requirements for support.[36] Across the interventions, varied datasets had to be consulted and aggregated for intervention design. The box below focuses on specific examples.

Examples of data underpinning intervention design.

Support for Small, Specialist Institution intervention

The repurposing of support for Small, Specialist Institutions was targeted to those specialist providers most exposed to loss of charity income. RE identified providers most at risk through OfS Annual Financial Return 2018-2019 data. This enabled them to calculate the percentage of total income drawn from eligible charity funding. Providers with 10 per cent or more of their total income drawn from charities were deemed to have a high exposure to income loss and were therefore targeted by this intervention.[37]

Medical Charity ECR Fund intervention

The formula for the Medical Charity ECR Fund was based on AMRC data on projected losses of fundraising income to the charities. The source estimated an average of 42% in research spend in FY 20/21. With these projected losses in income, resulting in a reduction of between £252 and £368 million, this information was used to develop the intervention. Once a budget of £20 million was approved, modelling was undertaken to consider the various options for funding distribution, based on the number of research

[33] "Internal Validation Workshop."
[34] "UKRI and BEIS Management Information."
[35] "UKRI and BEIS Management Information."
[36] "Programme Management Interview 08"
[37] "Programme Management Interview 10"

charities eligible for the fund and the scale of their research spend. The AMRC research expenditure dashboard supported the understanding of how the limited funding could be most equitably distributed.[38] The decision to focus on early career researchers was based on data-driven work for which AMRC was an important contributor and collaborator.[39]

World Class Laboratories intervention

The design and allocation of the WCL funding was made through a formula funding route calculated based on the amount of Research Council funding each institution received. The information was collected through a one-page form for each funding case, completed by the relevant council.[40] Modelling was conducted by the analysis team within RE with checks in place to ensure execution.

2.2 Staff roles and stakeholder engagement supporting intervention design

Intervention design was substantively informed by engagement with stakeholders from research organisations, government departments and sector bodies. However, the engagement, at times, came at the expense of being able to move forward at pace. Throughout the design and development of the interventions, aspects of the delivery mechanisms were tested with stakeholder groups (both recipients of the interventions and sector representatives).[41] Initially, communication and engagement sessions were held to understand the sector's point of view as a lay-of-the-land assessment.[42] For a comprehensive summary of the stakeholder consultation platforms involved across the interventions, please refer to Table 6 in Annex A.

In general, BEIS took the lead on coordination with other government departments, whilst UKRI led the coordination with sector stakeholders. One important interface of communication and coordination was between BEIS and the DfE where, whilst the DfE did not have a role in the design of specific interventions, they did support coherence of the overall package.[43] BEIS also engaged with HM Treasury (HMT), for approval as well as input into design.[44] For SURE, HMT signalled that the loans on offer as part of the package should be low interest with a 10-year term.

[38] "UKRI and BEIS Management Information."
[39] "Programme Management Interview 04"
[40] "UKRI and BEIS Management Information."
[41] "UKRI and BEIS Management Information.", "Internal Validation Workshop."
[42] "Programme Management Interview 01", "Sector Body Interview 06,"
[43] "Scoping Interview 01.", "UKRI and BEIS Management Information."
[44] "Programme Management Interview 01; "Programme Management Interview 05; "Programme Management Interview 08.

During intervention design, there was engagement and testing with representatives from HE and research sector bodies as well as devolved administrations.[45] For example, Universities UK (UUK) provided insights and analysis, as well as member engagement, which informed the development of several interventions. By analysing HESA data and speaking directly with their members, they informed universities of the risks arising from the pandemic and shared insights supporting BEIS and HMT to understand the scale of the risks.[46] Informal consultations with the sector also played an important role in adjusting expectations among ROs and ensuring interventions would effectively address their needs. In developing the business cases for the PSRE intervention, the NPL consulted directly with over 130 companies from across the UK that are part of its existing customer base.[47] This allowed NPL to understand the nature of the pandemic's impact on its customers, and how NPL could provide additional targeted support to them to weather the ongoing crisis.

Balancing adequate stakeholder consultation and delivering at pace was sometimes challenging. For example, one interviewee highlighted that in the case of SSI, the level of engagement necessary to understand the COVID-19 related risks that recipient institutions faced was a time-consuming and labour-intensive process.[48] For more information on stakeholder engagement, see section 3.2.

In some cases, this burden was lessened by focusing engagement with key sector bodies and representatives. For the Medical Research Charity intervention, the relationship with AMRC was key as their representation meant they could play a convening role between BEIS and the wider sector. The AMRC working as a 'broker' was highlighted as working well, providing support in requests to Ministers,[49] and dialogue between BEIS, the AMRC and the charities and providing a collective voice for the charity sector.[50]

BEIS and UKRI had distinct responsibilities in designing and delivering the interventions but ensured cohesion through ongoing engagement and communication. UKRI was responsible for the development of the CoA, DE, and the implementation of changes to its existing programmes such as QR reprofiling. Other interventions also had significant UKRI input with support from BEIS. The CISF was largely developed within UKRI, with close engagement with BEIS through meetings, and input from HMT to finalise the funding criteria.[51] Similarly, the WCL fund was delivered through RE, in close collaboration with other teams within UKRI, although intermittent meetings with BEIS ensured input could be gathered where needed.[52]

[45] See for example "Internal Document - UKRI Teams - Sustaining University Research Expertise (SURE) - 'Agenda - 08.09.2020 Read Out.'"
[46] "Sector Body Interview 06."
[47] "UKRI and BEIS Management Information."
[48] "Programme Management Interview 10"
[49] "Programme Management Interview 04", "Sector Body Interview 01,"
[50] "Beneficiary Focus Group 03 - Medical Research Charity ECR Fund," n.d.
[51] "Programme Management Interview 05"
[52] "Programme Management Interview 09"

The BEIS PSRE intervention centred on institutions that BEIS was directly responsible for, hence the intervention was solely steered by BEIS and developed in collaboration with the institutions involved (MET Office, NPL and UKAEA).[53] BEIS was also responsible for the development of the National Academy Extensions and engagement with the Academies.[54] BEIS managed coordination and negotiations with HMT throughout the development of any interventions that required formal or informal approval by HMT.[55]

BEIS and UKRI co-developed the SURE fund pooling their expertise and showcasing collaboration in the face of complexity. BEIS were primarily involved due to the financial costs associated with SURE and to transact the loan component of the intervention.[56]

Overall, despite the varied roles across the suite of interventions, interviews with programme management suggested that there was good engagement and communication across BEIS and UKRI, ensuring that the design and delivery of interventions was supported in a cohesive manner.[57] See Section 3.5 for more information on how effective collaboration and communication mechanisms between and within BEIS and UKRI helped to deliver interventions at pace.

The interventions were designed and delivered primarily by existing members of staff at UKRI and BEIS. Where possible, existing resource was mobilised within BEIS and UKRI to facilitate the design and delivery of the interventions.[58] For example, RE already had a team working with infrastructure that was put in charge of the WCL fund.[59] Because staff from existing teams were involved, this tended to result in them accruing additional responsibility during the pandemic.[60] For further detail on the specific teams involved in the design and delivery of the interventions please refer to Table 5 in Annex A.

2.3 Decision-making mechanisms for design and set up of interventions

Interventions went through multiple approval steps spanning UKRI, BEIS, HMT and in some cases No.10. Some of these processes were expedited to move forward at pace, reducing time needed for approval and sign-off compared to business-as-usual. Three of the main decision-making bodies and their roles are outlined below.

- **UKRI Executive Committee** (ExCo) provides strategic advice to the UKRI Board and is the day-to-day coordinating body for UKRI activity. It provides leadership

[53] "Programme Management Interview 08"
[54] "Beneficiary Focus Group 08 - National Academies," n.d.
[55] "UKRI and BEIS Management Information."
[56] "Programme Management Interview 01"
[57] "Programme Management Interview 01", "Programme Management Interview 02", "Programme Management Interview 06", "Programme Management Interview 09"
[58] "Programme Management Interview 01"
[59] "Programme Management Interview 09"
[60] "Programme Management Interview 05", "Programme Management Interview 02"

across the Councils and ensures collaboration on strategy and operational matters. ExCo is chaired by UKRI's Chief Executive Officer and is composed by the Executive Chairs of each of UKRI's nine councils, the Chief Financial Officer, Chief People Officer and Chief Operating Officer of UKRI.[61] ExCo played a key role in reviewing and approving the early planning and modelling of interventions undertaken internally and was also involved in signing-off interventions before they were sent to BEIS PIC and/or HMT for approval. Spending requirements below £10 million did not require approvals by PIC or HMT.[62]

- **The BEIS Projects and Investments Committee (PIC)** was a sub-committee of BEIS' Executive Committee and was responsible for approving new major projects and investments by BEIS. PIC was chaired by BEIS' Director Generals and deputy chaired by the BEIS Chief Financial Officer and the Chief Negotiator.[63] BEIS PIC was responsible for approving interventions that crossed UKRI's £10 million delegated spending limit, or any UKRI's internal budgetary ring-fences.[64]
- **HMT** was a key point for the approval of policy papers during the development of a number of interventions, notably the SURE fund and the CoA. HMT approval was also required for any spending commitments that would go beyond the delegated spending powers of BEIS, or that could create new financial pressures leading to a potential breach in departmental expenditure limits.[65] HMT approval was also required for moving money between budgetary ring-fences; HMT approval to reallocate spend across budgetary ring-fences was required for both the CoA and the CISF.[66]

Table 7 in Annex A provides a high-level overview of the approval processes of the interventions based on evidence available. In general, the more novel and costly the intervention, or where the intervention was tied to negotiations over wider financial management, the more key approval steps were required. Some of the larger and more complex interventions required ongoing consultation and sign off by No.10.[67] The PIC approval process was expedited during the pandemic, significantly reducing the time required to make major investment decisions from approximately four weeks down to seven to nine days.[68] In the case of the SURE fund, the expedited PIC approval process allowed

[61] "Executive Committee," UKRI, accessed April 16, 2023, https://www.ukri.org/about-us/how-we-are-governed/executive-committee/.
[62] "UKRI and BEIS Management Information."
[63] For a full list of board members see: "Our Governance," GOV.UK, accessed April 16, 2023, https://www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy/about/our-governance.
[64] "UKRI and BEIS Management Information."
[65] "Treasury Approvals Process for Programmes and Projects," GOV.UK, November 18, 2022, https://www.gov.uk/government/publications/treasury-approvals-process-for-programmes-and-projects.
[66] "UKRI and BEIS Management Information."
[67] "Scoping Interview 04," n.d.
[68] ""BEIS Annual Report and Accounts 2020 to 2021," GOV.UK, accessed April 17, 2023, https://www.gov.uk/government/publications/beis-annual-report-and-accounts-2020-to-2021.", "Sarah Munby, "Response to the Committee Re: Planning for a Vaccine Part 1 PAC Report" (BEIS, April 30, 2021), https://committees.parliament.uk/publications/5874/documents/66762/default/."

for a more rapid sign-off on an outline business case for SURE before all of the details of the fund were fully developed. An expedited PIC approval process was also used for the CoA, which was approved in a matter of weeks. The use of the expedited PIC approval process also allowed BEIS to circumvent pre-PIC approvals in the interest of delivering the interventions in a timely manner.[69]

Time pressures impacted intervention design, the communication of interventions to the research sector, and stakeholder consultation activities. Time pressures were further compounded by financial planning cycles and targets. The need to move forward at pace meant that standard processes around managing public money had to be adapted. Where changes were made to existing UKRI programmes, actions were taken more quickly with limited need for approval. Where novel interventions were designed, data gathering occurred in tandem with intervention design to deliver the interventions at pace.[70] Creative solutions were developed including the creation of a fast-track clearance process which enabled interventions to be tested and approved in a timely manner. An example was the CoA intervention where the standard peer review process for individual grants was waived as projects receiving the grants were ongoing and had been reviewed previously.[71] In some cases, such as the SURE fund, the fast track could not be used, and special considerations were needed due to its scale and level of risk.[72]

Time pressure was a driving force behind rapid communications to reassure the sector. Following stakeholder consultation[73] and preliminary approval by PIC and HMT, SURE was announced within the space of a few months despite the details not being finalised. Similarly, CoA was announced within the space of a few weeks. This rapid response provided reassurance to the research sector, reducing uncertainty and potentially minimising redundancies.[74]

The time pressures were compounded by financial planning and spending cycles. RE faced a time crunch in approving the first package of the WCL fund, which was provided through a Higher Education Research Capital funding uplift and had to be spent by March 2021. Accordingly, work was put into ensuring this funding was allocated in a way that enabled institutions to spend it in time. Likewise, in the case of the SSIs, funding had to be spent by the end of the financial year to prevent it going back to HMT and being reallocated, which required RE to approve the suggested approach to funding specialist providers as soon as possible to allow recipients adequate time to dispense the additional funding.[75]

While UKRI's willingness to act decisively in many cases allowed them to deliver interventions and sector reassurance in a timely manner, in other cases, time pressures

[69] "UKRI and BEIS Management Information."
[70] "Programme Management Interview 02"
[71] "Programme Management Interview 02"
[72] "Programme Management Interview 01"
[73] "UKRI and BEIS Management Information."
[74] "Scoping Interview 02," n.d.
[75] "UKRI and BEIS Management Information."

resulted in limited engagement with sector bodies. The review of the DE's first phase suggested that there were challenges in striking a balance between designing and delivering the intervention at pace. Hence, because UKRI prioritised an early announcement of the intervention, ROs and grant holders felt that the announcement, which was made without accompanying detailed guidelines, and without sufficient sector engagement, placed limits on their ability to effectively and coherently support students.[76] These examples from the design of the SURE fund and the CoA illustrate the difficulties UKRI faced in striking the right balance between responding quickly to a rapidly evolving situation and developing a sufficiently comprehensive understanding of the impact of COVID-19 and the needs of the research sector. Time constraints and pressures were a commonly stated challenge among staff involved in the development of the interventions.[77]

[76] "UKRI and BEIS Management Information."
[77] "Programme Management Interview 08", "Programme Management Interview 05", "Programme Management Interview 06", "Programme Management Interview 02", "Programme Management Interview 01", "Programme Management Interview 09", "Programme Management Interview 10", "Internal Validation Workshop."

3. Implementation of interventions

This section covers the findings on the effectiveness of the processes undertaken for intervention implementation with regards to stakeholder involvement, uptake of interventions and recipient needs, monitoring of the interventions and their timeliness.

3.1 Intervention implementation and stakeholder (government and wider sector) involvement

The speed at which interventions were delivered depended on their size and novelty, but BEIS and UKRI worked to deliver at pace where possible. As discussed in Section 2, the interventions required review and approval before support could be offered to institutions. BEIS and UKRI streamlined administrative processes and interviewees suggested that the interventions were in fact delivered at pace, particularly given the complex and demanding nature of the pandemic.[78] The speed at which the interventions were implemented varied depending on the novelty of the intervention, the size of the support package offered, and whether the funding came from existing ring-fenced budgets. On the one hand, the DE intervention was relatively rapid with Phase 1 supported by money ringfenced within UKRI budgets and the Phase 2 investment being below HMT's approval threshold for new programmes.[79] Whereas SURE included both a loan and grant component, and therefore required additional negotiation and approval from HMT.[80] Despite this, significant effort was taken to speed up processes where possible.

New forums were created to support delivery of the interventions and to aid in coordination and communication across BEIS, UKRI and wider stakeholders, which allowed delivery at pace. Different forums were responsible for the governance and delivery of the interventions across the portfolio (summarised in Table 8). Some of these, such as the Stability Group, covered several interventions. The Stability Group was a forum created to understand the impact of COVID-19 on the HE sector and brought together Executive Chairs tasked with overseeing UKRI's research stabilisation efforts. It was composed of representatives from across the organisation and allowed for coordination across UKRI and provided an effective way to brainstorm and share ideas for UKRI's response.[81] The Joint Ministerial Taskforce on University Research and Knowledge Exchange was a forum created by BEIS and DfE to develop their response to the COVID-19 pandemic. The primary function was to manage relationships with key HE sector stakeholders and allow for their input into intervention design in a cohesive and

[78] "Programme Management Interview 02", "Programme Management Interview 05", "Programme Management Interview 07", "Sector Body Interview 06," n.d.
[79] "UKRI and BEIS Management Information."
[80] "Programme Management Interview 02", "Programme Management Interview 01"
[81] "Scoping Interview 03," n.d.

comprehensive manner, whilst working at pace. The forum brought together sector experts, representatives from the devolved administrations, HE funding bodies, UKRI, and RE.[82]

In order to support delivery and prevent bottlenecks, BEIS and UKRI provided ROs with autonomy to deliver the interventions. However, this placed a burden on the institutions and opened up RO decision-making to critique with regards to transparency. Across the portfolio of interventions, decisions relating to the distribution and use of funding were largely delegated to ROs. For example, for CoA, Medical Charity ECR Fund, and the WCL Fund, funding was allocated as a block grant with institutions able to determine where to distribute the money.[83] Providing ROs with autonomy to deliver the interventions provided two main benefits including (i) reducing the administrative burden on BEIS and UKRI which in turn could support rapid intervention delivery, and (ii) providing institutions with greater autonomy regarding decision-making and prioritisation of funding within their organisation. The trust placed in ROs was highlighted as a positive by focus group participants.[84]

In order to support ROs with delivery of the interventions, UKRI provided guidance setting out expectations of the funding should be awarded. For the DE intervention, it was emphasised that the money should be provided on a "needs-priority basis" with UKRI defining which groups to focus on (e.g. doctoral students in their final year) or groups of students (e.g. students with caring responsibilities) that would present an acute need or priority for support.[85] The transparency of decision-making processes used by ROs was called into question by students.[86]

Another downside to giving decision-making responsibility to ROs was the additional burden this placed on organisations and staff who were already struggling as a result of the pandemic. This created challenges for staff resource within the organisations where they had to run internal funding calls and review applications, administer funding, prioritise researchers for funding and allocate funding amounts.[87]

Where application processes were required, they were designed to be as light-touch as possible to reduce burden which was valued by recipients. For the DE intervention, ROs were required to identify an alternative professional in case the applicant was not comfortable disclosing potentially sensitive information to their training grant holder or supervisor. Overall, UKRI data suggests that eligible doctoral students found the application process relatively simple. The process involved a 1-page submission on the impact of the pandemic on their study and rationale for the need for the extension, although students

[82] "Scoping Interview 04," n.d.
[83] "UKRI and BEIS Management Information."
[84] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE),", "Beneficiary Focus Group 07 - World Class Laboratories Fund,"
[85] "UKRI and BEIS Management Information."
[86] "Scoping Interview 05."
[87] "Beneficiary Focus Group 02 - Doctoral Extensions,", "Beneficiary Focus Group 03 - Medical Research Charity ECR Fund.", "Beneficiary Focus Group 07 - World Class Laboratories Fund."

reported experiencing anxiety at having to fill out the application form.[88] Institutions in receipt of other interventions also highlighted their appreciation for light-touch application processes.[89] Other positive aspects of the application processes were also highlighted. For example, those in receipt of the WCL fund highlighted that the criteria were clear and simple to understand which supported the institutions in applying.[90]

While efforts were made to limit the workload associated with the application process, this was not experienced across the board. As mentioned in Case Study 1, some eligible institutions did not apply for the SURE fund due to the work required and burden of applying. One of the suggested future improvements identified by 19% of institutions (7 out of 37 respondents to this question) in the RAND Europe survey was to make processes, including application and reporting procedures, less burdensome and more straightforward.[91]

3.2 Engagement with recipients of interventions

UKRI and BEIS recognised the importance of communication in the context of the pandemic and used several modes of communication to support engagement with the sector. The uncertainty brought by the pandemic left the research community confused and anxious about the future. Researchers and institutional bodies proactively engaged with BEIS and UKRI to voice their concerns and needs. For example, doctoral students contacted UKRI through open letters, email, and social media, which in some instances led to additional meetings in which students gave their input.[92] UKRI and BEIS consulted sector bodies throughout the pandemic to gather insight into the challenges facing the sector in light of the pandemic, as well as insight into specific interventions.[93] ROs were also directly engaged with, supporting strengthened working relationships.[94] Institutions involved in some of the interventions highlighted particularly excellent communication, with helpful and dedicated points of contact across UKRI.[95] Over the course of developing, implementing and in some cases updating the interventions, BEIS and UKRI issued a variety of communications. These can be found listed in Table 11 in Annex B and summarised in the box below.

[88] “UKRI and BEIS Management Information.”
[89] “Beneficiary Focus Group 03 - Medical Research Charity ECR Fund.”, “Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE).”, “Beneficiary Focus Group 01 - Covid-19 Institute Support Fund,”.
[90] “Beneficiary Focus Group 07 - World Class Laboratories Fund.”
[91] “RAND Europe Survey.”
[92] “UKRI and BEIS Management Information.”
[93] “Sector Body Interview 06.”, “Sector Body Interview 02,”, “Sector Body Interview 05,”, “Sector Body Interview 07,”.
[94] “Programme Management Interview 10”
[95] “Beneficiary Focus Group 05 - Support for Small, Specialist Institutions,”, “Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE).”, “Beneficiary Focus Group 01 - Covid-19 Institute Support Fund.”.

Communication activities from BEIS and UKRI

Informative announcements outlined the purpose of the interventions and provided guidance on how to apply.[96] This included publishing the resources necessary for accessing support such as reporting templates. Ongoing updates aimed to keep stakeholders informed of changes to the interventions, [97] and to provide reassurance to the sector.[98]

Communication and guidance to ROs and sector representation bodies aimed to provide a sounding board for proposed interventions and to act as an opportunity for the sector to feedback on proposals for interventions. In addition, ongoing communication between BEIS, UKRI, and key stakeholders, evidenced through email exchanges, allowed ongoing dialogue and a sense of co-ownership of the interventions.[99]

BEIS and UKRI commissioned and published analysis of the impact of COVID-19 on the research and HE sector with the aim of increasing understanding.[100] By encouraging the publication of data on the impact of the pandemic on the sector, it is likely BEIS and UKRI were trying to create a shared narrative of the pandemic's impact, in part to provide some degree of transparency regarding the difficult choices underlying the design and delivery of the stabilisation interventions.

Explanatory statements of UKRI's decision-making were published, notably, during the development of the Doctoral Extension intervention. Examples of this include an open letter by UKRI's Director of Talent and Skills that aimed to reassure key doctoral training stakeholders of UKRI's ongoing work to update and extend the Doctoral Extensions intervention, and by UKRI's Chief Executive, responding directly to demand from the sector (for example the campaign by @PandemicPGRs for UKRI to offer 6-month blanket extensions to doctoral students) with explanation of the constraints and thinking informing UKRI's design of the interventions. The aim of these communications was to offer sector reassurance and transparency on the procedural and financial pressures informing UKRI's design of the interventions.

Data and award allocations were published on an ongoing basis to provide the sector with information on the allocation decision and the overall changes in direction to funding

[96] "Guidance on the Additional (CoA Awards) - Completing the Additional CoA Application Form and the Additional CoA Terms & Conditions" (UKRI, September 22, 2021).
[97] "Our Evolving Policy for COVID-19 Doctoral Extension Funding," accessed May 8, 2023, https://www.ukri.org/news-and-events/tackling-the-impact-of-covid-19/guidance-for-applicants-and-awardholders-impacted-by-the-pandemic/supporting-students-through-the-pandemic/policy/.
[98] "Sustaining University Research Expertise (SURE) Package," GOV.UK, November 6, 2020, https://www.gov.uk/government/publications/support-for-university-research-and-innovation-during-coronavirus-covid-19/university-research-support-package-explanatory-notes.
[99] Email exchanges are an example of this.
[100] "State of the Relationship 2021: Analysing Trends in UK University-Business Collaboration" (National Centre for Universities and Business, 2021), https://www.ncub.co.uk/wp-content/uploads/2021/07/State-of-the-Relationship-2021-Final-version.pdf.

for the sector.[101] UKRI also published sector-wide budgetary allocations for different UKRI programmes and investments. This was likely aimed at increasing transparency on the decision-making and priorities and to increase stakeholder buy-in.

In terms of wider communication around the COVID-19 response, UKRI launched the Tackling COVID-19 communications campaign. This aimed to enable a more proactive and structured process to communicating the impact of UKRI research and innovation. The overarching objectives of the campaign were to: (i) demonstrate the value of UKRI-funded research and innovation, (ii) inspire high quality applications and ensure clear guidance and (iii) engage parliamentarians and increase the proportion who recognise and understand UKRI's role.[102] An evaluation of this campaign highlighted significant levels of national, regional and sector media coverage and an increase in MPs' awareness of UKRI.[103]

An evaluation of the targeted UKRI communications campaign found successful collaboration across the communications and engagement teams, and positive internal working relationships.[104] There was significant collaborative effort across UKRI, NIHR and BEIS to ensure appropriate scoping of communications activity. This also included engagement with the COVID-19 vaccine taskforce. A communications taskforce was established and met regularly, ensuring consistency across the different teams involved. It was critical to the communications planning that any activity did not impede rollout of operational activity.[105]

UKRI and BEIS engaged substantively with ROs to understand and address their needs, which helped shape delivery of the interventions. UKRI and BEIS created opportunities to interact with their key audiences, including institutions and individual researchers to understand how to address their needs. Consultation, engagement, and communication with the sector was essential to the decision-making process involved in designing the interventions. The change in timelines to the REF 2021 exercise were made following communication between the REF team and ROs.[106] Similarly, the consultation shaped the implementation of the Medical Research Charity (MRC) intervention as highlighted below.

Consultation on the Medical Charity Early Career Researcher Fund

The development of the Medical Charity Early Career Researcher Fund included extensive engagement between MRC, BEIS, DHSC and AMRC through numerous meetings to discuss the intervention. Additionally, targeted engagement was held with

[101] "UKRI and BEIS Management Information."
[102] Toby Shergold, "Tackling COVID-19: Communications Evaluation, July 2020–May 2021" (UK Research and Innovation, 2021).
[103] Shergold. 2021., "Programme Management Interview 11"
[104] Shergold, "Tackling COVID-19: Communications Evaluation, July 2020–May 2021."
[105] "Programme Management Interview 11"
[106] "UKRI and BEIS Management Information."

ROs to understand the role they could play in helping support implementation and delivery. This included meetings with Imperial College London, UCL, University of Bristol, Newcastle University, University of Manchester, and the Russell Group. This engagement led to changes including that the funding was paid directly to the charities, as opposed to the universities, to minimise administrative burden.[107] The engagement and ability to put forward suggestions was particularly welcomed by the charities involved in the intervention, as well as the convening role taken by the AMRC which supported communication between UKRI, BEIS and the charities themselves.[108]

Some of the relationships formed by BEIS and UKRI with the research and HE sector during the pandemic have been sustained, supporting ongoing dialogue around important policy challenges facing researchers today. The working relationship formed between BEIS, UKRI and the AMRC for the Medical Charity ECR intervention supported discussion around challenges faced by the sector as a direct result of the pandemic, as well as ongoing challenges such as the cost-of-living crises.[109] Representatives from Universities UK (UUK) also experienced a positive working relationship with BEIS and UKRI during the design and delivery of interventions, building trust. These bonds are described to have been sustained, and UUK are keen to continue talking collectively about the development of broader policy.[110] Ultimately, continuing relationships with sector bodies and ROs has created an opportunity for BEIS and UKRI to understand the challenges faced across the sector, and to continue enabling them to address the challenges more effectively.

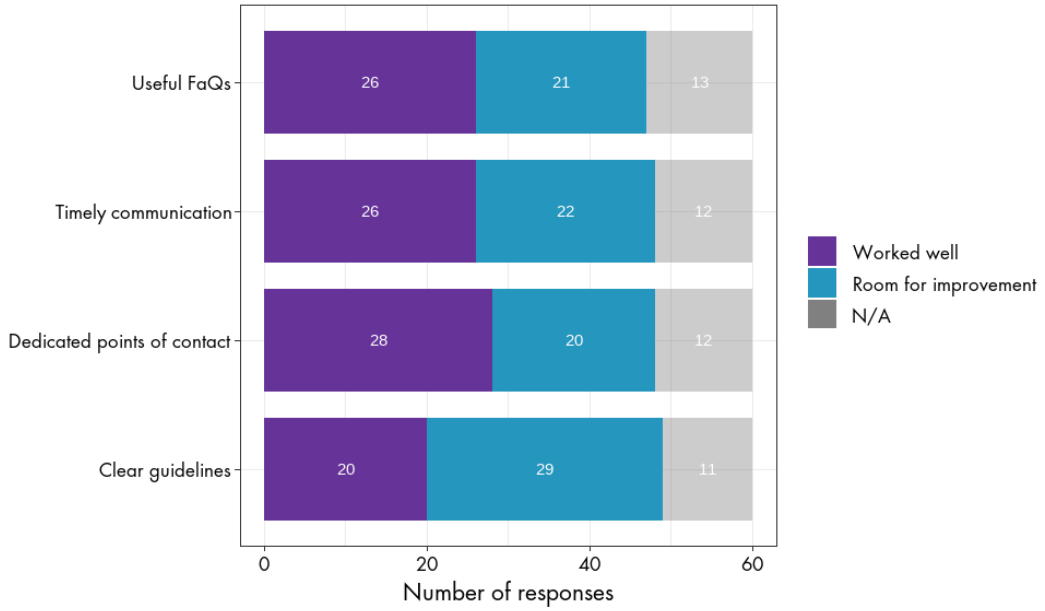
The sector felt that communication around the interventions was confusing at times, particularly at the start of the pandemic. Despite this, it was acknowledged that across several of the interventions, communication had worked well given the challenging circumstances. UKRI and BEIS recognised the importance of clear communication around the support being offered. Feedback from the sector was varied with regards to the effectiveness of efforts undertaken. Sector bodies highlighted that the communication early on was appreciated and provided reassurance.[111] However, it was also stated that communication from BEIS and UKRI to the sector at the start of the pandemic was perceived as confusing and ineffective in terms of quantity and chosen channels.[112] Institutions in receipt of interventions including DE, and the CISF also highlighted that communication was not always clear and could have been improved.[113] For example, institutions in receipt of the DE mentioned that for Phase 1 of the intervention, it

[107] "UKRI and BEIS Management Information."
[108] "Beneficiary Focus Group 03 - Medical Research Charity ECR Fund."
[109] "Programme Management Interview 11"
[110] "Sector Body Interview 06."
[111] "Sector Body Interview 02.", "Sector Body Interview 06.".
[112] "Programme Management Interview 11", "Sector Body Interview 02.", "Sector Body Interview 06.", "Sector Body Interview 05.", "Sector Body Interview 07.".
[113] "Beneficiary Focus Group 02 - Doctoral Extensions.", "Beneficiary Focus Group 05 - Support for Small, Specialist Institutions."

would have been helpful to be notified before UKRI announced their support to students, and to receive summaries of changes to the FAQs as they were updated.[114]

These findings are supported by the RAND Europe survey, which explored perceptions of organisations in receipt of support on the communication efforts of UKRI and BEIS. As shown in Figure 4 below, perceptions were mixed as to whether communication worked well. Guidelines were one of the areas where room for improvement was most strongly highlighted.

Figure 4. To what extent did UKRI/BEIS engage effectively with your organisation?



Source: RAND Europe survey of institutional leadership

It was also felt by institutions that the timing of guidance and FAQs could have been improved. For the CoA, many found the terms and conditions to be unclear. This confusion was exacerbated as the terms and conditions were updated after the funding had already been allocated. Focus group participants also raised that, although the FAQs were useful, it would have been useful to have any additional updates announced to prevent institutions from manually having to check regularly through the uploaded information.[115]

Early communication of the intervention was highlighted as being an area for improvement.[116] [117] [118] For the DE intervention, institutions in receipt of funding stated that they would have benefited from an early announcement of the intervention, as this would have enabled greater time for planning, including considerations around potential budget for

[114] "Beneficiary Focus Group 02 - Doctoral Extensions."
[115] "Beneficiary Focus Group 02 - Doctoral Extensions."
[116] "Beneficiary Focus Group 05 - Support for Small, Specialist Institutions."
[117] "Beneficiary Focus Group 02 - Doctoral Extensions."
[118] "Beneficiary Focus Group 07 - World Class Laboratories Fund."

non-UKRI funded doctoral students.[119] This was also raised by institutions in receipt of funding through the WCL Fund as research infrastructure often requires long lead times and testing, therefore procuring at short notice can be challenging.[120]

It should also be noted that, in addition to communication from UKRI, many postgraduate researchers felt like the communication from their own institutions was overall lacking, making them feel neglected within the research community.[121]

While many understood that there were challenges which prevented the effectiveness of early communication, this was highlighted as an important area of improvement for future shocks to the system.[122] Sector body stakeholders stated that one way to improve communication could be to bring them into the conversation, as they have better insight into appropriate channels and methods, and could also support messaging to ensure its appropriateness for institutions.[123] There was also a desire for broader sector engagement, including greater engagement with universities outside of the Russell Group.[124] One institution in receipt of the National Academy Extensions suggested that more communication around what other delivery partners within UKRI were doing would also have been valuable.[125] UKRI stakeholders noted the additional challenge of ensuring that UKRI had up-to-date information on institutional contacts to liaise with during intervention delivery.[126]

Despite the initial negative feedback, several sources also suggested that communication from UKRI and BEIS improved over the course of the pandemic.[127] Russell Group leaders believed that UKRI learned the value of communication, incorporating feedback from sector bodies and other stakeholders when deciding what information to share and how to distribute it.[128] BEIS and UKRI's communication was viewed as increasingly frequent and transparent over time.[129] Institutions did acknowledge the challenges that BEIS and UKRI were working under, and positive aspects were highlighted, particularly around having dedicated points of contact (Figure 4). Two of the institutions participating in the RAND Europe survey highlighted RE as communicating particularly well.[130]

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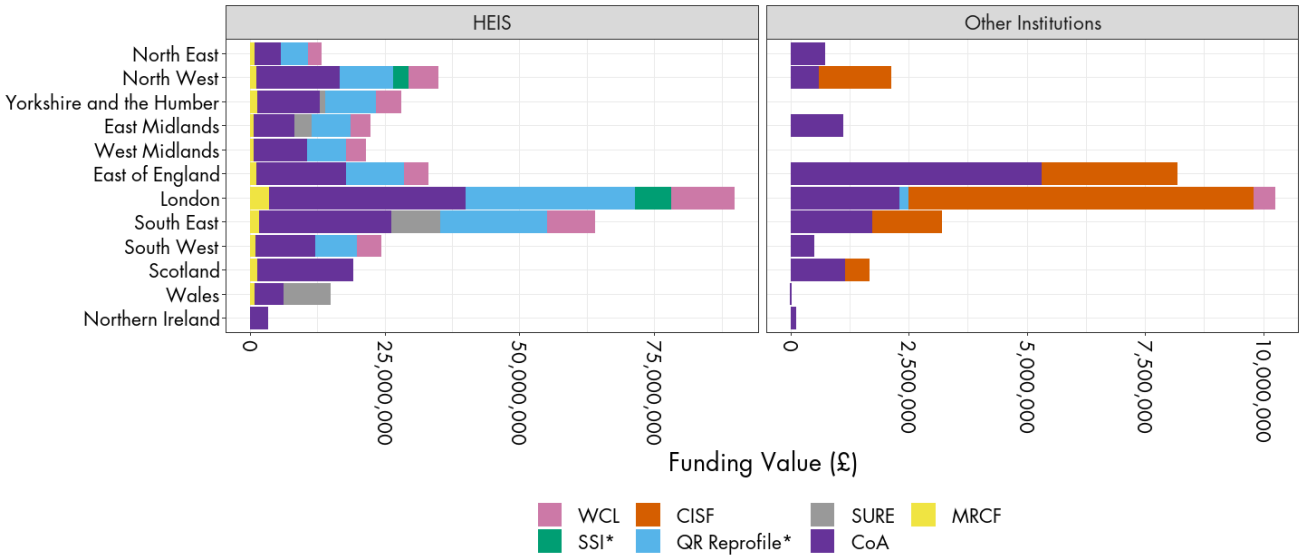
[119] "Sector Body Interview 02.", "Sector Body Interview 03,", "Beneficiary Focus Group 02 - Doctoral Extensions.".
[120] "Beneficiary Focus Group 07 - World Class Laboratories Fund."
[121] Maddie Pitkin, "2021 Postgraduate Research Experience Survey (PRES)" (Advance HE, n.d.), https://s3.eu-west-2.amazonaws.com/assets.creode.advancehe-document-manager/documents/advance-he/AdvHE_PRES_2021_1636460694.pdf.
[122] "Sector Body Interview 05.", "Sector Body Interview 02.".
[123] "Sector Body Interview 05."
[124] "Sector Body Interview 07.", "Sector Body Interview 02.", "Beneficiary Focus Group 02 - Doctoral Extensions.".
[125] "Beneficiary Focus Group 08 - National Academies."
[126] "Internal Validation Workshop."
[127] "Sector Body Interview 05.", "Sector Body Interview 02.", "Beneficiary Focus Group 02 - Doctoral Extensions.", "Beneficiary Focus Group 05 - Support for Small, Specialist Institutions.".
[128] "Sector Body Interview 05."
[129] "Sector Body Interview 02."
[130] "RAND Europe Survey."

3.3 Intervention uptake and funding utilisation

HEIs received more financial support compared to other institutions, which came from a range of interventions. London received the highest value of financial support. For a more granular view of the distribution of COVID-19 interventions, the funding allocation has been mapped geographically to illustrate the distribution of funding across the country. Given that the interventions were primarily designed for existing UKRI funding recipients, it is expected that the geographic reach would mirror existing funding patterns. Nonetheless it is noteworthy to see the flow of new funds such as WCL, SURE, and CISF.

Figure 5 highlights that London received the most funding, which was proportionate to its research intensity, and that Wales and the South East were the primary recipients of SURE funding. The CISF was targeted to specific institutions thus the geography reflects their location.

Figure 5. Spread of funding across HEIs, and other institutions[131]

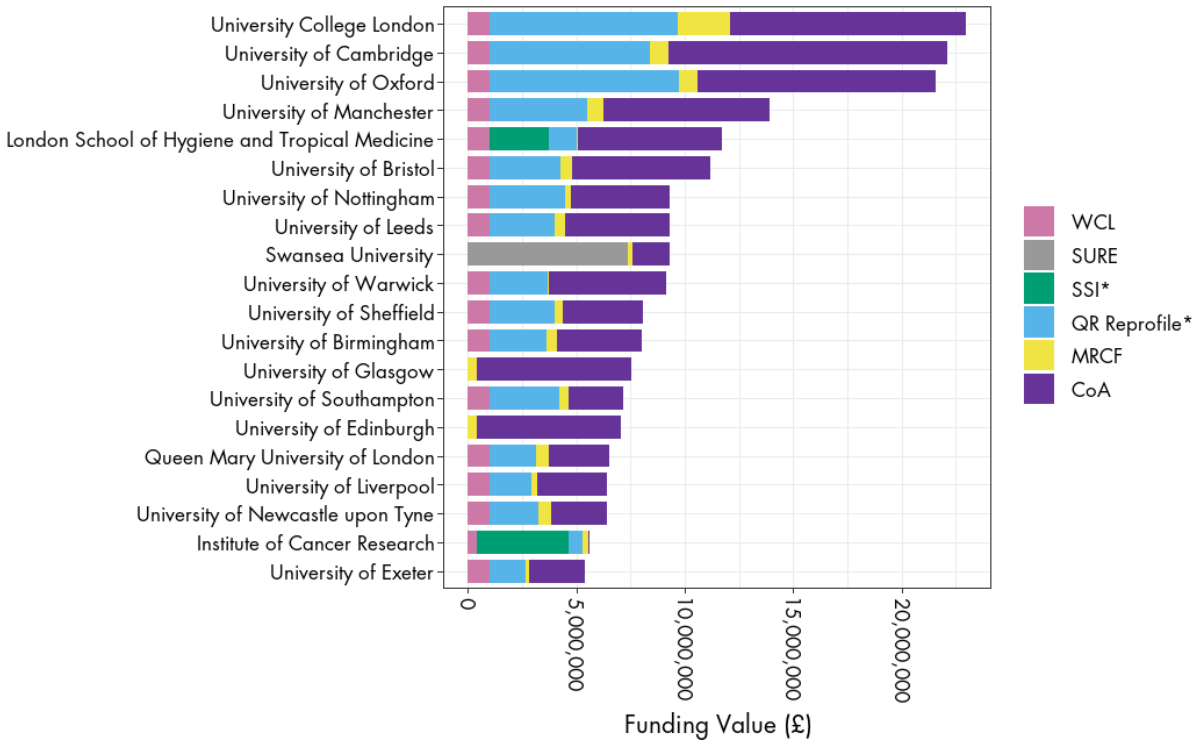


*Source: RAND Europe analysis of internal data on UKRI and BEIS spend. *denotes existing funds available that were re-allocated.*

The top 20 institutions that received the highest levels of funding received support from a suite of intervention packages (Figure 6). Of these, two received a larger proportion of income from fewer interventions including Swansea University which received a high proportion of its support from SURE, and the Institute of Cancer Research which received a high proportion from the Specialist Institution Fund.

[131] Other institutions refer to research institutions that are not higher education providers.

Figure 6. Top 20 institutions receiving the most financial support from the interventions

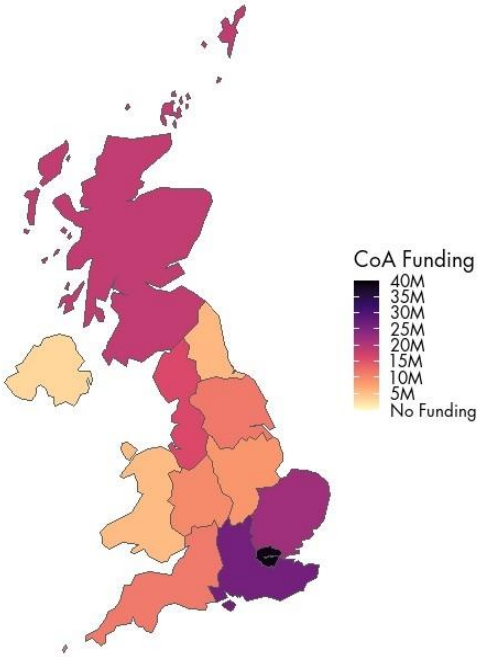


*Source: RAND Europe analysis of internal data on UKRI and BEIS spend. *denotes existing funds available that were re-allocated.*

Looking more granularly at CoA funding, the allocation was distributed throughout the UK, with London and the South East receiving the most funding, mirroring the UKRI funding distribution (Figure 7).[132] CoA funding was the main intervention-specific funding allocated in Scotland.

[132] "Geographical Distribution of UKRI Spend in 2019-20 and 2020-21," Tableau Public, accessed April 16, 2023, https://public.tableau.com/app/profile/uk.research.and.innovation.ukri./viz/GeographicalDistributionofUKRISpendin2019-20and2020-21/UKRISpend.

Figure 7. Grant extension allocation funding allocations by region



Source: RAND Europe analysis of internal data

In general, demand for interventions was slightly lower than anticipated**,** with the notable exception of SURE where demand was significantly lower than expected.

Grant Extension Allocation

The CoA reported an underspend of around £12 million at the end of the scheme. Whilst nearly all organisations eligible accepted grants, in some cases material levels of underspend were returned. More investment in earlier monitoring may have reduced this underspend by re-investing the funding to others in the sector which were in greater need.[133]

COVID-19 Institute Support Fund

The COVID-19 Institute Support Fund was applied to by six strategically funded institutes, all of which were approved. Applications from the institutes were lower than anticipated,[134] and it was suggested that this was likely due to the reserves available to many institutions and used in place of the intervention support.[135]

[133] "Programme Management Interview 07"
[134] "UKRI and BEIS Management Information."
[135] "Programme Management Interview 05"

SURE

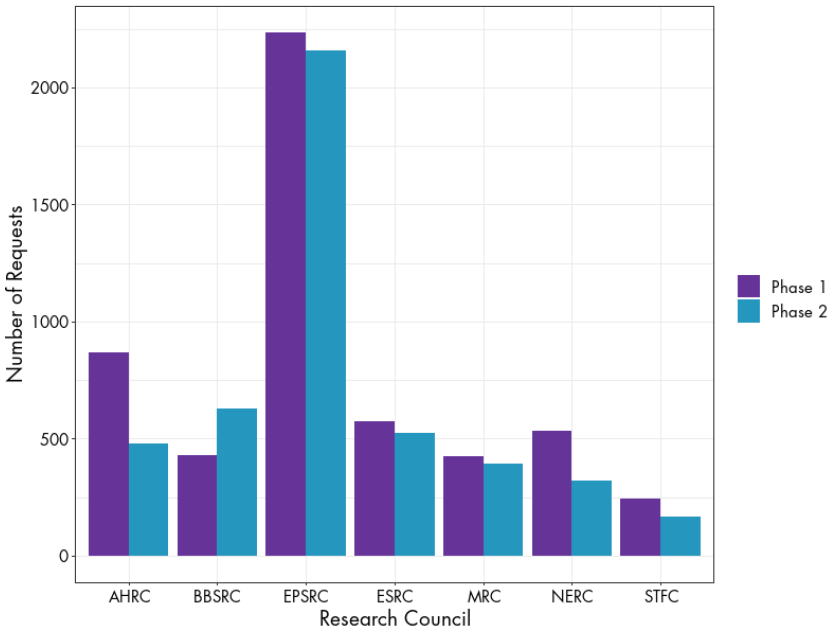
The scale of the fund was estimated to be at least £300M, and potentially far higher into £billions, in the business case,[136] whereas in fact the uptake came to just under £22M. This low application rate was explained by the fact that the intervention involved too many complicated terms and conditions, was launched too late and, importantly, offered a loan package along with the funding which was not attractive in comparison with what was available on the open market.[137]

Doctoral Extensions intervention

The Doctoral Extensions intervention was carried out in two phases. Phase 1 was announced by UKRI in April 2020 and targeted students in the final year of their PhD only. Phase 2 was announced in November 2020. This phase had an expanded scope with widened eligibility to include students in their penultimate year. For the Doctoral Extensions intervention, approximately 80% of those who were eligible applied for support in Phase 1. This demand was lower than expected and led to an underspend of £7 million.[138] The Engineering and Physical Sciences Research Council (EPSRC) accounted for around 40% of these requests, Arts and Humanities Research Council (AHRC) around 16% and the remaining UKRI Councils between 11-5% of requests as presented in

Figure 8. Except for BBSRC, extension requests dropped for all councils in Phase 2.

Figure 8. PhD funding extension requests for the Doctoral Extension intervention

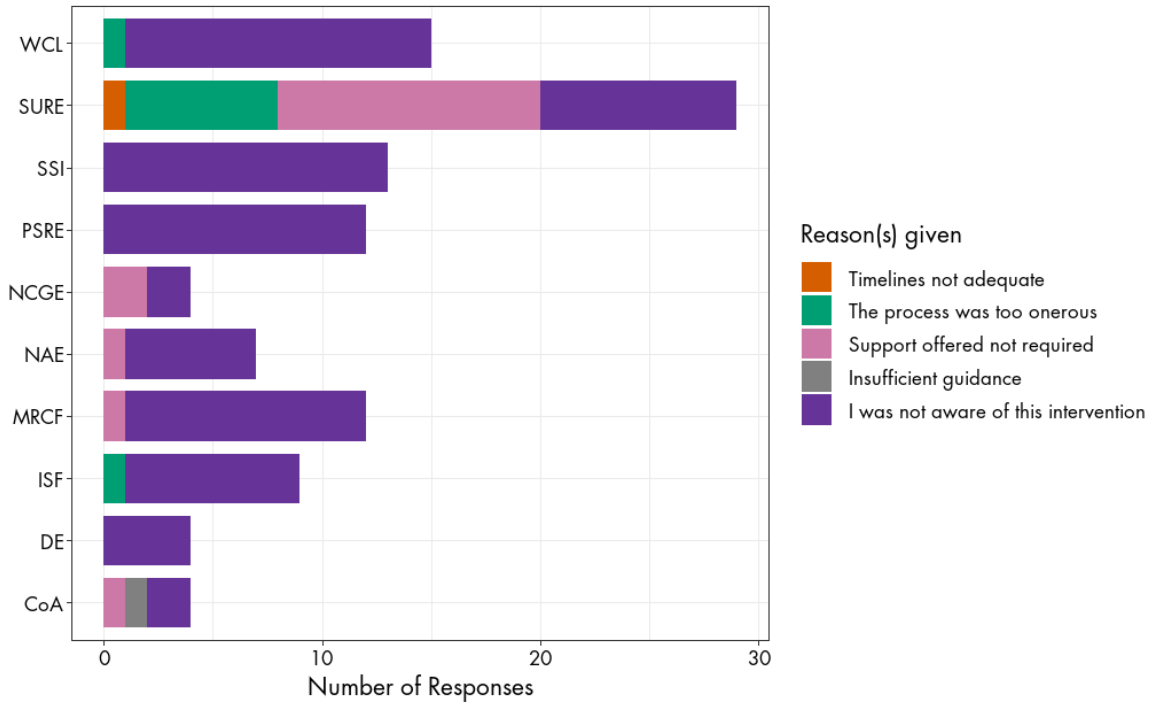


[136] "UKRI and BEIS Management Information."
[137] "Programme Management Interview 01", "RAND Europe Survey," n.d., "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE)," n.d.
[138] "UKRI and BEIS Management Information."

Source: RAND Europe analysis of internal data.[139] *Note that this data doesn't consider the number of PhD students enrolled per Research Council at the time.*

As shown in **Figure 9**, results from the RAND Europe survey demonstrated that generally, the primary reason for not applying for an intervention was lack of awareness. However, the survey results need to be interpreted with caution as some of the interventions were not intended for all universities and they would not have been eligible. For instance, the SIF, and PSREs were for specific providers by invitation only. In fact, one interviewee cited that there was confusion from ROs around eligibility for the interventions.[140]

Figure 9. Were there any interventions that your organisation didn't apply for? Why?



Source: RAND Europe survey of institutional leadership

Across the interventions, the support was used as intended, and this was facilitated by flexibility of the interventions and the delegated responsibility to ROs. Based on the available evidence, the support offered by the interventions was used as intended. Clear eligibility criteria and monitoring processes worked to prevent any misuse of funding.[141] Where interventions did not use formal monitoring of their recipients, such as for the Specialist Institute Fund, it was suggested that informal discussions around expectations for funding use mitigated against surprises in terms of spending.[142] Where interventions were less prescriptive in how funding was to be used, such as the WCL fund,

[139] Note that the dataset used in this iteration of the report is missing some of the Phase 2 Doctoral Extension data due to data availability issues.
[140] "Programme Management Interview 01"
[141] "Programme Management Interview 08", "Programme Management Interview 09", "Programme Management Interview 10", "Programme Management Interview 05".
[142] "Programme Management Interview 10"

providers seemed to trust that the funding would be spent according to its intended purpose of mitigating COVID-19 disruptions.[143]

3.4 Effectiveness of processes undertaken to monitor interventions

Monitoring processes aimed to both ensure accountability for funding use and to gather data to inform future stages of the intervention or wider response. The monitoring practices served several purposes. First, it served to hold recipients accountable for spending funding appropriately.[144] Second, monitoring information enabled UKRI and BEIS to understand more precisely the impact of the pandemic on recipients including whether certain disciplines were more impacted or the nature of additional costs incurred by institutions as a direct result of the pandemic.[145] Such information was used by UKRI to adapt interventions as the pandemic progressed (further discussed in section 3.6). Going forward, monitoring data is intended to be used to inform future policy decisions during business as usual and/or during future exogenous shocks to the system.[146]

Monitoring practices used existing processes and relationships where possible to increase efficiency, although as expected, new interventions required new mechanisms to be established. For the DE, data was captured through standard annual reporting with additional data asks supplemented by existing grant holder data from Je-S. Similarly, CoA data was supplemented with data on financial compliance and additional data on grant outcomes from Researchfish.[147] For new interventions such as SURE, new monitoring channels and processes were needed as existing ones did not accommodate the specificities of the interventions, as described in the box below.

Need for new monitoring processes for the SURE Fund

The SURE Fund, due to its size and novelty, had to rely on a new process and governance framework for monitoring. During the preparation of their applications for the SURE fund, ROs were asked to submit a SURE plan against which UKRI and the Devolved Funding bodies would be able to evaluate their use of funding. Responsibility for monitoring the use of funding was split between BEIS and UKRI - with BEIS taking responsibility for the loan component of the package, and UKRI and the Devolved Funding bodies taking responsibility for the grant component of the SURE package. With that in mind, where possible those involved in the SURE fund relied on existing data

[143] "Programme Management Interview 09"
[144] "Programme Management Interview 09"
[145] "Programme Management Interview 05"
[146] "Programme Management Interview 02", "Programme Management Interview 05", "Programme Management Interview 09".
[147] "UKRI and BEIS Management Information."

sources such as HEBCI and HESA data for monitoring RO's use of the loans and grants against their SURE plans to minimise reporting requirements as much as possible.[148]

Monitoring requirements varied across the interventions, but on the whole were considered very light-touch. This was highly valued by the recipients. ROs were asked for reports or monitoring templates to update on developments and the use of funds. These processes are detailed in Table 10. For some interventions, additional monitoring to business-as-usual (BAU) monitoring was required. This included details on spend, research activity or case studies to demonstrate how the funding had benefited and supported the recipient (see box below for details).[149] However, even where there were additional requirements, institutions on the whole felt these were light-touch.[150] For example, SURE had more monitoring than the majority of interventions; institutions in receipt of support felt this was in proportion to the funding received and on the whole light-touch compared to other opportunities.[151] For other interventions, additional formal monitoring processes were not required or reporting was wrapped into existing BAU processes.[152] For example, for PSRE, monitoring was wrapped up in financial BAU reporting, with informal communication between funders and institutions considered sufficient to verify that funds were being used appropriately. Strong pre-existing relationships between funder and recipients was a precondition in these cases.[153] Similarly ROs did not undertake intervention-specific reporting for the Doctoral Extension intervention, undertaking annual reporting instead.[154] It should be noted however, that interventions also took a bespoke approach: although the PSRE monitoring was light-touch, additional monitoring was undertaken by NPL for the M4R scheme to capture impact.[155] The box below describes some of the monitoring processes, and their variation across interventions in more detail.

Focus group participants were very grateful for the light-touch nature of reporting. Some participants welcomed the opportunity to report back on what had been accomplished through the intervention,[156] whilst others supported more detailed monitoring to ensure all relevant information was captured adequately in terms of impacts.[157] Thinking about future responses, participants within the SURE focus group highlighted that the common

[148] "UKRI and BEIS Management Information."
[149] "Programme Management Interview 09"
[150] "Beneficiary Focus Group 01 - Covid-19 Institute Support Fund.", "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE).", "Beneficiary Focus Group 07 - World Class Laboratories Fund.".
[151] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE)."
[152] "Beneficiary Focus Group 05 - Support for Small, Specialist Institutions.", "Beneficiary Focus Group 02 - Doctoral Extensions.", "Beneficiary Focus Group 04 - BEIS Sponsored PSREs,".
[153] "Programme Management Interview 08", "Programme Management Interview 10".
[154] "Beneficiary Focus Group 02 - Doctoral Extensions."
[155] "Beneficiary Focus Group 04 - BEIS Sponsored PSREs."
[156] "Beneficiary Focus Group 01 - Covid-19 Institute Support Fund.", "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE).", "Beneficiary Focus Group 04 - BEIS Sponsored PSREs.".
[157] "Beneficiary Focus Group 07 - World Class Laboratories Fund."

monitoring format was helpful, and that autofill would be useful in future as well as aligning both financial and narrative reporting as these were separated.[158]

Variation in monitoring requirements

More detailed monitoring data was requested for the COVID-19 Institute Support Fund through the financial templates requested from research institutes. UKRI sought to gain a more granular understanding of the types of grants impacted by COVID-19, as well as the precise nature of additional costs incurred by UKRI-funded institutes as they formulated their own response to COVID-19. Therefore, the reporting template asked for details about how the money was spent, but also narrative points describing current and future activity as well as a section about how the fund was used to support EDI matters. Once submitted, UKRI would ask for clarification on points which were unclear and if there were signs that the data was incorrect. The institute's board or director had to sign off to confirm the information was correct.[159]

The PRSE interventions did not include any formal monitoring processes, although institutions involved in the scheme did undertake bespoke monitoring where appropriate. For the Met Office, BEIS was informed through additional meetings with the Head of Finance and Head of Aviation where evidence would be presented on the status of the aviation market, such as flight data. For the UKAEA, the aim was just to keep its facilities open and as such no specific evaluation took place. Similarly, the funding for NPL was intended to ensure they had sufficient liquidity to continue operation and ensure retention of scientists; no formal monitoring or evaluation was viewed as necessary.[160] For the Specialist Institute Fund, no formal monitoring processes were in place but informal feedback was transferred through the institution engagement manager which supported the three institutions in receipt of support from the fund.[161]

Given that the interventions were not designed intentionally as a suite of connected and complementary intentions from the beginning, their monitoring requirements and formats vary. Variation is also likely due to the differing nature of the interventions, which require different levels of granularity for monitoring.

It should be noted that this evaluation has not undertaken an assessment of whether the bespoke monitoring requirements for each intervention were proportionate and appropriate.

[158] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE)."
[159] "Programme Management Interview 05"
[160] "Programme Management Interview 08"
[161] "Programme Management Interview 10"

More data collection at the design stage of the CoA may have been more useful than high demands of retrospective reporting. The CoA intervention monitoring aimed to be light-touch and require little input from ROs, especially at the beginning of delivery. At the end of the intervention, final reports had to be submitted by the institutions in receipt of support with information on which projects had received support, EDI information and where changes had been made from the original planned distribution of funding. It was suggested by one interviewee that greater engagement with ROs during the earlier stages of the intervention would have been beneficial, particularly around the novel terms and conditions and the reporting requirements. Webinars, for example, could have been useful to identify immediate questions and concerns, and make sure that ROs understood the terms and conditions and ultimate monitoring requirements for the funding.[162]

3.5 Timeliness of interventions and consequences on organisational decision-making

The approval processes were a common factor that slowed down the announcement of interventions, although efforts were made to streamline these where possible, for example through the fast-track clearance process. Although interventions aimed to be designed and delivered at pace some aspects slowed down their delivery. In addition to delays as a result of approval by Number 10 and HMT (discussed in section 2.3), approval processes within and in between BEIS and UKRI were also time-consuming across the different interventions.[163] This was particularly apparent for tasks that could only be executed by certain individuals, as bottlenecks were created when these were absent due to sickness or other commitments.[164] Where interventions cut across multiple policy teams, these were sometimes held up by wider debates. This was the case when establishing the clearance agreement for SURE.[165]

Efforts were made to streamline approval processes and maximise efficiency.[166] BEIS designed a fast-track clearance process to test compliance, speeding up processes that would usually have taken six months down to two to three weeks. This entailed bypassing some processes that are usually undergone before spending public money, such as checking for double counting and if the right accountabilities and assurances have been covered.[167]

For future emergencies, DSIT stakeholders believe that it would be useful to develop a standardised streamlining of processes for emergency situations, informed by lessons from the COVID-19 stabilisation interventions.[168] With lessons and mechanisms that were tested

[162] "Programme Management Interview 02"
[163] "Programme Management Interview 06"
[164] "Programme Management Interview 01", "Programme Management Interview 06".
[165] "Programme Management Interview 01"
[166] "Programme Management Interview 05"
[167] "Programme Management Interview 01"
[168] "Programme Management Interview 02"

during the pandemic, UKRI and DSIT stakeholders believe that they are more prepared to handle the risk of crisis.[169]

The complexity of intervention terms and conditions and the volume of queries further slowed down implementation. The complexity of terms and conditions, alongside the high volume of queries coming from the sector, were other factors that affected the speed at which interventions could be designed and delivered.[170] The example in the box below describes how factors affected the timelines of the CoA intervention. Where interventions were delayed, this resulted in reduced timescales for institutions to respond to the invitation and for UKRI to analyse the information received in applications.[171]

Time-consuming factors affecting the design and delivery of the CoA

For the CoA, all grants had to be set up manually and, for funding to be delivered, each organisation had to submit a governance plan for approval, in some cases requiring amendments. These processes were time consuming for the operations team, and managing compliance with the terms and conditions, as well as dealing with related consequences was time-consuming and challenging at times.[172] The funding was delivered with a complicated set of rules which were difficult to enforce as they were not always understood by ROs, and the terms and conditions were updated multiple times in light of new challenges presented as the pandemic evolved. This, in addition to the unpredictable nature of the situation, resulted in a large number of questions from ROs. Answering these questions required a considerable amount of additional work and due to time limitations, some questions were not attended to until the reconciliation phase.[173] Due to the lack of financial forecast information, the financial management involved in this intervention was challenging. The grants were based on a profile that was provided at the start of the scheme, and it was difficult to know if it matched reality. In this regard, it may have been easier to pay grants on a claims basis, but this was not possible through the systems used. Closedown and reconciliation of the grants was also time-consuming due to the unique nature of the scheme.[174]

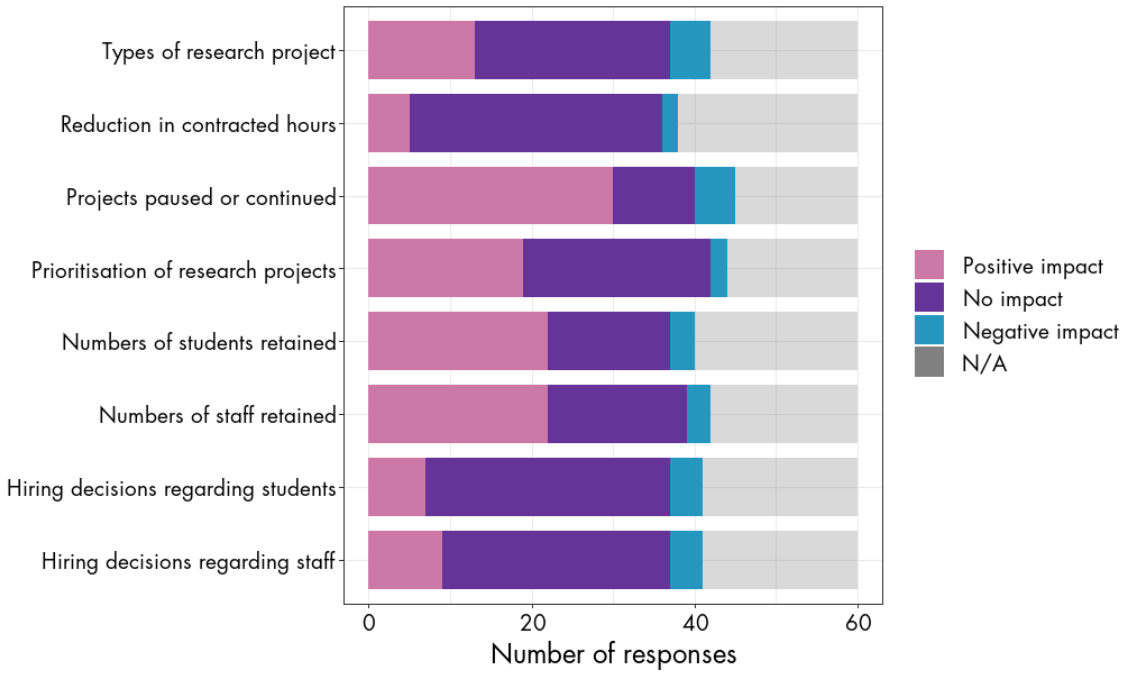
Processes were made more efficient through effective collaboration and new communication channels between BEIS and UKRI. Communication between BEIS, UKRI, RE and others involved in the design of the interventions slowed down their announcement. Efforts were made to streamline the processes and create effective communication channels with regular interaction. For the WCL fund, the working relationships between contacts working within the infrastructure teams within RE and UKRI, as well as with intermittent engagement with BEIS, were reported as particularly beneficial for working under short deadlines and making sure the fund was delivered in time. Instead

[169] "Programme Management Interview 08", "Programme Management Interview 02".
[170] "Programme Management Interview 05", "Scoping Interview 02.", "Programme Management Interview 02".
[171] "Programme Management Interview 05"
[172] "Programme Management Interview 02"
[173] "Programme Management Interview 07"
[174] "Programme Management Interview 07"

of asking for formal approval at every step of the design and delivery, RE were able to act at a faster pace through more informal mechanisms and in partnership with UKRI and BEIS.[175] It was reported that these structures set good examples for future ways of working and should be retained in future.[176] Overall, there appears to be consensus among those involved in delivering the interventions that they were delivered in a relatively timely manner compared to business as usual.[177]

The timeliness of interventions partially mitigated the effects of the pandemic on research activity and capacity. The RAND Europe survey aimed to assess the impact of the timing of intervention funding on research capacity and activity. As shown below in **Figure 10**, the timing of delivery of the intervention was perceived to have a particularly positive impact on limiting the number of research projects paused or cancelled. The timeliness of interventions was perceived to have a positive impact on staff and student retention, but a limited impact on hiring decisions or the reduction of contracted hours.

Figure 10. How did the timing of the delivery of the intervention(s) impact the following?



Source: RAND Europe survey of institutional leadership

[175] "Programme Management Interview 09"
[176] "Programme Management Interview 01", "Programme Management Interview 02", "Programme Management Interview 06", "Programme Management Interview 04".
[177] "Programme Management Interview 02", "Programme Management Interview 05", "Programme Management Interview 10", "Programme Management Interview 06".

Institutions in receipt of interventions felt that their timeliness varied. Several institutions felt that receiving the interventions earlier would have worked better,[178] whereas for others timeliness was viewed as good.[179]

- Those in receipt of the PSRE intervention highlighted that BEIS organisational machinery worked well to make rapid decisions.[180]
- Those in receipt of the WCL fund stated that the timing was good, supporting institutions to upgrade equipment and increase institutional research capacity. For example, upgrades to equipment meant that a greater number of samples could be processed, increasing throughput and supporting research activity at a time when lab access was often limited.[181]
- Those in receipt of the CISF and Medical Charity ECR Fund also felt that the money was administered quickly.[182]
- For SURE, although it was felt that timing could have been slightly earlier, it was understood that the intervention design required time with one participant highlighting the timing worked well as it enabled their institution to best utilise the funding.[183]

On the other hand, institutions in receipt of DE did state that the timing created challenges as the money was received close to final year students completing their PhDs.[184] The intervention was also announced at a busy time for institutions which created additional challenges.[185] Participants within the SURE focus group also stated that a rolling programme as opposed to a hard cut-off for applying for support might have increased uptake by allowing institutions to apply for funding when they were ready.[186]

3.6 Adaptability of interventions in an evolving context

The adaptability of the interventions was facilitated by allowing institutions flexibility in how they used the funds. To enable adaptability of interventions with changing needs, UKRI and BEIS allowed a high degree of flexibility to receiving institutions in their use of funding.[187] It was deemed that ROs would be best placed to make judgements about what research and which researchers would be in most need of funding. This flexibility enabled

[178] "Beneficiary Focus Group 02 - Doctoral Extensions.", "Beneficiary Focus Group 05 - Support for Small, Specialist Institutions.", "Beneficiary Focus Group 08 - National Academies.".
[179] "Beneficiary Focus Group 04 - BEIS Sponsored PSREs.", "Beneficiary Focus Group 07 - World Class Laboratories Fund.".
[180] "Beneficiary Focus Group 04 - BEIS Sponsored PSREs."
[181] "Beneficiary Focus Group 07 - World Class Laboratories Fund."
[182] "Beneficiary Focus Group 03 - Medical Research Charity ECR Fund.", "Beneficiary Focus Group 01 - Covid-19 Institute Support Fund.".
[183] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE)."
[184] "Beneficiary Focus Group 02 - Doctoral Extensions."
[185] "Beneficiary Focus Group 02 - Doctoral Extensions."
[186] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE)."
[187] "Sector Body Interview 07.", "Sector Body Interview 05.".

ROs to deploy the funding as needed,[188] and better target areas of importance to the institution where they had greater insight, for example EDI.[189] Examples across the interventions include adaptability after the initial funding period. Institutions proposed other projects where better suited, or if activities didn't work as anticipated,[190] the loan period for SURE was extended,[191] and disciplines often excluded from infrastructure-type funding such as the humanities and social sciences were supported.[192] Adaptability was also exemplified in terms of process with the mitigations brought in regarding the REF 2021 exercise (see box below). Across the interventions, the level of flexibility granted was generally appreciated by the sector and believed to have made possible spending of funds towards research and researchers where it was most needed.[193]

REF 2021 COVID-19 mitigations[194]

To support universities in the final stages of the REF submission preparation, the four higher education funding bodies that conduct the REF (RE, the Scottish Funding Council, the Higher Education Council for Wales, and the Department for the Economy, NI) agreed a set of contingency measures for REF submission preparation.[195] These decisions were informed by advice from expert panels and engagement with the HE sector and partners between April and July 2020. In addition to changes to the overall timetable where submission was delayed by four months, mitigations included:

- an allowance to submit outputs that were delayed due to COVID-19, and extension of the existing process to remove output requirements where there were mitigating staff circumstances to incorporate COVID-19 related impacts.
- options to provide explanatory text to the assessing panels on affected outputs and impact case studies.
- additional text submission to describe the effects of COVID-19 on the institution's environment for supporting research and enabling impact.

A further set of contingency arrangements were introduced in January 2021 aimed at supporting HEIs in the final stages of submission preparation. These included additional flexibility around the audit process and submission of corroborating

[188] "Beneficiary Focus Group 05 - Support for Small, Specialist Institutions."
[189] "Sector Body Interview 05."
[190] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE).", "Beneficiary Focus Group 01 - Covid-19 Institute Support Fund.".
[191] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE)."
[192] "Beneficiary Focus Group 07 - World Class Laboratories Fund."
[193] "Sector Body Interview 06.", "Sector Body Interview 05.", "Sector Body Interview 03.", "Sector Body Interview 01.", "Beneficiary Focus Group 07 - World Class Laboratories Fund.", "Beneficiary Focus Group 05 - Support for Small, Specialist Institutions.".
[194] This information was compiled by UKRI and submitted to RAND Europe: "Internal Document - UKRI Teams - Existing Processes - 'REF 2021 Covid Mitigations," n.d.
[195] "Guidance on Revisions to REF 2021" (Research Excellence Framework, July 2020), https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.ref.ac.uk%2Fmedia%2F1419%2Fguidance-on-revisions-to-ref-2021.docx&wdOrigin=BROWSELINK.

evidence for impact case studies, allowing HEIs to request a six-week extension for their narrative submissions and a six-week extension to provide corrections to submission errors. In addition, the funding bodies put in place a mechanism to review any emergency requests for an individual extension to the submission deadline.

Effectiveness of mitigations

As part of a feedback-gathering exercise on REF 2021, submitting institutions were asked to comment on the impact of COVID-19 on their preparations for REF 2021 and the effectiveness of the mitigations put in place by the REF team. Around 80% of institutions that responded stated that COVID-19 had had a negative or extremely negative impact on their REF preparations, while 20% reported no impact. Over 75% of respondents stated that the mitigations put in place by the REF team were effective, particularly the extended deadlines and the opportunity to submit COVID-19 mitigating statements. Of the small number (ca. 10%) of respondents who did not find them effective, several suggested that a longer extension would have been more effective, while others noted that the extended deadline meant that REF preparations occupied staff time for a longer period.

Although the flexibility granted to institutions for funding use was appreciated, there were still cases where further flexibility was desired. An example of this was the terms and conditions of CoA, which were found to be a barrier to using the funds innovatively. Survey data revealed increased flexibility as one of the most cited areas of future improvement among receiving institutions, mentioned by 25% of survey respondents (9 out of 36). Of these respondents, 6 referred to flexibility as giving institutions more decision power in how to allocate funds. This feedback was supported by claims that institutions are best placed to identify themselves where funding is needed, and that applying too many restrictions on how the interventions should be used limited their effectiveness. Evidence suggests that this was primarily a challenge in the CoA fund. One institution described that the formula for the CoA funding meant that institutions were expected to give out funds in proportion to "*a research council funding profile but that was very different to the profile of research council grants that needed support during the pandemic*". This restriction made it difficult for the institution to allocate the funds and resulted in underspend and returned funding even though there were affected grants that could have benefited from support.[196] Sector body interviews reinforced the stance that more flexibility would have been desirable, especially in the CoA. The lack of agility in the CoA resulting from its restrictive terms and conditions was described as having prevented institutions to be more innovative in their approach to spending the funding (see box below for detailed information about the flexibility of CoA).[197]

[196] "RAND Europe Survey."
[197] "Sector Body Interview 07.", "Sector Body Interview 03.".

Why and how more flexibility may have improved suitability of the CoA intervention

In developing the CoA intervention, much time was invested in establishing the appropriate terms and conditions, which later had to be adapted to accommodate changes in circumstances. Additionally, UKRI aimed to keep the intervention light-touch for the universities through limited monitoring requirements. These factors limited the ability to adapt the intervention in an agile manner due to limited information captured initially. Some accounts suggest that the intervention would have been more suitable with a more flexible approach and with more resources spent on real time and rapid data collection to adapt the intervention accordingly. Given the lack of information available on CoA, more detailed end of year reporting requirements were introduced which were deemed burdensome by some institutions, as mentioned in section 3.4.[198]

Based on the CoA example, interventions may have benefitted from more resources and efforts placed on ongoing monitoring and adaptation rather than the initial design prior to launch given the volatile environment.

Interventions differed significantly in their ability to adapt to the evolving context. The urgency of responding, paired with limited data availability, and the requirement to create novel terms and conditions at pace, led to challenges in adaptability. A key challenge in the design of the interventions was working with the uncertainty of the pandemic. This challenge was further compounded with the urgent need for response to the impact of COVID-19. Whilst some interventions were inherently adaptable, others were less agile. A comparison of the DE and the SURE fund below illustrates the difference in ability of DE and SURE to be agile.

Case study 2: adaptability of interventions

Context

The SURE fund was a novel intervention aimed at supporting HEPs to plug gaps in income from international students to ensure sustained research activity, whilst the DE was based on an existing funding mechanism of doctoral funding where extensions were provided to ensure that doctoral students negatively affected by the pandemic would be supported and able to complete their doctorates. The interventions had different mechanisms of actions but were underpinned by common objectives of sustaining research activity and capacity.

The DE intervention adapted continuously through its phased approach.

The DE intervention demonstrated continual adaptation to the unfolding pandemic, highlighted by the changes across the three phases. Across the different phases of the

[198] “Sector Body Interview 03.”, “Sector Body Interview 05.”.

intervention, funding was offered on a case-by-case basis. As support was not necessarily applied for by all eligible students, this flexible approach meant that funding was able to be repurposed for additional extensions for those most in need.[199] Moreover, when announcing Phase 1 of the intervention, UKRI committed to reviewing the policy every 4 months. This review was led by a steering group and included an Equality Impact Assessment (EIA) which concluded that the policy was not reaching all those in need. These findings informed the expansion of the policy's scope in Phase 2, where three-month extensions were offered to students in their penultimate year, and emphasis was placed on supporting students with disabilities, long-term illness, neurodivergence, as well as those with caring responsibilities, given that they had been particularly affected by the UK Government's economic and health measures. In Phase 3, the scope was extended further to all students whose work was impacted, and who were unable to complete their research.

SURE was not agile in its design and struggled to pivot in light of the evolving impact of the pandemic.

In contrast to the Doctoral Extension Allocation intervention, the lengthy approval required for SURE made it challenging to adapt the intervention in response to the evolving impact of the pandemic. Over the course of the policy design, the expected reduction in the number of international students was not as significant as originally anticipated,[200] and the intervention was not adapted to reflect this new information.[201] One interviewee described the final SURE fund intervention relative to the problem it aimed to address as 'using a sledgehammer to crack a nut'.[202] This inability to adapt to changing circumstance in the sector was in large part due to the lengthiness of the negotiations between UKRI, BEIS, HM Treasury, and No. 10.[203] It should be noted that these negotiations were necessary to meeting the requirements for public money management and reflected both the anticipated size and novelty of the intervention.

Key lessons learnt

The DE intervention was able to pivot and respond to beneficiary needs with lessons informing design as the intervention developed.[204] Flexibility in processes could be helpful when developing new interventions. This could entail thresholds of approvals required depending on the nature of changes or monetary implications through the duration of the fund or by taking a phased approach to the funding. More adaptability may have allowed the sector to take up the intervention and utilise it to fulfil their diverse needs. Alternatively, another model to consider may be establishing smaller, agile, and

[199] "Further Action to Support Doctoral Students Affected by COVID-19," February 22, 2021, https://www.ukri.org/news/further-action-to-support-doctoral-students-affected-by-covid-19/.
[200] "UKRI and BEIS Management Information."
[201] "Scoping Interview 02."
[202] "Scoping Interview 02."
[203] "Scoping Interview 02."
[204] "Internal Validation Workshop."

discrete pots of funding equivalent to DE and CoA, that would negate the need for lengthy negotiations and approvals, however this would be a trade-off where more resources would be needed to establish multiple interventions creating a larger administrative burden.

There were instances where monitoring data was less utilised in terms of informing ongoing intervention design and adaptability. In some cases, this was due to interventions relying on predetermined formulas for allocation, such as WCL, or due to data becoming available too late in the process. Monitoring data from interventions, though intended to be used to adapt interventions, was not always utilised. Some interventions with multiple funding rounds based their formulas on other factors, such as the WCL fund where the second and third funding rounds were designed based on place-based data.[205] Some interventions were one-off occurrences, developed and delivered all at once, with little to no adaptation,[206] or in the case of CoA, monitoring data was collected at the end of the funding round and did not feed into further design.[207]

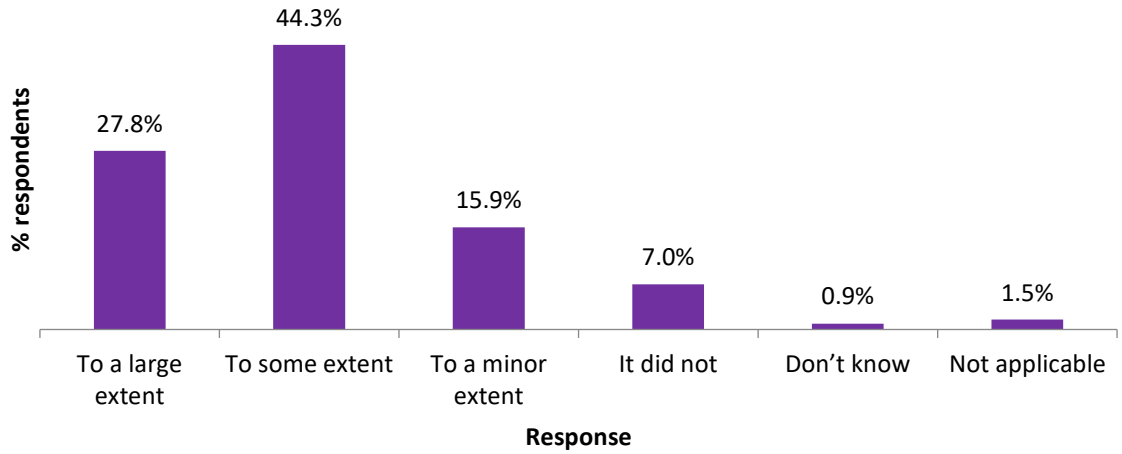
3.7 Support for unmet needs

The stabilisation interventions were positively received by the sector providing much needed support and reassurance at a challenging time. From the perspective of BEIS, UKRI, sector stakeholders and large proportion of the recipients, the majority of interventions were positively received by the research sector. Across the interventions those involved in their delivery reported appreciation from receiving institutions as the support allowed institutions to address their most pressing needs.[208] Stakeholders from sector bodies and institutions in receipt of support also echoed the view of BEIS and UKRI that the interventions were generally effective in meeting the needs of the sector and were met with gratitude.[209] 88% of the RAND Europe survey respondents had a positive or somewhat positive sentiment with regards to the interventions. Focus group participants suggested that the interventions offered short-term, immediate relief to the impact of the COVID-19 pandemic,[210] helped to plug gaps in terms of funding,[211] and supported research activities.[212] Another benefit that was highlighted was the clear signal that the support gave

[205] “Programme Management Interview 09”
[206] “Programme Management Interview 05”
[207] “Programme Management Interview 02”
[208] “Programme Management Interview 09”, “Programme Management Interview 04 “, “Programme Management Interview 05”, “Programme Management Interview 08”, “Programme Management Interview 10”.
[209] “Sector Body Interview 07.”, “Sector Body Interview 06.”, “Sector Body Interview 04,”, “Beneficiary Focus Group 01 - Covid-19 Institute Support Fund.”, “Beneficiary Focus Group 05 - Support for Small, Specialist Institutions.”, “Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE).”, “Beneficiary Focus Group 02 - Doctoral Extensions.”, “Beneficiary Focus Group 03 - Medical Research Charity ECR Fund.”, “Beneficiary Focus Group 08 - National Academies.”.
[210] “Beneficiary Focus Group 01 - Covid-19 Institute Support Fund.”
[211] “Beneficiary Focus Group 05 - Support for Small, Specialist Institutions.”, “Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE).”.
[212] “Beneficiary Focus Group 01 - Covid-19 Institute Support Fund.”

in terms of the importance of research, and the researchers themselves.[213] Even though the pandemic was extremely challenging for the sector, sector body stakeholders reported that institutions were able to function with the support of the interventions.[214] The interventions helped the research sector retain research staff and continue research activity (further detailed in section 4.1). In the Vitae Wave 3 survey conducted 44.3% of participants agreed that the interventions were appropriate to meeting their needs as a researcher, and 27.8% agreed to a large extent.[215]

Figure 11. To what extent do you agree that the intervention(s) were appropriate to meet your needs as a researcher?

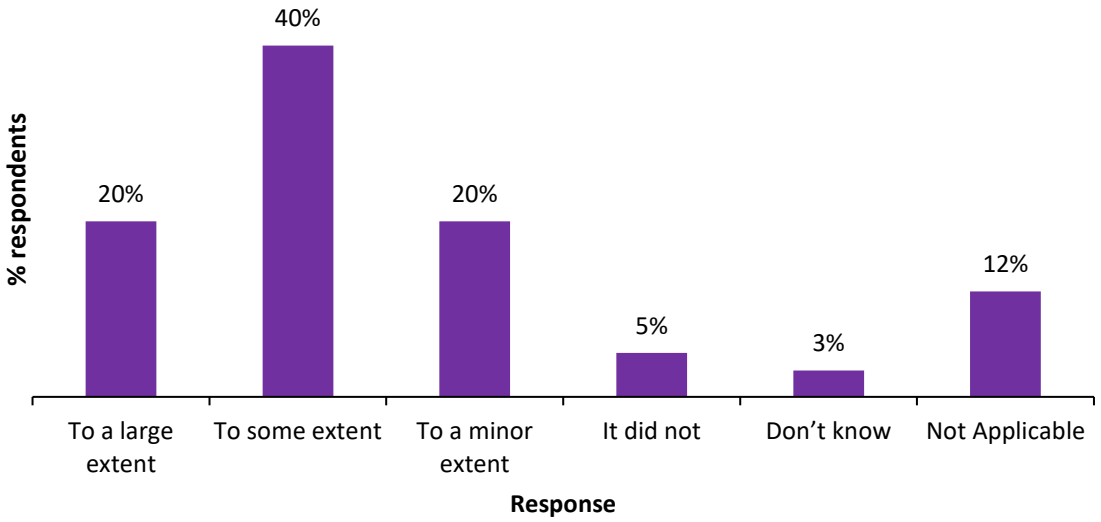


Source: Vitae wave 3 survey

In terms of unmet needs, it was felt that some parts of the ecosystem were less supported by the interventions. This included certain disciplines, heavily impacted by the pandemic, as well as institutions that were less a focus for the larger interventions. As shown in Figure 12, the results of the RAND Europe survey showed large variation with regards to the extent to which needs were met. A large proportion, 60%, stated that their needs were largely met or met to some extent. However, there were several areas where it was felt more support would have been welcomed.

[213] "Beneficiary Focus Group 03 - Medical Research Charity ECR Fund.", "Beneficiary Focus Group 02 - Doctoral Extensions.", "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE).".
[214] "Sector Body Interview 06."
[215] Vitae "Ongoing impact of the Covid-19 pandemic on researchers and research, Wave 3", 2023

Figure 12. To what extent do you agree that the intervention(s) met the needs of research organisations and/or researchers?



Source: RAND Europe survey of institutional leadership

Firstly, certain groups of staff and students were viewed as more impacted by the pandemic and even within a cohort of students, the impacts on individual students may be vastly different. One example is students relying on fieldwork, who were more heavily impacted by the pandemic and resulting lockdowns.[216] PhD students, as well as ECRs, were described as negatively impacted in terms of progress.[217] Although certain interventions specifically targeted ECRs, institutions still felt that this group was vulnerable to the impacts of COVID-19. According to the RAND Europe survey, doctoral students, postdoctoral researchers, and fixed-term staff remained difficult to protect and were in some cases not retained in the research workforce.[218] The time offered by the interventions was highlighted as not always equating to the time lost.[219]

Secondly, it was felt that certain institutions were not as considered during intervention design as others. For example, some interventions such as SURE were viewed as perhaps better suited to large, more research-intensive institutions as opposed to small specialist institutions. [220] Although this gap was somewhat mitigated through the SIF, this support did not fill the apparent need as multiple institutions within the RAND Europe survey expressed a wish for more targeted support for smaller, more specialist institutions.[221] More could have been done to tailor to the needs of different types of institutions. Institutions that

[216] "Beneficiary Focus Group 02 - Doctoral Extensions.", "Beneficiary Focus Group 08 - National Academies.".
[217] "Beneficiary Focus Group 05 - Support for Small, Specialist Institutions.", "Beneficiary Focus Group 08 - National Academies.".
[218] "RAND Europe Survey."
[219] "UKRI and BEIS Management Information."
[220] "Sector Body Interview 06.", "Sector Body Interview 02.", "Beneficiary Focus Group 05 - Support for Small, Specialist Institutions.".
[221] "RAND Europe Survey."

received the WCL fund intervention also highlighted that the maintenance of existing equipment and associated funding requirements were not considered (and are typically not considered) in infrastructure support.[222]

Sector body stakeholders felt that many interventions focused on UKRI funded research, while non-UKRI funding was lower priority and could have benefited from more support.[223] This was also raised by institutions themselves in the RAND Europe survey as an issue they experienced.[224] One sector body stakeholder raised that technical staff felt less supported by the interventions.[225] Overall, multiple sources suggest that UKRI and BEIS could develop a broader perspective of the research sector and implement this into policies to support the research ecosystem as a whole.[226]

Finally, whilst the interventions were successful in offsetting many of the immediate challenges experienced by institutions, it was felt that more support was required in order to mitigate the longer-lasting impact of the pandemic.[227]

[222] “Beneficiary Focus Group 07 - World Class Laboratories Fund.”
[223] “Sector Body Interview 06.”, “Sector Body Interview 04.”, “Sector Body Interview 02.”.
[224] “RAND Europe Survey”
[225] “Sector Body Interview 05.”
[226] “Sector Body Interview 06.”, “Sector Body Interview 04.”, “Sector Body Interview 02.”.
[227] “RAND Europe Survey.”, “Beneficiary Focus Group 01 - Covid-19 Institute Support Fund.”.

4. Early-impact evaluation

The aim of the early-impact evaluation is to capture emerging evidence to determine the impact of the stabilisation interventions, and to explore the extent to which the interventions have achieved their intended aims of supporting and stabilising the research system. The analysis is primarily focussed on the suite of interventions as a collective.

4.1 Research capacity

This section discusses the impact of the COVID-19 pandemic, and the mitigations offered by the stabilisation interventions on research capacity reviewing staffing level trends and wellbeing. Based on the available data, determining the direct impact of the interventions on research capacity is limited, therefore datasets have been utilised to highlight the impact of the pandemic more widely, and the contribution of interventions has been flagged where possible.

Lockdown restrictions limited access to research facilities which impacted early career and STEM researchers in particular, due to the nature of access they required. A significant contributor to reductions in research capacity was the limited access to research facilities due to lockdown restrictions. This presented a significant challenge for researchers, in particular early-career researchers and STEM disciplines, who more heavily rely on research facilities and were therefore less able to continue working from home when access to infrastructure was limited. This is reflected in observed alterations to researcher working hours during the pandemic. The Vitae Wave 1 survey, conducted between 26th May and 9th June 2020, showed that lockdown had varying effects on the working hours of researchers at ROs. Out of the 8,416, respondents, around 40% reported a decrease in total working hours and 20% reported an increase. Overall, this entailed a reduction in working hours of 10% during lockdown compared to pre-COVID. The change in working hours varied depending on researcher seniority, with early-career researchers being more likely to report a decrease while senior researchers were more likely to report an increase.[228]

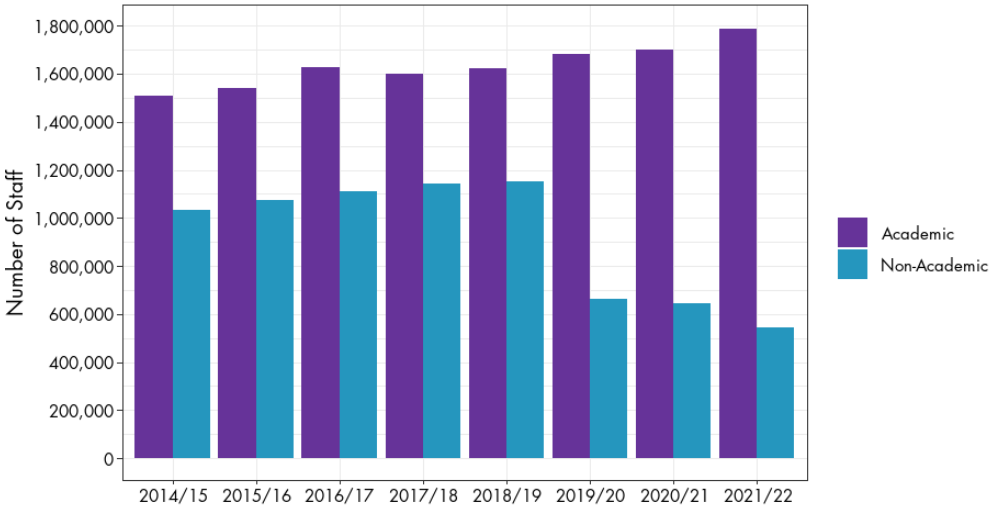
Lockdown restrictions affected researcher wellbeing and impacted productivity. In addition to lockdown restrictions impacting research capacity, the pandemic significantly impacted staff with respect to wellbeing and productivity, professional development and future plans.[229] Staff also reported increased workloads and impacts on job performance, with younger staff in particular reporting an adverse impact on their professional and career

[228] "UKRI and BEIS Management Information."
[229] Kassem, R. 2022. How did COVID-19 impact staff in UK higher education? Accessed on https://www.hepi.ac.uk/2022/10/04/how-did-covid-19-impact-staff-in-uk-higher-education/", "Internal Validation Workshop.".

development plans.[230] Many doctoral students reported a decrease in output due to low productivity attributed to a lack of motivation, lack of suitable home-working equipment, distractions in the home, as well as feelings of being isolated from supervisors and other doctoral students. The SMaRteN survey reported that feelings of loneliness and isolation, disruption of routines, anxieties about the future, lack of social interaction and anxieties about COVID-19 infection for themselves and family members, were factors reported to cause mental health issues. In a UKRI survey on the first phase of the doctoral extension policy, 'lack of access to research resources and facilities' was the most cited reason for requesting extensions (mentioned by 74-76% of doctoral students). The next most common reason was 'interruption of data collection and/or fieldwork' (41-54%), followed by 'health and wellbeing' reasons (34-36%).[231]

Academic staffing was broadly maintained during the pandemic, in part due to the intervention support amongst other support levers in place within institutions. To assess the scale of impact of the pandemic on staff retention and overall capacity at universities at a high level, staff numbers were reviewed across HEIs before and during the pandemic. As shown below in 13, it appears that the pandemic did not have an adverse impact on academic staff totals but highlighted a drop in non-academic staff.[232] It is likely that what appeared to be a significant reduction in non-academic staff is being inflated due to HESA reporting no longer asking for these numbers to be reported form 2019/20 onwards, which coincides with the drop. Therefore, any reductions are likely being masked.

Figure 13. Staff numbers 2014/2015 to 2021/2022



[230] Rasha Kassem 2022 How did COVID-19 impact staff in UK higher education? https://www.hepi.ac.uk/2022/10/04/how-did-covid-19-impact-staff-in-uk-higher-education/
[231] "UKRI and BEIS Management Information."
[232] HESA: Non-academic staff are defined as those that do not have an academic employment function. They include managers, non-academic professionals, student welfare workers, secretaries, caretakers and cleaners.

This observation is supported by interviews we conducted with sector body stakeholders, who remarked that COVID-19 did not significantly affect the retention of academic staff.[233] [234] [235] In addition, 52% of respondents to the RAND Europe survey indicated that the pandemic made no difference to research staff numbers, with 33% reporting a moderate to slight decrease in numbers of research staff, and 10% indicating an increase. This suggests that whilst there may have been variation in research staff numbers between institutions, overall, the levels of research staff across the sector were maintained during the pandemic at pre-pandemic levels. The ability to retain academic staff was partially attributed to the stabilisation interventions, with 51% of survey respondents indicating that staff levels would have declined in the absence of support. This was echoed by focus group participants where the support from interventions was highlighted as providing breathing room to institutions, allowing them to push back staff scaling decisions.[236]

Staff noted that it is too early to assess the impact of COVID-19 as well as the stabilisation interventions on staff retention, especially considering other impactful factors including the delays to the decision to associate or not with Horizon Europe, and the current cost-of-living.[237]

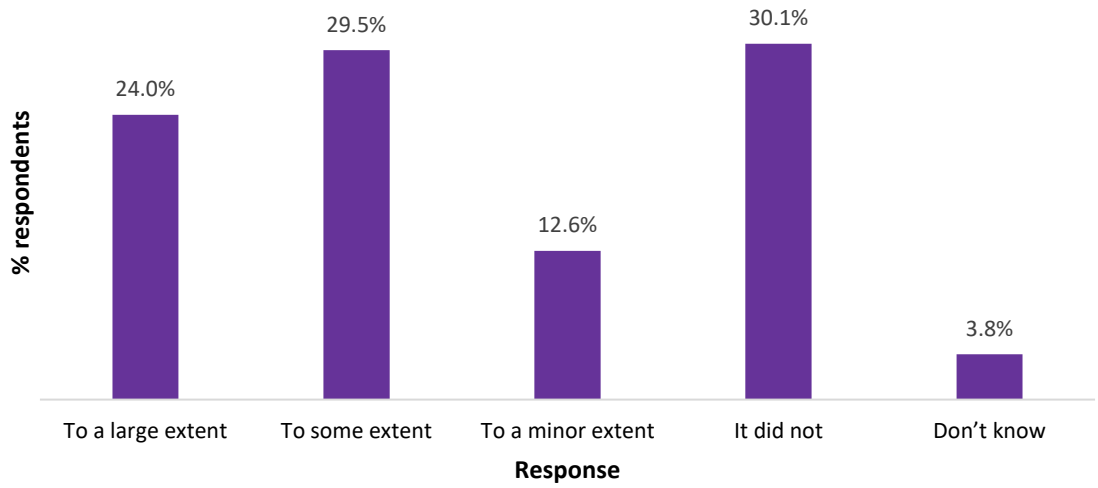
An important observation from the sector body interviews was that furlough was most commonly used by technical and service staff rather than research staff.[238] [239] This may have been due to a lack of understanding surrounding whether researchers were eligible for the furlough scheme.[240] Others noted that this was deliberate, as putting research staff on furlough would have had too damaging an effect on the research projects".[241] It was however noted within one focus group that greater clarity on the availability of different interventions and schemes, such as furlough, would have been welcomed.[242]

Interventions were seen to have played a role in supporting research capacity to some extent by targeted support for certain groups such as ECRs, and by providing a strong signal of the importance of research. As seen in below, RAND Europe survey results indicated that 68% of the respondents believed that the interventions received supported research capacity to a minor or some extent, with a further 18% holding the impression that the interventions supported research capacity to a large extent.[243] This was echoed by the Vitae Wave 3 survey where over half of respondents reporting that the

[233] "Sector Body Interview 02," n.d.
[234] "Sector Body Interview 06."
[235] "Sector Body Interview 07," n.d.
[236] "Beneficiary Focus Group 01 - Covid-19 Institute Support Fund," n.d.; "Beneficiary Focus Group 04 - BEIS Sponsored PSREs," n.d.
[237] "Sector Body Interview 06.", "Sector Body Interview 07.".
[238] "Sector Body Interview 07."
[239] "Sector Body Interview 06."
[240] "Sector Body Interview 07.", "Sector Body Interview 03.", "Sector Body Interview 02.", "Sector Body Interview 04.".
[241] "Sector Body Interview 02."
[242] "Beneficiary Focus Group 08 - National Academies."
[243] "RAND Europe Survey."

interventions had supported the continued employment of researchers and technical staff (Figure 14).[244]

Figure 14. To what extent did the interventions you received support the continued employment of researchers and technical staff within your research group?



Source: Vitae Wave 3 survey

Interventions supported researchers to stay in the field: for example, institutions in receipt of the Medical Charity ECR fund stated that a lack of funding within disease areas can result in challenges around ensuring staff retention and uptake. The intervention funding supported work in these areas to keep going, with the resulting impact that researchers were then able to apply for larger project grants.[245] One of the institutions in receipt of the PSRE support also highlighted that they didn't have to make staff reductions during the pandemic as a result of the intervention support.[246] Those in receipt of SURE support flagged several areas in which they had received support for maintaining the research workforce. This included development and training activities for researchers, support for researchers in applying for research grants, and sustained recruitment, which included the hiring of new staff and fixed term posts extended. One institution cited the loan as providing security to institution's cash flow position.[247] Those in receipt of the National Academy extensions also highlighted that there had been indications the intervention supported researchers to remain in research.[248] Finally, interventions indirectly supported research capacity too. For example, those in receipt of the WCL Fund stated that institutions having state of the art equipment can help with recruitment and retention.[249]

[244] "Vitae "Ongoing impact of the Covid-19 pandemic on researchers and research, Wave 3", 2023,"
[245] "Beneficiary Focus Group 03 - Medical Research Charity ECR Fund."
[246] "Beneficiary Focus Group 04 - BEIS Sponsored PSREs."
[247] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE)."
[248] "Beneficiary Focus Group 08 - National Academies."
[249] "Beneficiary Focus Group 07 - World Class Laboratories Fund," n.d.

Researchers worried the pandemic would impact job prospects, but recruitment largely remained unaffected. Data collected in 2020, during the COVID-19 pandemic and the period of the BEIS and UKRI research stabilisation interventions, found concerns among researchers that their career prospects would be negatively impacted by COVID-19, especially among early and mid-career researchers. The Wave 1 survey reported that over 50% of early and mid-career researchers, and 65% of staff on fixed-term contracts, felt their jobs were under threat because of the pandemic. These impacts continued in the Wave 2 survey in 2021, after many of the interventions had been administered, in which 59% of researchers predicted negative impacts of COVID-19 on their career, and 70% worried about their long-term career prospects. Women were also more likely to predict and worry about a negative impact than men.[250]

Furthermore, UKRI's engagement with the sector revealed concerns about career prospects of HE staff. A survey conducted by RE of research leadership at UK institutions, found that they were less willing to recruit staff into their first lecturing posts (12% of survey respondents), as well as recruiting more experienced staff (15% survey respondents). However, the majority disagreed that this has been the case (66%). In addition, 96% of survey respondents stated an increased or unchanged attitude to including studentships on grant applications.[251] Moreover, the RAND Europe survey revealed that where institutions has observed a reduced attractiveness of the UK research sector, this was attributed to other factors than COVID-19, such as Brexit.[252] Together these results indicate that attitudes towards recruitment were not drastically changed in light of the pandemic.

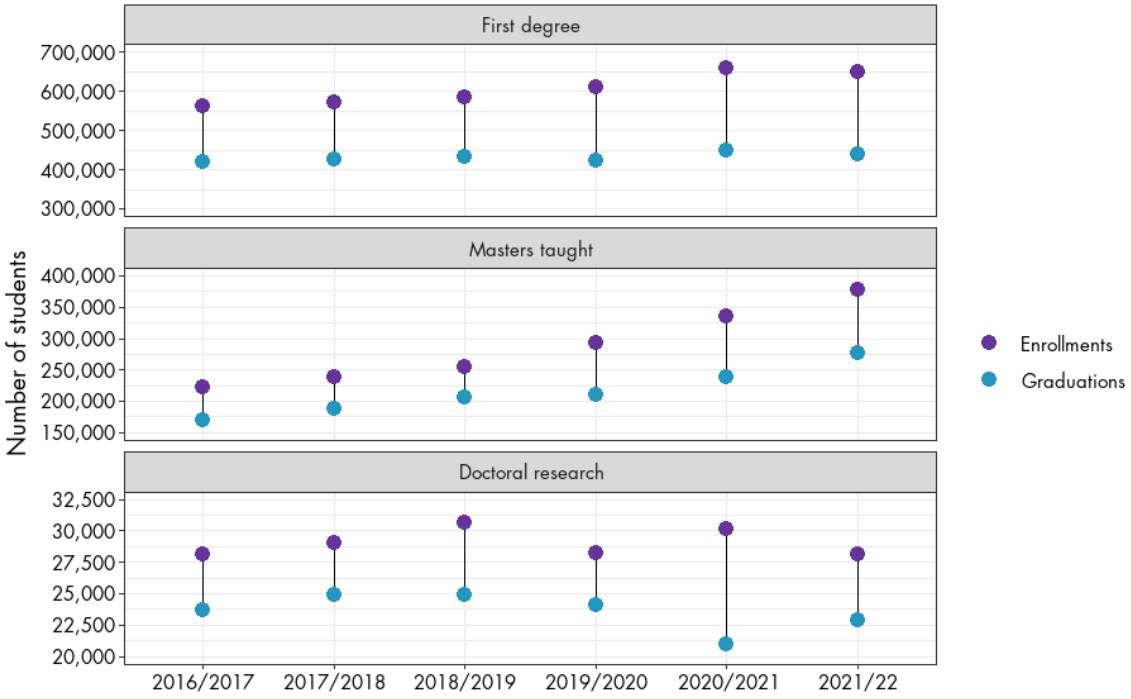
Grant extension allocations and doctoral extensions attempted to target early career researchers most in need but there was a drop in graduations. Against the backdrop of mental wellbeing and the challenges faced by researchers outlined above, UKRI attempted to address these issues by providing costed extensions to those most in need, advising grant holders to be generous and flexible to address students' needs, waiving the requirement for medical certificates to qualify for COVID-19 related sick leave. Generally, however, UKRI and BEIS encouraged students to seek additional support from their institutions under the assumption that research organisations are best placed to assess students' individual needs and advised institutions to be generous in providing necessary support. Interventions also supported researchers at particular career stages. For example, the CoA intervention prioritised extending grants for post-doctoral researchers near their contract end dates.[253] The fact that this intervention supported staff rather than just students was appreciated by the sector.[254] Students who re-purposed their research projects towards COVID-19 research were also supported by the interventions through costed extensions to support them with additional time to adapt their research. Overall, UKRI encouraged funding partners to prioritise supporting current students above the co-

[250] "UKRI and BEIS Management Information."
[251] "UKRI and BEIS Management Information."
[252] "RAND Europe Survey."
[253] "UKRI and BEIS Management Information."
[254] "Sector Body Interview 05."

funding of future studentships, even though this might result in reduced future studentships. Given that students' mental health is dependent on many different life aspects, not all related to doctoral research or COVID-19, it is difficult to estimate any isolated impacts of the various efforts by UKRI, BEIS and research organisations.[255]

These factors combined appeared to have an impact on doctoral programme enrolment and completion of programmes. As shown in Figure 15 below, we can determine that there was a drop in enrolments on doctoral programmes in 2019/20 academic years, and a drop in graduations in 2020/2021. This data is supported by RAND Europe survey findings, with 41% of responses indicating that there was a slight decrease in doctoral completion rates, and 16% reporting a significant decrease. Whilst it is difficult to draw conclusions as to the drop in enrolments from the HESA data alone, the drop in graduations may be due to delayed PhD work due to university closures, reflected in the number of extension requests to UKRI. The figure also shows that despite disruption to the HE sector as a whole, undergraduate and masters enrolments and graduations were not hindered by the pandemic, and in fact continued to increase year on year.

Figure 15. Doctoral programme enrolment and completion of programmes, HESA 2016/2017 - 2021/2022



Source: RAND Europe analysis of HESA data

Intervention and institutional support only partially mitigated the impact of the pandemic on doctoral students. There were mixed perceptions regarding the effectiveness of institutional support and interventions. In the RAND Europe survey, 14

[255] "UKRI and BEIS Management Information."

institutions (out of 17 who responded) reported that the interventions specifically helped many students complete their doctoral research. The doctoral extensions were particularly highlighted in this regard.[256] Accounts from student focus groups by NatCen revealed that students felt their mental wellbeing was impacted by burdensome application processes, and long waiting times for application outcomes. However, where UKRI granted a funded extension within a short amount of time, this had a positive impact on students' mental wellbeing who reported experiencing less reason for worrying and consequently reduced their stress levels.. Furthermore, whilst students appreciated the funded extensions, anxieties about the future remained due to the unpredictable and disruptive nature of the pandemic.[257]

The pandemic exacerbated existing research culture challenges impacting the willingness to remain in research. The COVID-19 pandemic highlighted the need for a healthier research culture in the UK to attract and retain researchers. PRES data showed a decline in satisfaction with research culture among doctoral researchers over the past three years, from 63% to 58%, with pressurised work environments and a lack of mental health support. Furthermore, mental health problems were the most frequently reported main reasons for considering leaving a postgraduate research degree.[258]

There was some evidence from focus groups that the interventions facilitated continuation in research. For example, one of the institutions used SURE funding to support ECRs through fellowships, enabling researchers to go on to secure independent funding or continue work with advisors.[259] Similarly, those in receipt of the Medical Charities ECR intervention stated that the interventions supported researchers to continue their work within the specific disease areas and, in some cases, secure additional funding.[260]

Research agenda

The interventions supported institutions to promote the importance of research and maintain their research agenda. As well as supporting specific research capacity, the interventions also supported institutions research agenda more broadly, particularly in light of the challenges faced by Brexit and the COVID-19 pandemic. Institutions in receipt of SURE stated that the funding to sustain research activity had been important in helping maintain the broader research agenda,[261] whilst those in receipt of the Medical Charity ECR fund highlighted that the support enabled them to raise the profile of research within their organisations.[262] The support also provided reassurance to early-career researchers that the government supported their activities and contributions to R&D.

[256] "RAND Europe Survey."
[257] "UKRI and BEIS Management Information."
[258] Pitkin, "2021 Postgraduate Research Experience Survey (PRES)."
[259] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE)."
[260] "Beneficiary Focus Group 03 - Medical Research Charity ECR Fund," n.d.
[261] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE)."
[262] "Beneficiary Focus Group 03 - Medical Research Charity ECR Fund."

4.2 Research activity

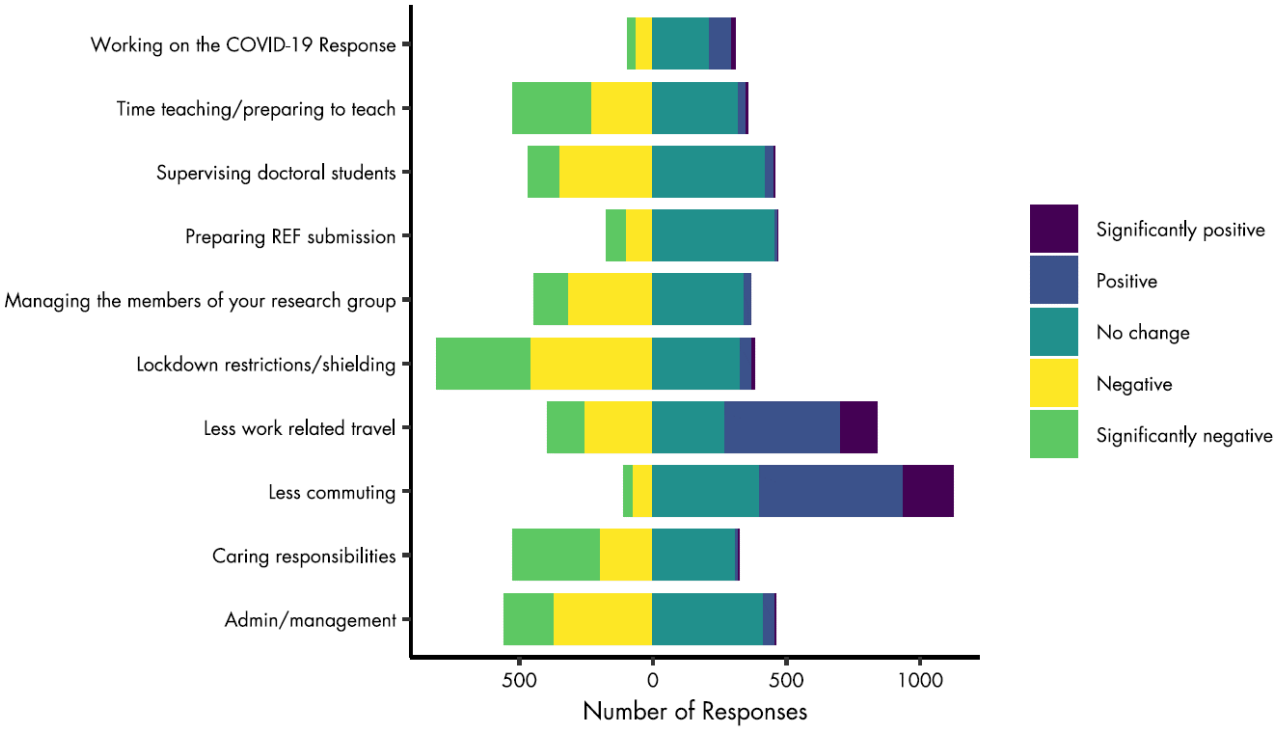
This section discusses the impact of the COVID-19 pandemic, and the stabilisation interventions, on the number and range of research projects directly supported by interventions and nature of their support. It also considers the proportion of research projects paused or cancelled. From the secondary data alone, determining the result of the interventions on these indicators of research activity is limited, and therefore we have used the data to speak to the impact of the pandemic more widely, and have related this to the interventions where we feel this is possible.

Despite the pandemic having a negative impact on the number of research projects paused or cancelled, the interventions were perceived to offer some mitigation against this. Of the institutional leadership surveyed by RAND Europe, 78% indicated that they observed a slight or significant increase in the number of projects paused or cancelled during the pandemic. Without the support provided by the interventions, 68% of those surveyed anticipated there would be a slight or significant increase to the number of project delays or cancellations. Many of the projects that were paused involved fieldwork especially that which involved travelling, and research involving face-to-face interaction, such as patient and participant dependent research.[263] Furthermore, increased flexibility in working patterns and exploration of new research directions were widely reported among student researchers, especially within medical and STEM disciplines. Doctoral students reported reorganising research activities due to COVID-19 restrictions, with greater time spent on analysis and report writing, attending training and academic events. Time spent on research activities that cannot be done from home decreased by almost 100% while activities such as writing papers and desk-based research increased.[264] Similar trends were reported in the RAND Europe survey.[265] Other changes in research activity which occurred to a lesser extent include increased publications output, improved cross-disciplinary working, faster sharing of research findings and data.[266]

The pandemic altered the type of research activities, with a reduction in laboratory work and increase in desk-based research and writing papers. Figure 16 below shows the findings from the Vitae Wave 2 survey, where researchers reported that the pandemic largely had a negative impact on time available for supervision, managing teams and teaching. However, spending less time on commuting and work travel was perceived as a significant positive consequence of the pandemic.

[263] "RAND Europe Survey."
[264] "UKRI and BEIS Management Information."
[265] "RAND Europe Survey."
[266] "UKRI and BEIS Management Information."

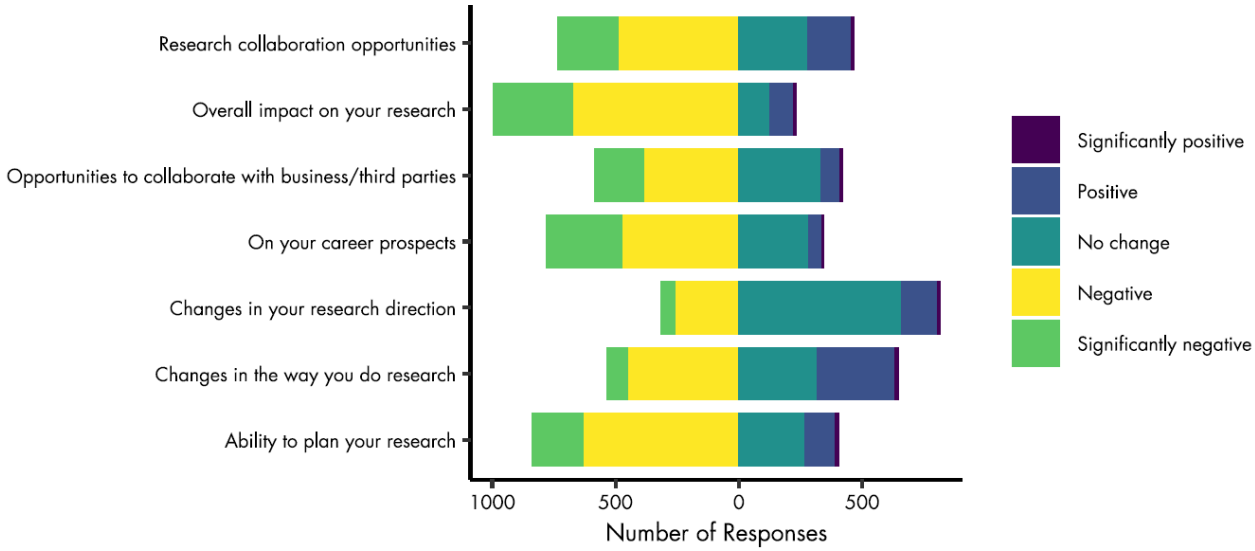
Figure 16. How have COVID-19 restrictions affected the following activities and time for research



Source: Vitae Wave 2 survey

As shown in Figure 17 below, the survey also highlighted that researchers were most concerned about the negative impact of COVID-19 over the next three years on their career prospects, their ability to plan research and collaborations. A large number felt that there wouldn't be any negative impact on the direction of their research and 50% of respondents felt that the way they do research wouldn't be affected at all or there would be a positive effect. This may be due to the pandemic providing unique research opportunities and funding for certain disciplines, who mobilised to contribute to the global effort of detecting, treating and preventing COVID-19 infection.

Figure 17. Consequences of current ways of working due to COVID-19 over the next three years

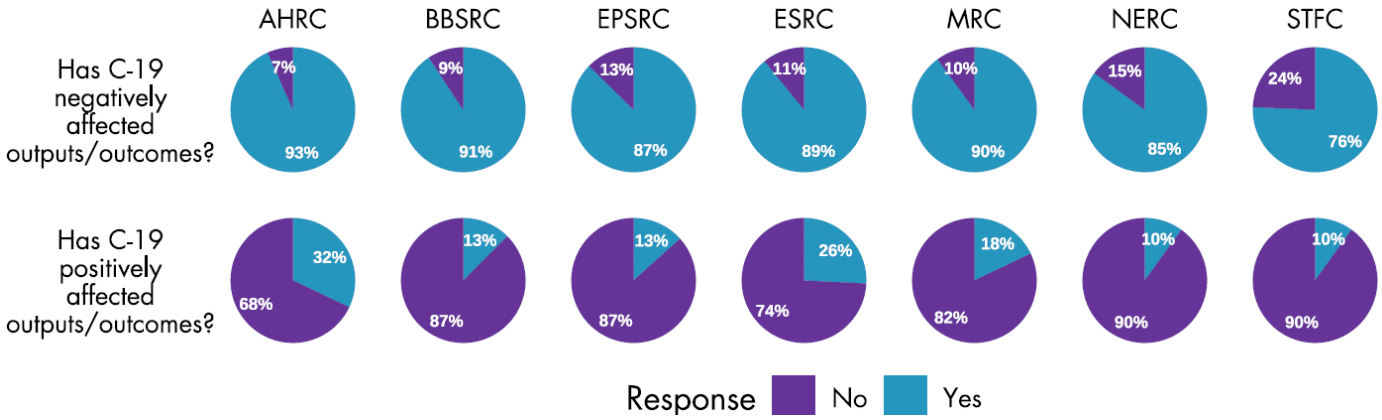


Source: Vitae Wave 2 survey

Researchers were also asked via Researchfish whether the COVID-19 pandemic had negatively affected their project's research outputs and outcomes, compared to what has originally been expected. Over 85% of respondents stated that there had been a negative impact (Figure 18), including impacts on project outputs and outcomes through delays to delivery, lower quality of outputs/outcomes, lower quantity of outputs/outcomes, and a lower variety of outputs/outcomes. Although more than 50% of respondents stated that a multitude of factors had impacted their research projects, the single most prevalent factor to impact research outcomes had been delays to delivery. The data provided through Researchfish cannot be linked to specific interventions within this evaluation, but it paints a picture of the impact of the pandemic on research activity overall providing contextual information for the interventions.[267] The Researchfish findings are further supported by the RAND Europe survey, where 53% of institutional leadership surveyed reported a slight or significant decrease in research activity during the pandemic, compared to 26% reporting a slight or significant increase. This increase in activity was stated as being associated with the emergency response to the pandemic, rather than an overall institutional increase in research activity. Two institutions highlighted that whilst some research activities increased - such as report writing - and others decreased due to the restrictions, overall research activity stayed the same. Furthermore, 60% of those surveyed stated that without support provided by the interventions, research activity would have worsened.[268]

[267] Researchfish data was collected in March 2021
[268] "RAND Europe Survey."

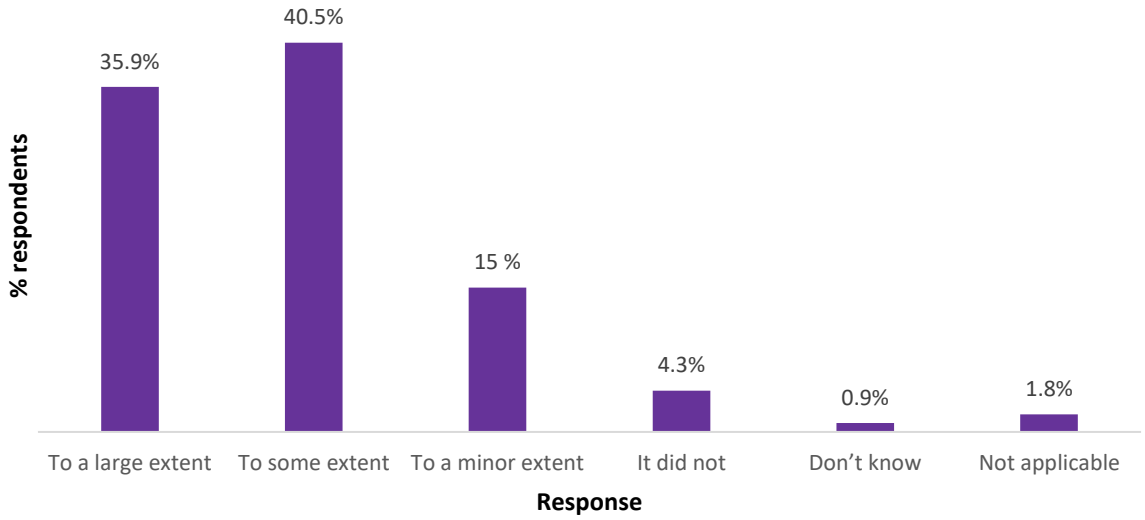
Figure 18. Has the COVID-19 pandemic affected project's research outputs and outcomes, compared to what was originally expected



Source: RAND Europe analysis of Researchfish data

Interventions supported research activity to continue. This included directly supporting COVID-19 measures such as supporting the purchase of equipment and Personal Protective Equipment (PPE) to allow some research to continue in a COVID-19 secure manner. The interventions supported research activity to continue. As seen in Figure 19, 40.5% of researchers agreed that the interventions had supported research activity to continue to some extent, and a further 35.9% agreed that the interventions had supported research activity to continue to a large extent.[269]

Figure 19. To what extent did the intervention(s) you received support the ability for your research activity to continue?



Source: Vitae wave 3 survey

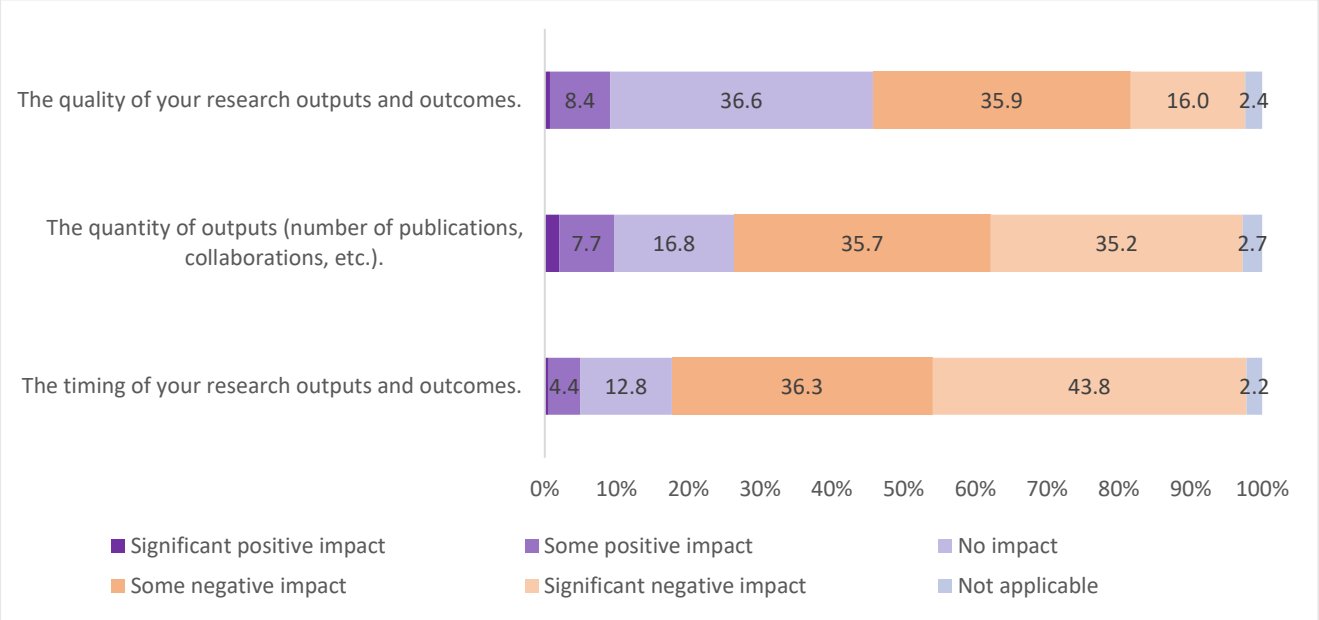
[269] "Vitae, Ongoing impact of the Covid-19 pandemic on researchers and research Wave 3, 2023"

Institutions supported by the SURE scheme flagged priority research areas including AI, sustainability, computing and advanced manufacturing and used the funding to support systems and processes around research activity including data management or staff within research facilities. Institutions in receipt of the COVID-19 Institute Support Fund stated that alongside supporting research capacity through staff, access to facilities and ensuring that facilities could run in a COVID-19 secure way (such as the additional cleaning and PPE) was important to supporting and maintain research activity. The roles of support staff were also increased to consider the additional working hours throughout the pandemic. Activity supported by interventions was also specific to COVID-19. For example, the Alan Turing Institute that received support from the Institute Support Fund stated that the financial stability from the intervention had enabled them to deliver activities specific to the UK's COVID-19 response. This included DECOVID (a secure research platform for patient data), a series of workshops on AI and data science in light of the pandemic, and resources to support the development of a contract tracing app.[270] As well as supporting new research activities, several of the interventions supported business-as-usual research activity to continue, including maintaining the activities already undertaken by the public sector research establishments, and enabling students to continue their doctorates to completion.[271]

In terms of the specific impacts of the COVID-19 pandemic on research outputs and outcomes, as seen in Figure 20, the majority of respondents to the Vitae Wave 3 survey reported continued negative or significantly negative impacts on the quality of research outputs and outcomes (51.9%), the timing (80.1%) and quantity (70.9%) of research outputs as a result of the COVID-19 pandemic. Surprisingly, those with interventions are more likely to report that the COVID-19 pandemic negatively impacted on the quality of their research (57% compared to 45%) and the timing of their outputs and outcomes (49% compared to 37%). This indicates that whilst the interventions provided support for the continuation of research activity, it perhaps did not translate to research outputs.

[270] "UKRI and BEIS Management Information."
[271] "Beneficiary Focus Group 02 - Doctoral Extensions.", "Beneficiary Focus Group 04 - BEIS Sponsored PSREs.", "Beneficiary Focus Group 03 - Medical Research Charity ECR Fund.".

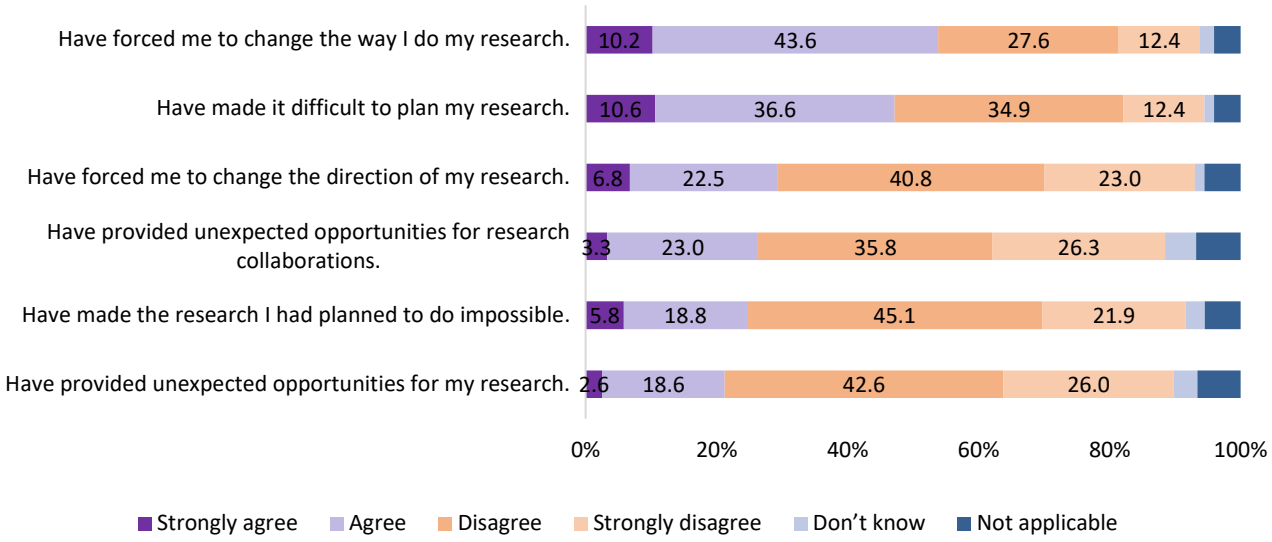
Figure 20. Compared with your original expectations, how has the COVID-19 pandemic impacted on your research outputs and outcomes at this point in time?



Source: Vitae Wave 3 survey

In terms of overall impact of the COVID-19 pandemic on research activities, as seen in Figure 21, around half of respondents agreed or strongly agreed that ongoing impacts of the COVID-19 pandemic have forced them to change the way they do their research (53.8%) and have made it difficult to plan their research (47.2%). For a quarter (24.6%), the impacts have made the research they wanted to do impossible. Nearly a third of respondents (29.3%) have changed their research direction as a result of ongoing impacts of the COVID-19 pandemic. There were no differences by those receiving or not receiving interventions. For a quarter of respondents (26.3%) ongoing impacts of the COVID-19 pandemic have provided unexpected opportunities for research collaborations, while a fifth (21.2%) agree they have provided unexpected opportunities for their research, with those receiving interventions more likely to agree (58.9 compared to 46.1%).

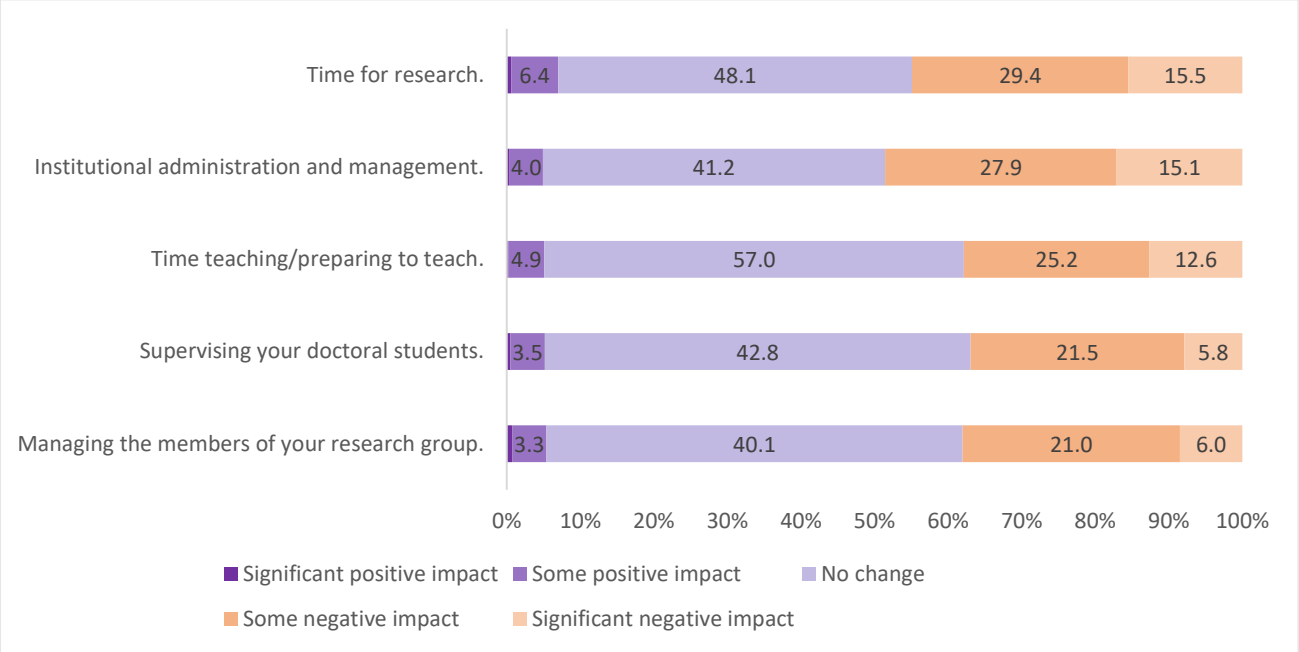
Figure 21. What are the ongoing impacts of the COVID-19 pandemic on the following?



Source: Vitae Wave 3 survey

Overall, the majority of respondents from the Vitae Wave 3 survey did not report any ongoing consequences of the COVID-19 pandemic on academic activities (40% - 57%) (Figure 22). However, there are significant proportions reporting negative or significantly negative impacts on time for research (44.9%), institutional administration and management (43.1%) and teaching (37.8%). Just over a quarter of respondents report ongoing negative impacts on supervising doctoral students and members of their research group. Respondents who received interventions were more likely to report no change in any ongoing consequences of COVID-19 on time for research (51% compared with 44%).

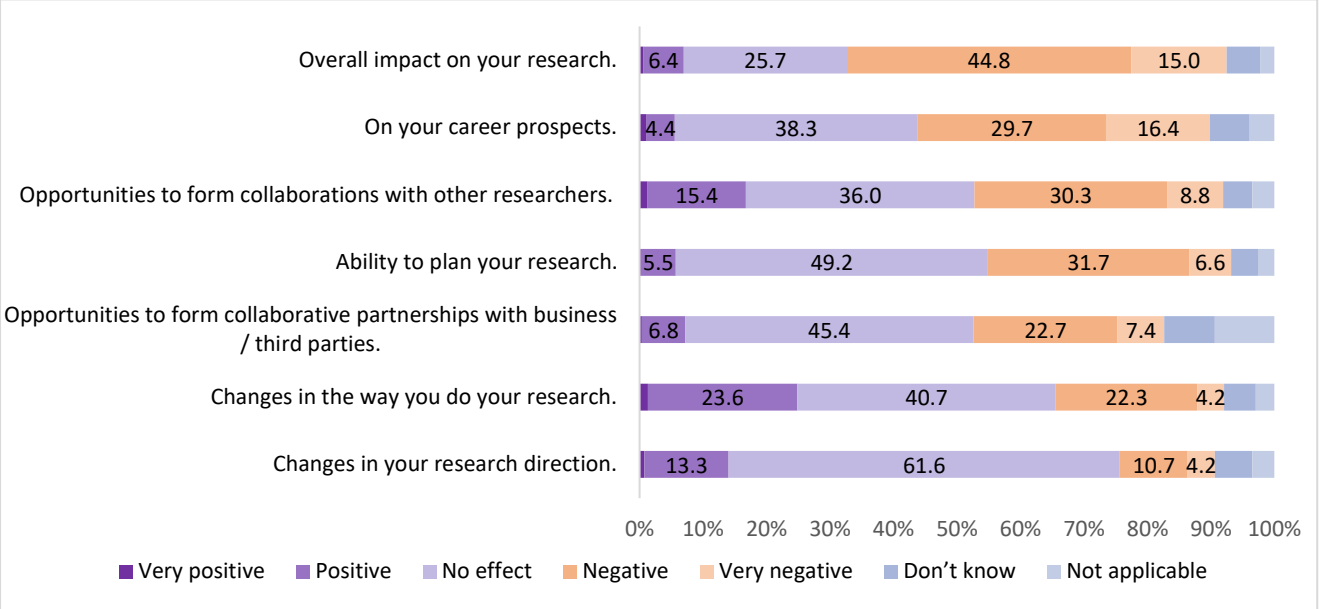
Figure 22. What are the ongoing consequences of the COVID-19 pandemic on the following?



Source: Vitae Wave 3 survey

In terms of the consequences of the pandemic on research over the next three years, respondents were most likely to identify negative impacts on research overall (59.8%) (Figure 23). Perhaps unexpectedly, those who received intervention support tended to be more negative on the consequences of the pandemic on overall impact on research, compared to those who did not receive support (62.9% compared to 56.0%). However, those in receipt of interventions did tend to report more positive impacts on the way in which they did research (28.65% compared to 20.0%) and were less negative about their ability to plan their research (52.85% compared to 44.6%).

Figure 23. Consequences of the COVID-19 pandemic on research over the next three years



Source: Vitae Wave 3 survey

4.3 Knowledge exchange

This section discusses the impact of the COVID-19 pandemic and the stabilisation interventions on the number and types of collaborations established or maintained, measures of wider engagement beyond academia and level of innovation activity (e.g. IP generation and commercialisation). From the available datasets, determining the result of the interventions on these indicators of knowledge exchange is limited. Therefore, we have used the data to speak to the impact of the pandemic more widely, and have related this to the interventions where we feel this is possible.

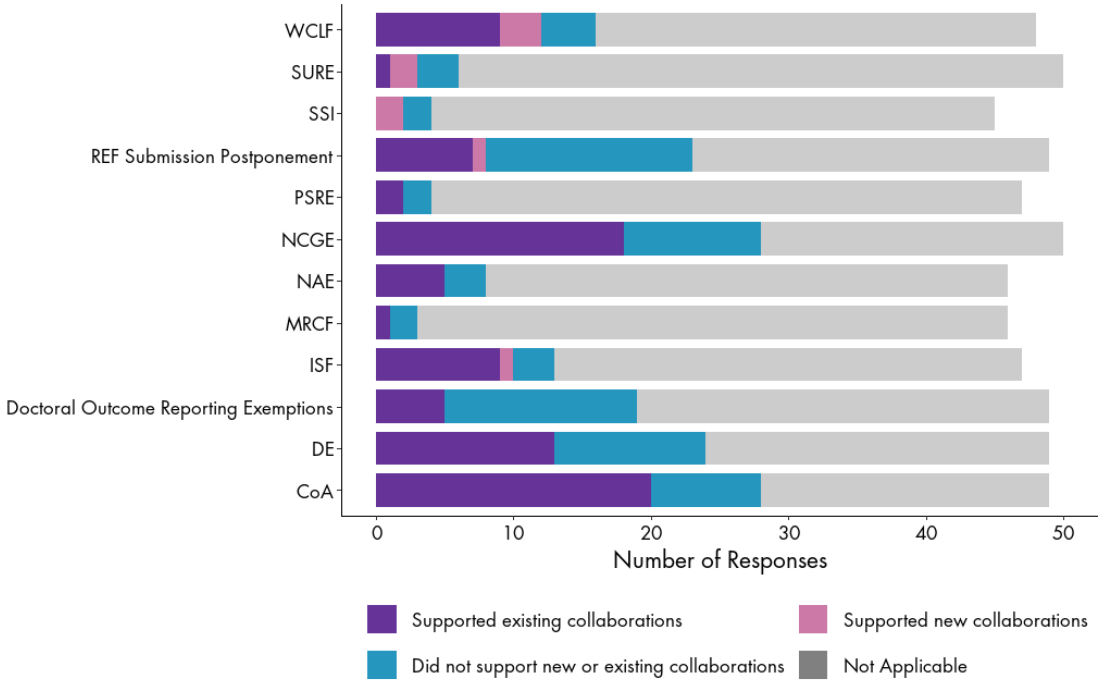
The pandemic significantly impacted collaboration and engagement activities, with a 31% decline in interactions between business and universities. The COVID-19 pandemic and the ensuing national lockdown drove an overall decrease in the number of interactions between businesses and universities, which fell from an all-time high of 113,000 to 78,347, a 31% decrease.[272] This follows from an overall reduction in UK business investment of approximately -7%.[273] This reduction in interactions between the sectors is particularly pronounced in the case of SMEs, where a 39% reduction in interactions was observed.[274] In contrast, partnerships with large businesses remained

[272] "State of the Relationship 2021: Analysing Trends in UK University-Business Collaboration" (National Centre for Universities and Business, 2021), https://www.ncub.co.uk/wp-content/uploads/2021/07/State-of-the-Relationship-2021-Final-version.pdf. P. 12
[273] "State of the Relationship 2021: Analysing Trends in UK University-Business Collaboration." P. 13
[274] "State of the Relationship 2021: Analysing Trends in UK University-Business Collaboration." P.12

more resilient with only a -2% reduction in interactions, which speaks to the importance of strategic partnerships between universities and businesses prior to the pandemic.[275]

Although not a strong focus for the interventions as a whole, there are examples where institutions in receipt of interventions were able to engage with knowledge exchange activities. Institutions in receipt of the CISF highlighted that through research projects funded by the intervention both internal collaboration between researchers on the project, as well as external collaboration activities had been supported to some extent.[276] This was similar for WCLF where internal collaboration across disciplines was highlighted, and SSI and National Academies where support has highlighted as being able to enable existing partnerships to continue.[277] Figure 24 below further supports the beneficiary focus group findings, highlighting that a number of interventions in particular supported existing collaborative research more than others, including the WCLF, no cost grant extensions, DE and CoA.

Figure 24. To what extent did each received intervention support new or existing collaborations with industry and academia?



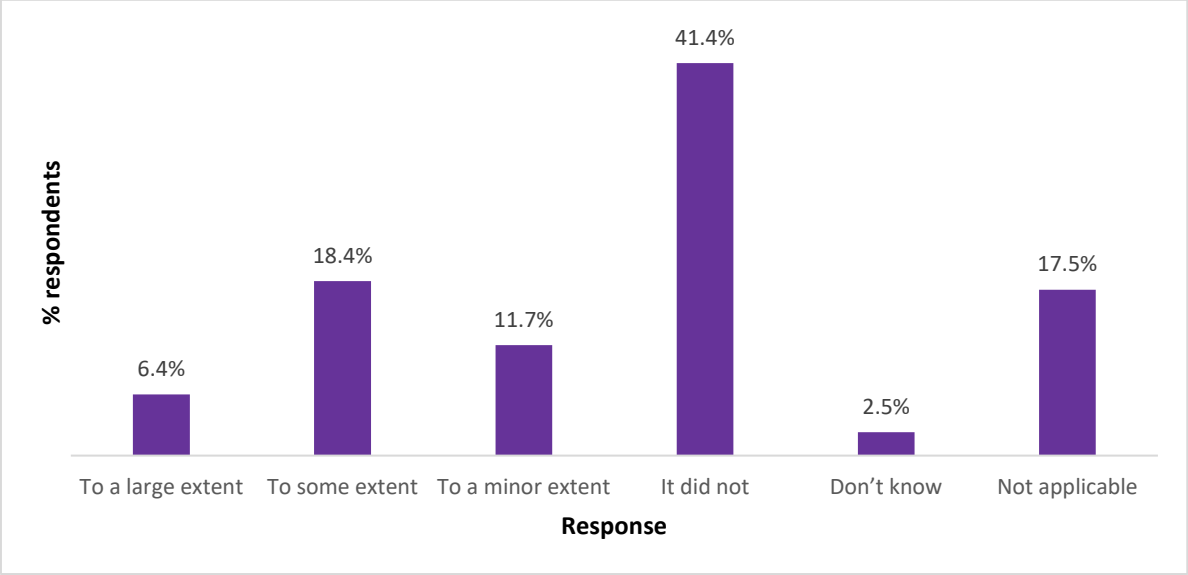
Source: RAND Europe survey of institutional leadership

Results from the Vitae Wave 3 survey below show that only a quarter of researchers (24.8%) reported that the interventions had supported engagement beyond academia

[275] "State of the Relationship 2021: Analysing Trends in UK University-Business Collaboration." P.12
[276] "Beneficiary Focus Group 01 - Covid-19 Institute Support Fund."
[277] "Beneficiary Focus Group 07 - World Class Laboratories Fund.", "Beneficiary Focus Group 05 - Support for Small, Specialist Institutions.", "Beneficiary Focus Group 08 - National Academies.".

including collaboration or commercialisation to some or to a large extent. 41.4% reported that interventions provided no support for wider engagements.[278]

Figure 25. To what extent did the intervention(s) you received support your engagement beyond academia (e.g. intersectoral collaborations, commercialisation)?



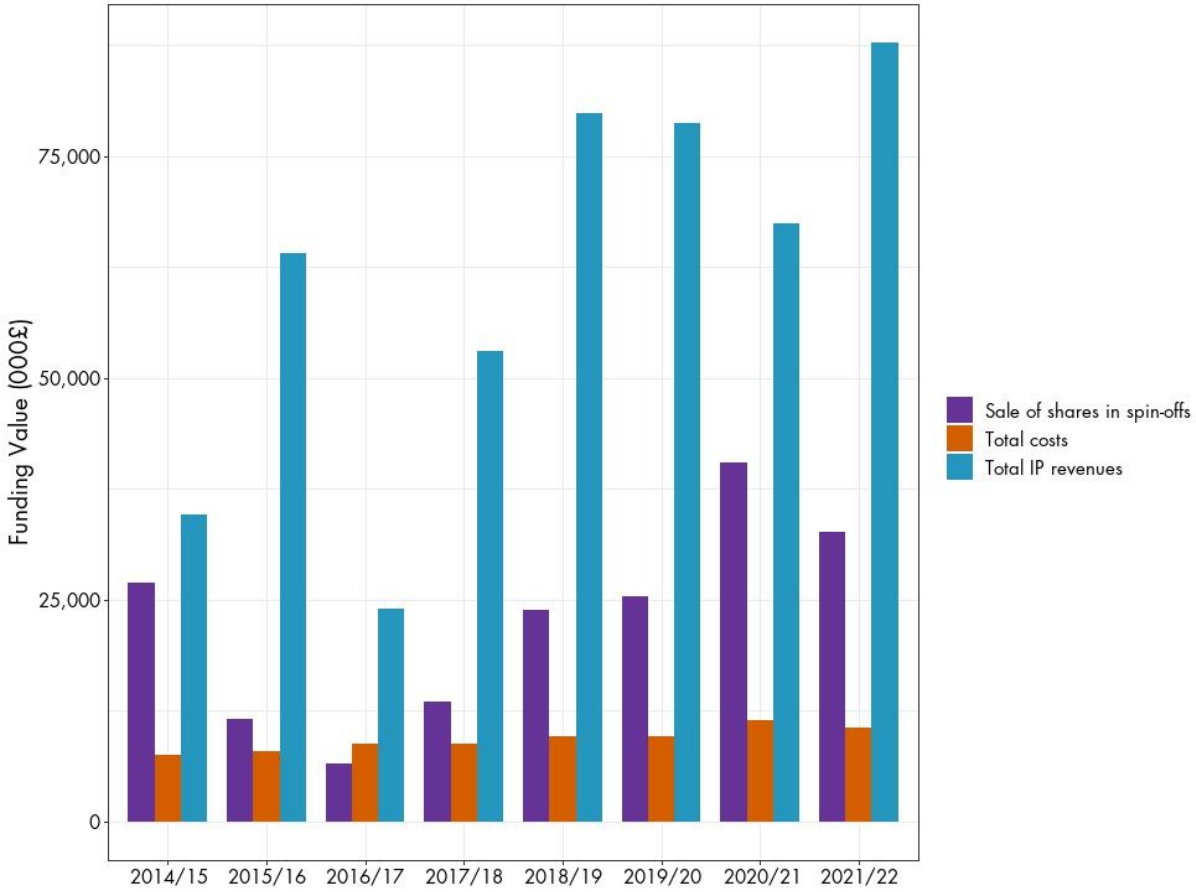
Source: Vitae Wave 3 survey

During the pandemic, innovation focussed activities experienced a significant decline and business and overseas income fell. Despite this, spin-out activity continued to increase. In a sector wide survey, 45% of universities reported a moderate or significant decrease in collaboration with external partners in innovation-focused activities during the COVID-19 national lockdown. This was primarily in collaboration with SMEs, where 55% of universities claiming that innovation-focused activities with these partners had decreased significantly, collapsed, or moderately declined. Innovation focused activities were differentially impacted depending on the sector. While activities between universities and their partners in the transport manufacturing and aerospace sectors saw the biggest declines, business partners working in life sciences saw an increase in innovation-focused activity for more than half of universities.[279] Therefore, the overall decline in innovation-focused activities between universities and the private sector hide underlying pockets of growth in innovation-focused activities between, for example, life science firms and universities, although it is likely that these pockets of activity are focused on certain topics relating to the unfolding pandemic. Figure 26 shows that whilst total IP income dropped in

[279] Ulrichsen, T.C. 2021, January. "Innovating during Crisis: The Effects of the COVID-19 Pandemic on How Universities Contribute to Innovation". National Centre for Universities and Business & University Commercialisation and Innovation Policy Evidence Unit.
[279] Ulrichsen, T.C. 2021, January. "Innovating during Crisis: The Effects of the COVID-19 Pandemic on How Universities Contribute to Innovation". National Centre for Universities and Business & University Commercialisation and Innovation Policy Evidence Unit.

2020/21, there was a significant uptick in the sale of shares in spin offs, demonstrating strong maintenance of IP activity over the pandemic.

Figure 26. IP income of universities



Source: RAND Europe analysis of HESA data

Interventions seem to have had a positive impact on innovation focussed activities, with the CoA intervention and PSRE intervention making significant contributions. Universities have reported steady public support for R&D and the commercialisation of innovation-focused activity over the course of the pandemic, even as third-party funding from industry or charities has decreased.[280] As such, government interventions to support R&D and innovation-focused activity have generally been favourably viewed as having a positive impact on the ability of universities to support innovation-focused activity during the pandemic.[281] For example, 61% of university respondents reported that UKRI's CoA had a slightly, or significantly, positive effect on their ability to deliver, support, and initiate innovation activity, while 34% reported that the CoA only had a limited, or no effect, on their innovation activity. Nevertheless, the main issues faced by universities with regard to

[280] "UKRI and BEIS Management Information."
[281] Ulrichsen, "Innovating during Crisis: The Effects of the COVID-19 Pandemic on How Universities Contribute to Innovation." P. 59

innovation-focused activity has been a reduced access to facilities, raw materials, and equipment. The financial burden associated with supporting existing activity and initiating new collaboration has also been cited as a factor negatively impacting innovation activity.[282]

Whilst the PSRE intervention supported the maintenance of BAU activity, one project – the Measurement for Recover (M4R) project highlighted in the box below - within the intervention package was focused on supporting businesses.[283] This project, led by the National Physical Laboratory (NPL), aimed to help UK companies access expertise and the resource of the UK's leading measurement science experts to ensure companies could recover and grow within the challenging environment generated by the pandemic.[284]

PSRE – M4R project

The BEIS PSRE intervention schemes targeted specific institutes that faced increased financial pressure due to the COVID-19 pandemic. One of the PSRE schemes, the M4R scheme, went beyond this by seeking to support the customer base of SMEs, of the NPL. The intervention responded to key stakeholder consultation showing that SMEs faced several new financial pressures as a result of COVID-19. These included: the need to invest in understanding how to operate under social distancing guidance, how to start up operations following shut down and ensure compliance to quality systems, how to diversify products and markets following the COVID-19 shutdown, support additional fund raising, and evaluate the resilience of existing supply chains.[285] The M4R scheme sought to address some of these pressures, by providing certain measurement services for free, thereby reducing some to the fixed operating costs of the NPL's customer base.

The scheme provided expert advice to companies, supporting them to improve or upgrade their services, accelerate delivery with companies anticipating improved or new products. In terms of collaboration 625 applicants received expert advice, and 78% of these had resulted in a new collaborative R&D project. 90% of companies reported a financial benefit from the scheme.[286]

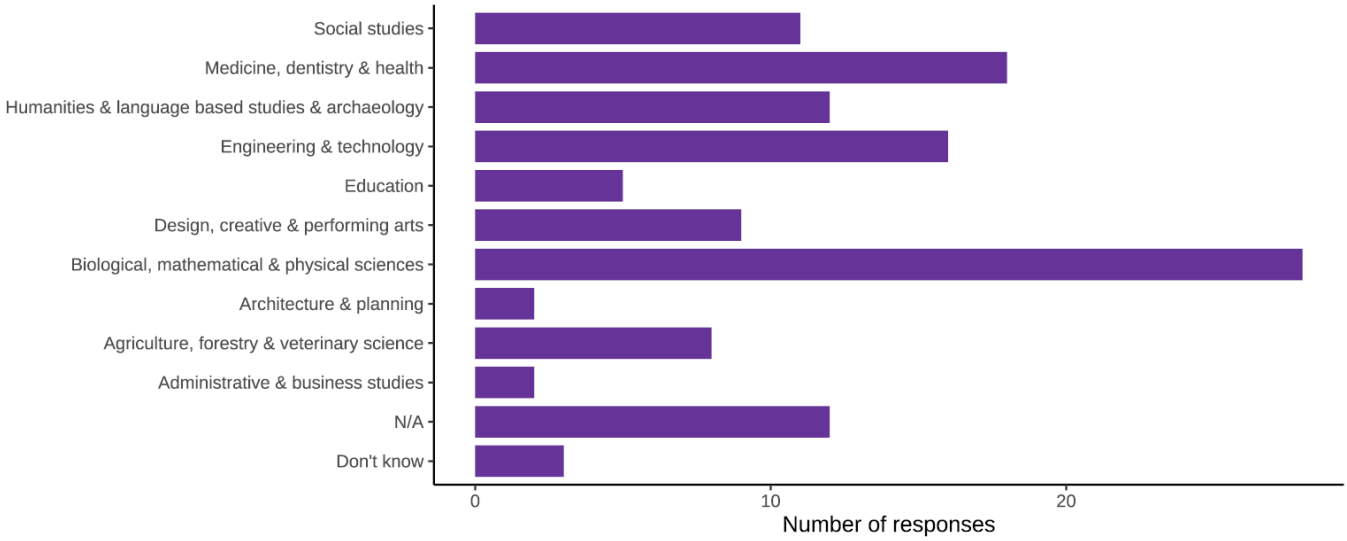
4.4 Research infrastructure

This section discusses the impact of the COVID-19 pandemic, and the stabilisation interventions, on the level of investment in infrastructure; reported level of access to infrastructure; and perceptions of the quality and accessibility of infrastructure.

[282] Ulrichsen. 2021.
[283] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE)."
[284] "Measurement for Recovery (M4R): Building Confidence in the Future by Supporting Companies to Recover and Grow." (National Physical Laboratory (NPL), n.d.).
[285] "UKRI and BEIS Management Information."
[286] M4R-Infographic-March-2022.pdf

Lockdown restrictions resulted in limited access to almost all research infrastructure, impeding research capacity and activity. As previously discussed, lockdown and COVID-19 restrictions entailed that access to almost all research facilities on campuses was suspended for periods of time. While some exceptions have been made, such as for COVID-19 relevant research requiring laboratory access, most research projects requiring access to facilities have had to replanned, paused, or cancelled.[287] The lack of access to infrastructure impeded research activity for certain disciplines more than others due to the nature of research being conducted. As demonstrated in Figure 27 below, institutional leadership felt that the health sciences and STEM were particularly impacted as they required physical access to facilities.

Figure 27. Which disciplines were most impacted by a lack of access to infrastructure?



Source: RAND Europe survey of institutional leadership

Alongside access, the maintenance of infrastructure was impacted by the pandemic. A UKRI survey of senior leadership at HEIs found that 37% of participants agreed or strongly agreed with the statement that since January 2020 the planned maintenance, renewal and improvement of facilities used primarily for research has been affected by other urgent priorities such as making estates COVID-19 secure.[288]

Demand for IT support and library services dramatically increased during the pandemic due to remote working. PRES 2021 data, including 39,855 postgraduate survey respondents, showed despite the high demand, an overall high level of satisfaction with IT support and access to resources among postgraduate researchers, where 81% of respondents agreed that their needs were met in this area. Furthermore, 86% of these respondents reported having appropriate access to online library services and 74% having access to specialist resources necessary for the research when working remotely, indicating relatively high levels of experienced support in conditions where students needed

[287] "UKRI and BEIS Management Information."
[288] "UKRI and BEIS Management Information."

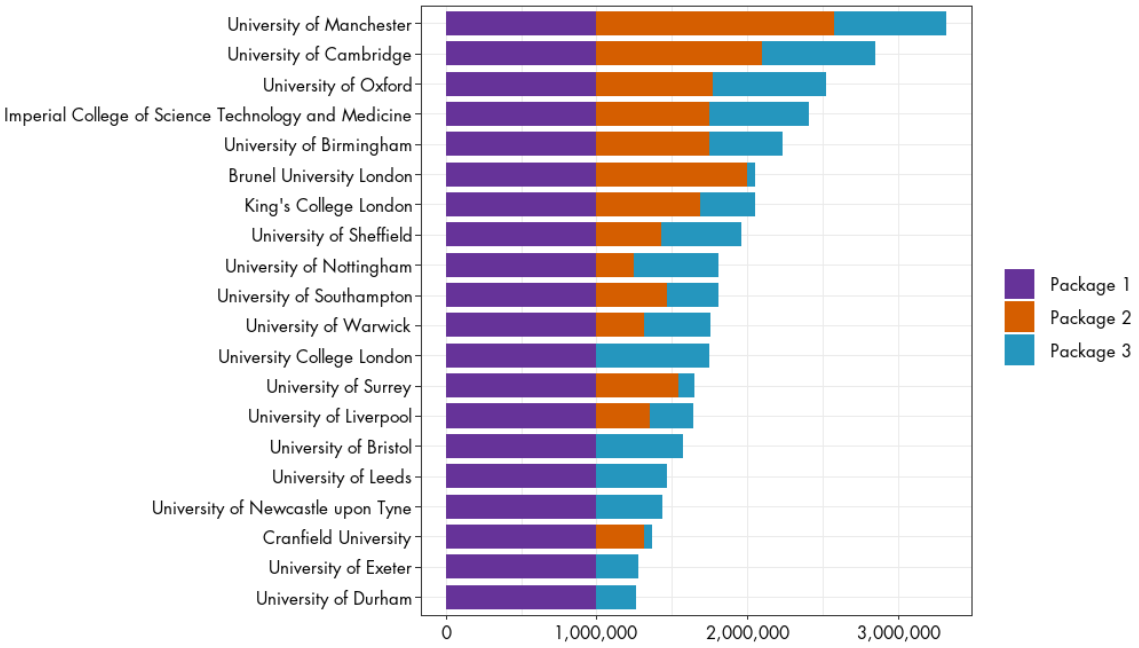
to work from home. On campus, 78% stated that they had appropriate access to IT resources and facilities and 77% to specialist resources necessary for their research. 72% stated that they had a suitable workspace both when studying remotely and when studying on campus, indicating that there is room for improvement in both these spaces. For example, lack of office spaces, and inefficient allocation of existing office spaces, were raised as concerns by students.[289] The NPL equity injection, a scheme under the BEIS PSRE intervention, also targeted support for upgrading IT infrastructure. It did so by providing a direct equity injection for £19.4 million to support the NPL to upgrade its IT infrastructure and stabilise its finances following COVID-19.[290]

The World Class Laboratory Fund, enabled institutions to upgrade their research infrastructure, supporting research activity to continue during the pandemic. The WCL fund was the key intervention developed and implemented to address issues relating to infrastructure that emerged due to COVID-19. This included funding to ensure that institutions could make their research infrastructure COVID-safe, as well as more general improvements to infrastructure where needed. The intervention was delivered over three phases – a total of £61 million was allocated in package 1, with a further £12 million distributed in package 2, and £12.5 million in package 3. Institutions in receipt of funding were required to report on how the allocated funding was spent, as well as the impacts to research activity. Based on this monitoring data related to packages 1 and 3, most spending was done within the category of facilities and equipment (64% of the allocated £73.5 million), and the second highest expenditure directed to estates (20% of the allocated £73.5 million).

Figure 28 shows the 20 institutions who received the highest value WCLF package funding. It demonstrates that the value of grants in Package 1 were relatively equal for each institution, whereas the value of Package 2 and 3 varied greatly between institutions.[291]

[289] Pitkin, “2021 Postgraduate Research Experience Survey (PRES).”
[290] “UKRI and BEIS Management Information.”
[291] Note that as stated in the ITT, this evaluation is focused on WCLF Package 1, however the other two packages have been included for completeness within the figures.

Figure 28. WCLF allocations for the 20 institutions who received the highest total value, 2020/21



Source: RAND Europe analysis of internal UKRI data

When organisations were asked what the funding had supported, facilities and equipment was stated as the biggest outlet for spend. Several of the institutions noted that the WCL funding had supported activities that would not have taken place without the allocation. This included (i) new and accelerated activity and research, (ii) meeting the COVID-19 working conditions and (iii) pre-emptive maintenance, repairs and replacements of equipment. An example of spend was the University of Wolverhampton where the WCL allocation facilitated maintenance and repair of the existing facilities and equipment for chemical and biological research. This money enabled internal university budgets to be re-allocated to support staff and students during the pandemic. In addition, the support enabled a secure laboratory environment for staff and postgraduate research students to return to work to and engage with research. The monitoring data suggested that the allocated funding helped universities continue research activities which would otherwise have been cancelled, scaled back, or delayed.[292] Focus group participants highlighted that by supporting institutions to upgrade infrastructure, research activities were able to be undertaken at pace, for example, lab samples could be processed at a faster rate due to better equipment. This was particularly valuable during the pandemic as researchers worked in shifts, and therefore may have less time to undertake lab work.[293]

In addition to the WCL fund, other interventions enabled access to infrastructure by providing support to keep facilities running in a COVID-19 secure manner, enabling the purchasing of lab equipment and enhancing data management systems. Although

[292] "UKRI and BEIS Management Information."
[293] "Beneficiary Focus Group 07 - World Class Laboratories Fund."

the WCL fund was unique in directly addressing infrastructure specifically, other interventions also supported access. The UKRI COVID-19 Institute Support Fund, for example, provided support for infrastructure to institutions.[294] This included providing funds to keep research facilities running in a COVID-19 secure way, and additional funds for IT hardware and software licenses to facilitate effective remote working. Additional funding supported the expansion of the roles of support staff, necessary to manage the impact of extended working hours, lab shift working and home working. This included equipping all relevant staff with laptops, screens, and chairs (where necessary), as well as paying maintenance costs of equipment that had to be switched off and set up again because of lockdown. Furthermore, RE's research funding to HEPs includes £10 million per year to support infrastructure within university museums, galleries, and collections across 19 HEPs.[295] The PSRE intervention helped support IT infrastructure.[296] Some of the support provided through SURE was used towards a project grant to enhance research data management and policy as well as data storage capacity.[297] Other interventions offering extensions also indirectly addressed access to infrastructure, such as the CoA and Doctoral Extensions, and provided additional time to help mitigate the impact that the lack of infrastructure would have had on research projects. Institutions that received SURE funding also used the money towards infrastructure including laboratory equipment and research assets such as specialised instruments for manufacturing.[298]

4.5 Financial Impact

This section discusses the impact of the COVID-19 pandemic, and the stabilisation interventions on RO finances such as income, expenditure, and deficits. This evaluation considered interventions that were funded from a combination of new injection of funds into the system, reallocation of existing funding towards COVID-19 support, and the slowing down or speeding up of existing planned spend.[299]

TRAC analysis found that nearly a third of universities experienced a higher research deficit since the COVID-19 pandemic, and the total research deficit of the sector declined. The interventions protected from the effects of some of this loss. TRAC analysis of research deficits since the COVID-19 pandemic (academic year 2020-2021) found that 31% of universities experienced a higher research deficit compared to the average across previous years (2017-2020). The total research deficit actually declined, falling from approximately £4779 million (averaged across 2017-2020) to £4240 million

[294] "Beneficiary Focus Group 01 - Covid-19 Institute Support Fund."
[295] "UKRI and BEIS Management Information."
[296] "Beneficiary Focus Group 04 - BEIS Sponsored PSREs."
[297] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE)."
[298] "UKRI and BEIS Management Information."
[299] This was based on conversations with UKRI and BEIS.

(2020/21)[300]. It is worth considering that while the pandemic has certainly impacted the sector, the general trend for the research sector prior to the pandemic was a gradual worsening of the research deficit over multiple years. More recent published statistics show that the deficit on research has increased from 2020/21 and reached £5bn in 2021/22, up 14% in 5 years[301] (based on 21/22 prices).

In terms of region, Wales had the highest proportion of institutions adversely affected, with the West Midlands having the lowest. Analysis of research deficits across TRAC groups (A (high research income) – F (low research income)[302] found that TRAC group F had the highest proportion of institutions adversely affected, with TRAC group B having the lowest (a full breakdown of region and TRAC group analysis can be found in Table 12 and Table 13.

Analysis looking at the size of the interventions compared to the research deficit over 2020/2021 found that across all universities, the size of the interventions were equivalent to approximately 9% of the research deficit. Comparison across TRAC group showed that for TRAC group D the size of the interventions were equivalent to 2.7% of the deficit, whereas for TRAC group B they were equivalent to 11.4%. Comparison across region showed that for the North East the size of the interventions was equivalent to 6.2% whereas for the East of England they were equivalent to 16.8% (a full breakdown of region and TRAC group analysis can be found in Table 14 and Table 15).[303] In general, the higher research income TRAC groups received a greater percentage of their research deficit from the interventions. This is likely as a result of those institutions being more research intensive and therefore this being a reflection of existing funding formulas and QR reallocation.

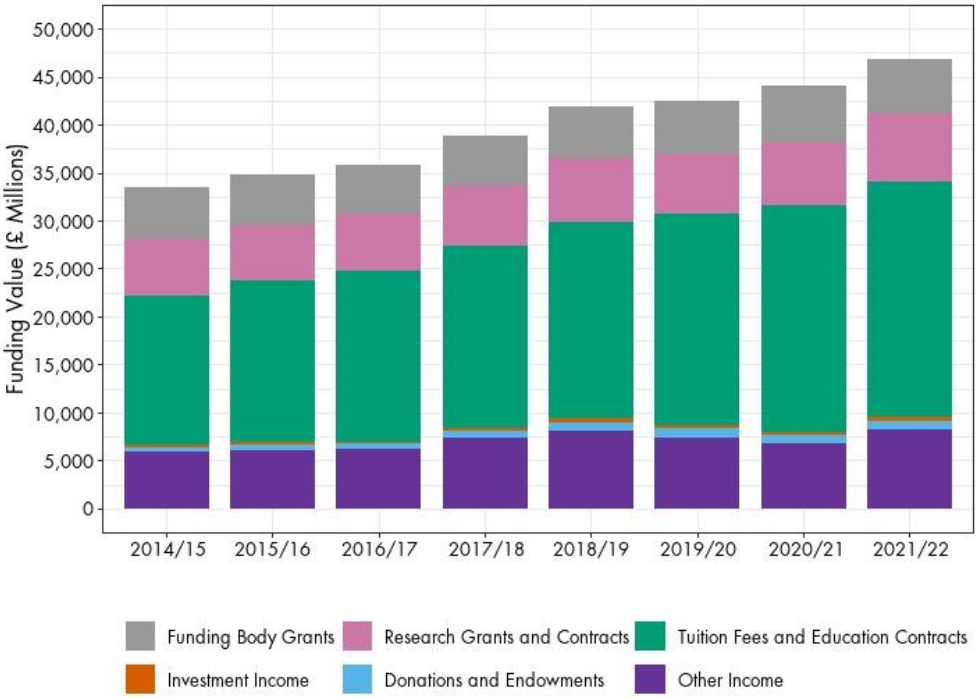
Furthermore, analysis of the data suggested that the size of the interventions were equivalent to approximately 3.2% of the research income for all universities. Looking at this across regions, we can see that this percentage ranged from 1.2% for Scotland to 4.8% for the East Midlands. Across TRAC group the percentage ranged from 5.1% for TRAC group E to 2.8% for TRAC group A (a full breakdown of region and TRAC group analysis can be found in Table 16 and Table 17).

The pandemic had a varying impact on research income, but the interventions provided a cushioning effect, especially for smaller and niche institutes. The impact

[300] All nominal TRAC research deficit figures expressed in 20/21 prices, utilising GDP deflator figures published by HMT in November 2023. Hence why the average across academic years 2017/18-2019/20 will not match the average of the nominal figures included in the respective Annual TRAC publications. Total research deficits taken from annual TRAC sector analysis for 17/18, 18/19, 19/20 & 20/21.
[301] UKRI Data Pack on Research Financial Sustainability - November 2023
[302] TRAC groups A-F represent HEIs that have been allocated together based on levels of research income, overall total income, having a medical school, or specialism in music or the arts. TRAC group A includes institutions with a medical school and research income of 20% or more of total income; TRAC group B includes all other institutions with research income of 15% or more of total income; TRAC group C includes institutions with a research income of between 5% and 15% of total income; TRAC group D includes institutions with a research income of less than 5% of total income and total income greater than £150M; TRAC group E includes institutions with a research income of less than 5% of total income and total income less than or equal to £150M. TRAC group F includes specialist music/arts teaching institutions.
[303] Note that when undertaking the analysis an assumption has been made that all Covid-19 interventions have been accounted for within the TRAC data – this may not be the case.

of the pandemic on annual research income varied with 48% of institutional leadership surveyed reporting a slight negative impact on research income, and a further 15% reporting a significant negative impact on research income.[304] However, 17% reported a slight positive impact on research income.[305] On the contrary, HESA data outlined in Figure 29 and Table 4, below shows no significant difference in trends of overall research income levels across 2014/15 to 2021/22. However, it is important to note that one third of funding for university research comes from surpluses from non-research revenue, such as international student fees, and concern regarding these additional sources of funding were a key driver for interventions.

Figure 29. HE income sources, 2014/15-2021/22



Source: RAND Europe analysis of HESA data

Table 4. HE income sources, 2014/2015 – 2021/2022, unit (£ Millions)

HE income source	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Tuition fees and Education Contracts	15541	16811	17757	19049	20536	21936	23511	24600

[304] "RAND Europe Survey."
[305] "RAND Europe Survey."

Funding Body Grants	5345	5167	5105	5127	5345	5504	6016	5743
Research Grants and Contracts	5968	5886	5916	6225	6584	6317	6572	6982
Other Income	5902	6045	6165	7370	8034	7427	6843	8307
Investment Income	230	261	254	256	403	375	331	341
Donations and Endowments	532	578	585	754	930	934	838	878

Source: RAND Europe analysis of HESA data

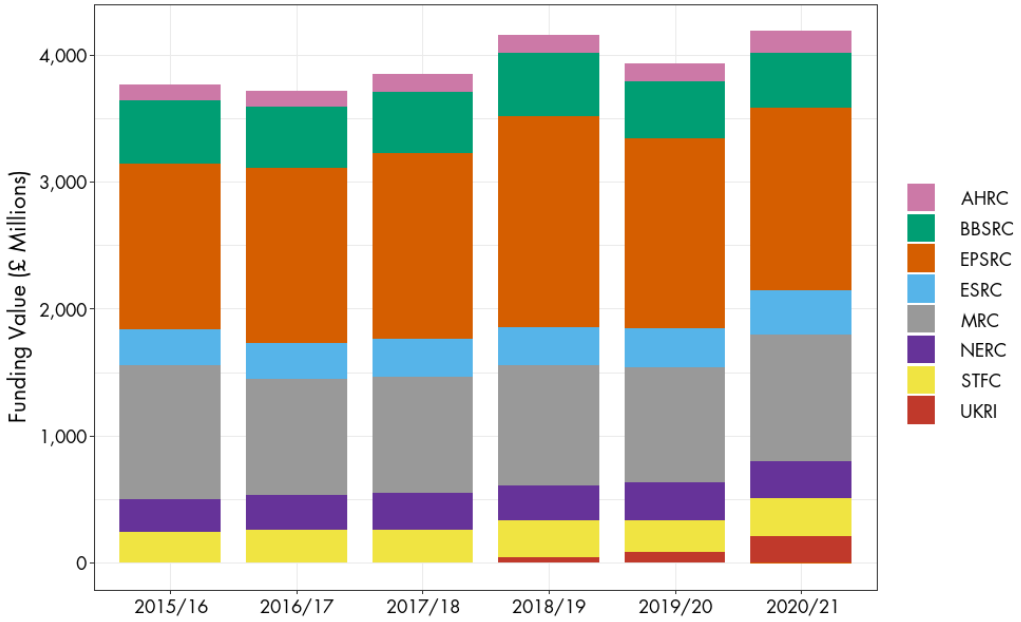
However, for small and niche institutes the overall figures mask the effect on research income. Data collected from institutions in receipt of the SSI and CSIF highlighted the role that the intervention had in supporting institutions financially. The Institute for Cancer Research stated that their grants had been cut by 20% and 30% in 20/21 and 21/22 respectively and that the fund had supported them to make up the shortfall over those two years. Liverpool School of Tropical Medicine stated that the funding had reduced impact of ODA cuts they had received and had enabled them to make strategic impactful investment for the future.[306] Case study 3 further exemplifies the value of this financial package and how the funding was utilised by the Alan Turing Institute.

The pandemic also impacted medical research charities, which saw a £290 million reduction in AMRC charity income and a £270 million reduction in AMRC charity research funding in 2020-21[307]. To put this in perspective, the financial impact of the pandemic is seven times greater than the impact of the 2008 financial crash was on medical research charities with the sector estimating that it would take at least 2 years for funding to medical research charities to recover. It was evident that the Medical Charity Early Career Researcher Fund was able to provide an important level of financial support to early career researchers funded by medical charities. Indeed, the fund supported 443 early career researchers, across 64 institutions across all of the UK's regions, with 52% of recipients based at universities outside of London, Southeast and the Greater East. In total £19,761,471 of funding was released through the first iteration of the fund in 2020 with further £50m announced in 2023.[308]

[306] "UKRI and BEIS Management Information."
[307] https://committees.parliament.uk/writtenevidence/26490/pdf/
[308] "UKRI and BEIS Management Information."

An assessment of income from the research councils (Figure 30) also highlighted no significant difference across funding values between 2015/16 and 2020/21. A slight drop in 2019/20 was recovered the following year.

Figure 30. HE income from each research councils, 2015/16-2020/21

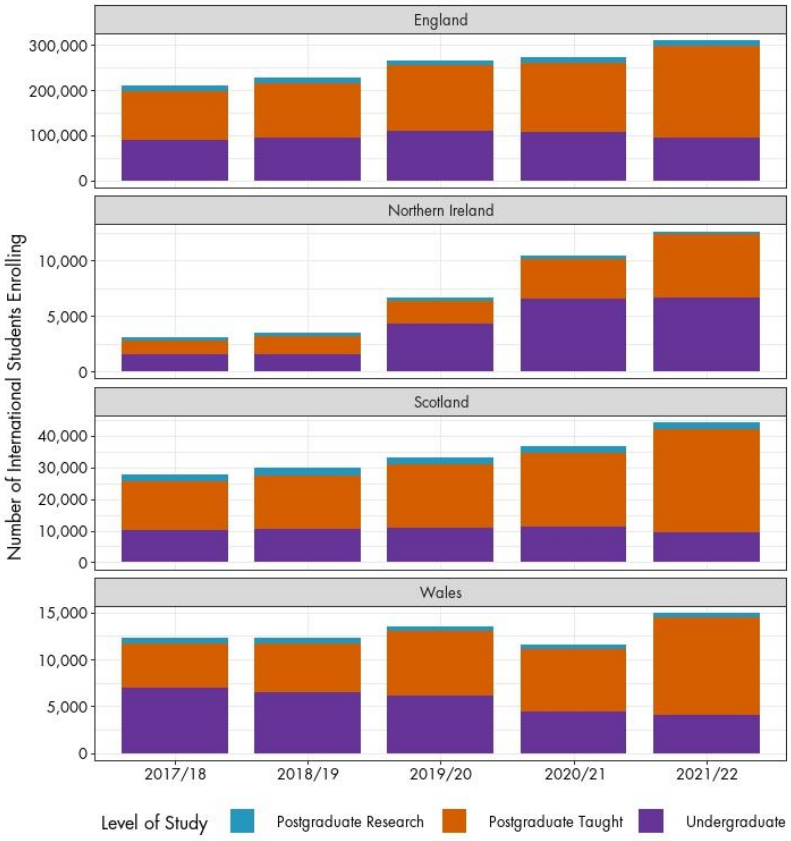


Source: RAND Europe analysis of HESA data

It is likely that the effects on research income at an institution level need further granular breakdown and assessment given that overall numbers may be masking several challenges experienced by research organisations, especially for those that are less research intensive. At the outset of the pandemic, approximately a third of all research activities in universities were funded through surpluses that universities had accumulated from internal non-research revenue generating activity, amounting to approximately £4.7bn per year. Since approximately one third of funding for university research comes from surpluses from non-research revenue generating activity, university research is extremely vulnerable to risks to non-research university revenues. In the context of the financial pressures produced by COVID-19, the main income generating sources of funding for ROs that were under threat were international student fees, charity research income, and business research income. ROs in Inner London, the West Midlands, and Eastern Scotland, are particularly reliant on international student fees for income.[309] However, based on HESA data, it is apparent that the reduction in international student enrolment did not materialise (**Figure 31**) and that international fees in fact increased across the similar time period (**Figure 32**).

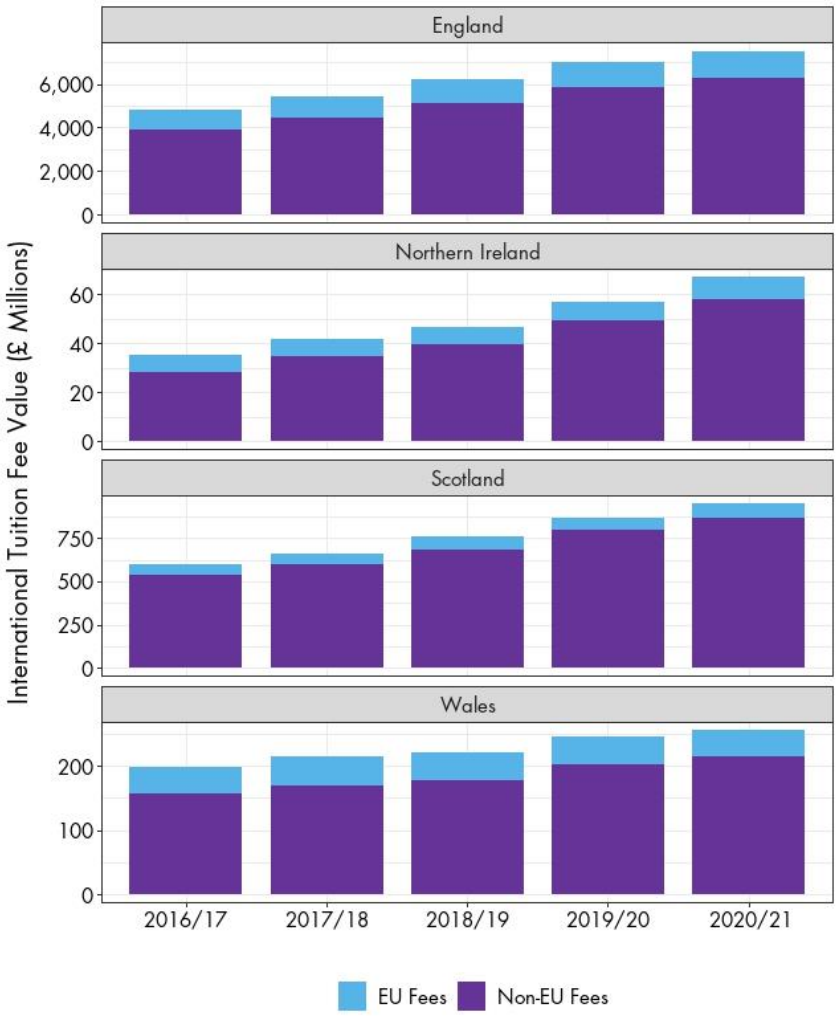
[309] "UKRI and BEIS Management Information."

Figure 31. Levels of international student enrolment (2017/2018 – 2020/2021)



Source: RAND Europe analysis of HESA data. Note that this data shows first year enrolments only and not continuing students.

Figure 32. International student fees (2016/2017 – 2020/2021)



Source: RAND Europe analysis of HESA data

Case study 3: CISF's support for specialist institutes

Context

The Alan Turing Institute is the UK's national centre for data science and artificial intelligence (AI). The Turing was established in 2015 as a joint venture between five university partners - Cambridge, Edinburgh, Oxford, UCL and Warwick - and EPSRC. In 2018, a further eight universities joined the Institute's university partner network. The Turing is headquartered in the British Library.[310]

The Turing was significantly impacted by its loss of funding from its university partners as they sought to cut down on research expenditure in response to the financial pressures of the pandemic. Funding from university partners subsidised a number of the institute's core activities including, but not limited to, the Turing Fellow scheme to

[310] "About Us," The Alan Turing Institute, accessed May 8, 2023, https://www.turing.ac.uk/about-us.

attract world class researchers, the early-career Turing Research Fellows, funded doctoral studentships, the Turing's Visiting Researcher programme, and the enrichment programme for doctoral students.[311]

The total ask to BEIS from Turing was for £7.3M to compensate for costs incurred up to March 2021. This was made up of £1.5M to replace the capital reserve which had been repurposed to fund DECOVID, and £5.8M to maintain research and training programmes following the loss of partner funding.[312]

The funding shortfall experienced by Turing was critically supported by the CISF

The DECOVID project was a collaborative project to create a near-real time database of critical care patient records. After approval by EPSRC, £1.5M in capital reserves were repurposed for the scheme, which left Turing with no capital reserves to fund the COVID-19 proofing of its facilities. The Turing also lost the ability to secure new funding from charity and business partners, as business and third sectors severely reduced, or withdrew funding due to the significant financial pressures they were facing.[313]

The CISF protected important parts of the Turing community from redundancy, although it was still necessary for the Turing to scale back new activity such as the appointment of new research fellows. Funding allowed the Turing to support a limited number of analysts to work on the DECOVID project.[314]

Funding from the fund enabled the Turing to continue to support the full portfolio of activity planned as part of it 2020/21 budget and allowed it to commit new funding for future research. The Turing was able to continue supporting university liaison roles through 2020/21 and 2021/22. Funding enabled the Turing to support EDI by completing its first EDI strategy and action plan, which would otherwise have been delayed. The Turing was able to support COVID-19 research including: the DECOVID project, the Odysseus project and the NHS COVID-19 tracing app.[315]

CoA and SURE represented the largest values of cash injection into the sector however their uptake was varied. In terms of allocation, all universities and some specialist institutes received QR reallocations whilst existing grant holders were eligible for DEA, costed and no-cost CoA as well. Figure 33 below highlights the value of intervention funding allocations for both higher education institutions and other institutions where CoA and SURE represent the largest values. However, in terms of distribution of funding, only five HEIs received SURE funding compared to 144 HEIs that were granted CoA. Case

311 "UKRI and BEIS Management Information."
312 "UKRI and BEIS Management Information."
313 "UKRI and BEIS Management Information."
314 "UKRI and BEIS Management Information."
315 "UKRI and BEIS Management Information."

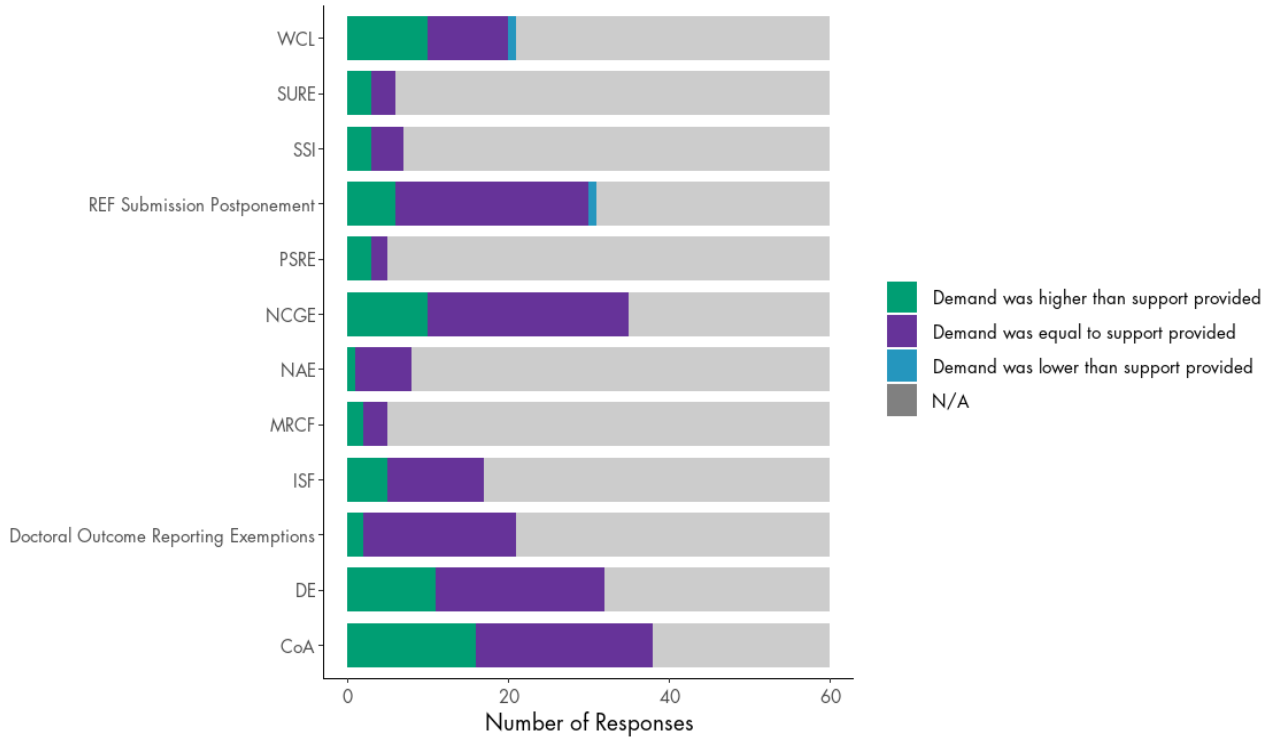
study 1 discusses the reasons for differences between uptake and provision of the SURE Fund. Ultimately, most interventions were available to all research organisations, but the uptake was varied.

Figure 33. Value of intervention funding allocations for higher education institutions and other institutions

Source: RAND Europe analysis of internal data

To understand research organisation leadership perspectives, organisations were surveyed on whether the intervention support provided matched the demand for each intervention. As shown in Figure 34 below, the support provided compared to the demand for each intervention varied quite considerably. Although for many interventions, majority responses highlight that the intervention had supported demand adequately, just under half of those who responded felt that the demand for CoA and the WCL was greater than the support provided.

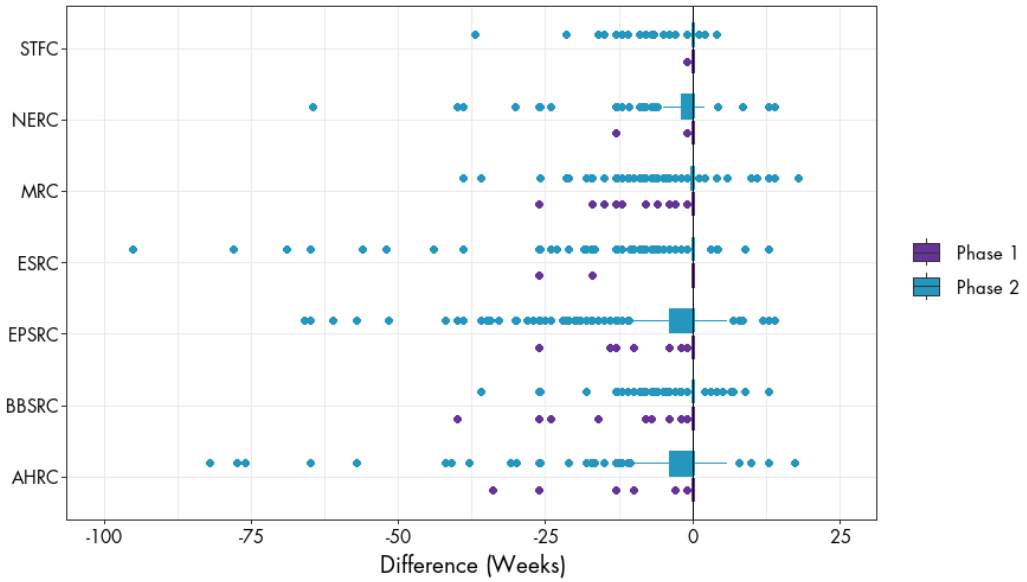
Figure 34. Intervention support provided compared to the demand



Source: RAND Europe survey of institutional leadership

Figure 35 shows that in Phase 1 most students received the extension lengths they requested as evident in the boxplot where 0 indicates no difference between request and extension. In Phase 2, students were more likely to receive a shorter extension than requested, and this was especially true for students funded by the AHRC, EPSRC and Natural Environment Research Council (NERC) where a large proportion of extension were reduced from anywhere between 4-25 weeks. Whilst the DE was instrumental in supporting doctoral completion rates, there appears to be the sentiment that more extensive support could have been provided however this was not further elaborated on.

Figure 35. Difference in length of extension grants compared to extension request for Doctoral Extensions



A value of 0 means that the student received the exact extension length requested, a positive value indicates they received a longer extension than requested, and a negative value means they received a shorter extension than requested.

Source: RAND Europe analysis of internal data

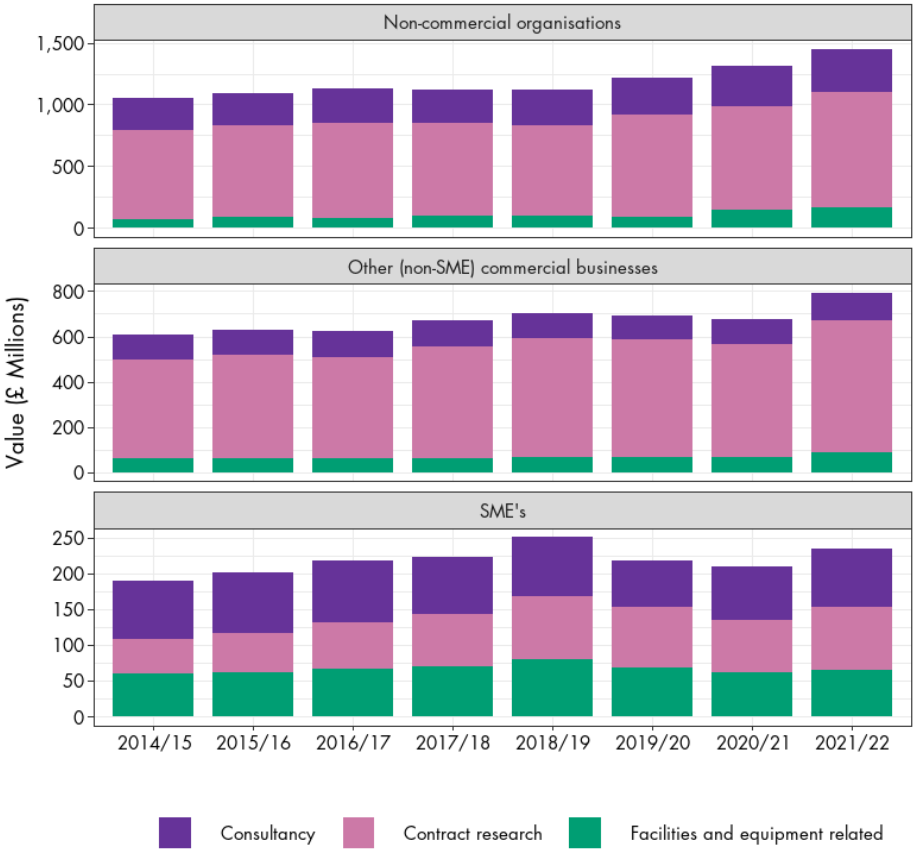
Collaborative research funding was unaffected by the pandemic however a drop in the value of SME contracts was noted. Figure 36 below shows the value of collaborative research funding by source between 2014/15 and 2020/21. This shows that collaborative research funding was largely unaffected by the pandemic, with the exception of the EU. However, this may be related to Brexit, or a combination of both factors.

Figure 36. Value of collaborative research funding by source, 2014/15-2020/21

Source: RAND Europe analysis of HESA data

Further analysis of contract values, as shown in Figure 37, between HE providers and external organisations between 2014/15 and 2020/21 highlights that the main impact of the pandemic on HE business services was a drop in the value of contracts with SMEs. This could be due to the fact SMEs may have been affected more by the pandemic economy than larger organisations, such as greater need to furlough staff, reducing capacity to take on contracts. It could also be due to a change in direction of research in some HE departments (i.e. labs switching their efforts to COVID-19 research) outside the scope of SME activity, reducing the need for their services.

Figure 37. Contract values between HE providers and external organisations, 2014/15-2020/21



Source: RAND Europe analysis of HESA data

There is some evidence that the interventions indirectly supported institutions to leverage further funding. For example, one institution in receipt of the ISF was able to acquire a small equipment grant for one of the projects funded within the package.[316] Charities also highlighted that early career researchers were able to acquire more funding following the success of their research projects.[317] SURE recipients also received co-funding, and benefited from de-risking of activities such as investing in research data management.[318] Finally, it was also highlighted by institutions in receipt of the WCL Fund that state-of-the-art research equipment also enabled future commercial work and income generation (for example with next-generation sequencing).[319]

316 "Beneficiary Focus Group 01 - Covid-19 Institute Support Fund."
317 "Beneficiary Focus Group 03 - Medical Research Charity ECR Fund."
318 "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE)."
319 "Beneficiary Focus Group 07 - World Class Laboratories Fund."

5. Equality, diversity, and inclusion

This section covers the extent and diversity of access and uptake of interventions including whether intervention design and implementation requirements affected diversity and inclusivity.

EDI was an important factor underpinning intervention design, however there was no targeted focus on adversely affected groups in the initial phase. Based on early monitoring of impacts in the research sector, certain groups protected under the Public Sector Equalities Duty[320] were more likely to be negatively impacted by the pandemic. Across different data sources, those with caring responsibilities stood out as one group that was particularly affected by the restrictions imposed by the pandemic. Home schooling in particular entailed that many of these researchers were unable to continue their research duties at the same pace and could not return to work as early as some others. As women are more likely to have more caring responsibilities, this was suggested to have a disproportional effect on them, compared to men. This finding was a recurring theme across multiple interviews with programme managers and sector body stakeholders, [321] [322] [323] and multiple respondents of the RAND Europe survey mentioned that they experienced this within their institutions.[324]

A research report commissioned during lockdown found that female researchers, as well as researchers from Black and other ethnic minorities backgrounds, were more vulnerable in terms of employment security as they are more likely to be on short-term contracts. Thus, already existing challenges in career progression among these groups may have been exacerbated by the pandemic. Further evidence from the sector suggests that those with long-term illness may have experienced greater difficulties in pursuing their research.[325] This was also mentioned by a handful of respondents in the RAND Europe survey, where clinically vulnerable researchers were more adversely impacted.[326] Although the interventions administered by UKRI were underpinned by the Public Sector Equalities Duty principles with EDI an important consideration, there appears to be no evidence suggesting that the groups most severely impacted by the pandemic were especially supported, at least in the initial phase of intervention delivery.

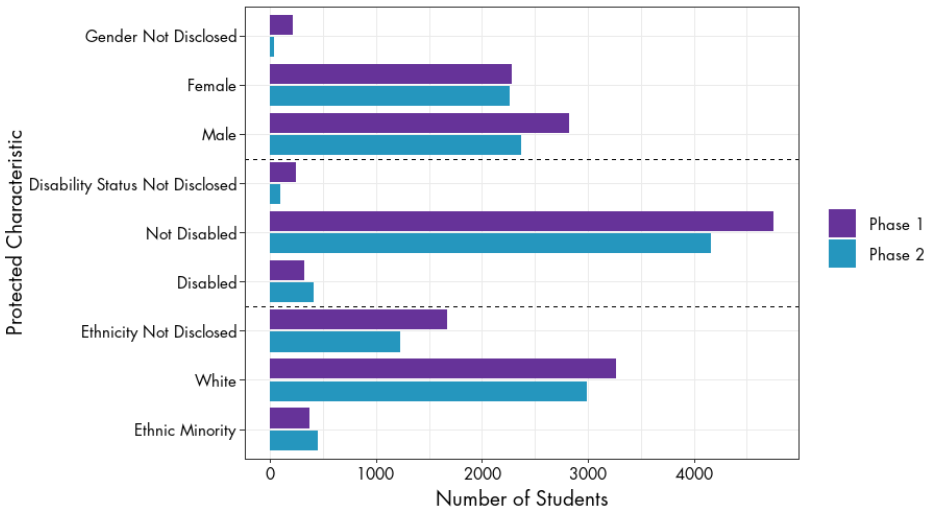
Ethnic minorities requested longer doctoral extensions however no statistical correlation was found between protected characteristics and length of extensions granted. The length of extensions requested varied slightly depending on the disability

[320] "Public Sector Equality Duty | Equality and Human Rights Commission," accessed May 8, 2023, https://www.equalityhumanrights.com/en/advice-and-guidance/public-sector-equality-duty.
[321] "Sector Body Interview 07."
[322] "Sector Body Interview 04," n.d.
[323] "Sector Body Interview 02."
[324] "RAND Europe Survey."
[325] "UKRI and BEIS Management Information."
[326] "RAND Europe Survey."

status, ethnicity, gender, and age categories of applicants in Phase 1, with students from the following demographic groups – older age, female, ethnic minority, disability – found, on average, to request longer extensions. In Phase 2, the variation in length of extension requests by EDI characteristics resembled that in Phase 1.. Moreover, among the most common age categories (<50), the mean extension length request increases slightly with age.[327] Overall, most groups requested less extensions in Phase 2, with the exception of students with a declared disability and students who are an ethnic minority. One hypothesis is that students in these groups experienced project delays disproportionately to students in other groups, requiring further extensions. For example, disabled students who were at high risk during the pandemic may have been required to shield, preventing them from conducting research at their respective universities during this time.

Looking at the number of students requesting extensions across Phases 1 and 2 we see that for Phase 1 of the DE intervention 7.1% of those requesting an extension were from an ethnic minority, this number was 9.8% for Phase 2. In terms of disability, 6.1% of requests were from those with a disability for Phase 1, which increased to 8.9% for Phase 2.

Figure 38. Number of students requesting extensions, across Phases 1 and 2 of Doctoral Extensions, by protected characteristic.



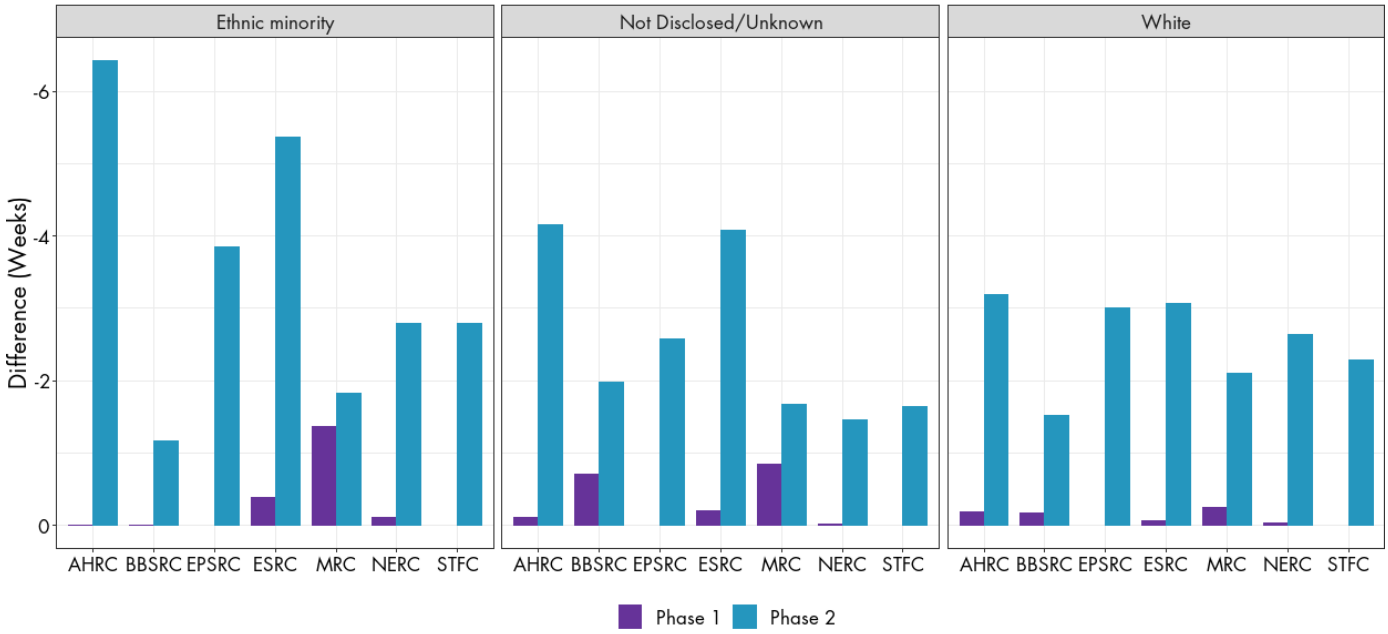
Source: RAND Europe analysis of internal data

Figure 39 below shows the mean difference between the extension length requested and extension length granted for each category of ethnicity, grouped by research council. Looking at the mean difference suggests that ethnic minorities received shorter extensions than requested compared to the other ethnic categories, particularly for students funded by the AHRC and ESRC. In order to account for confounding factors, a linear regression was performed to determine whether the difference between requested and granted extension was associated with any of the protected characteristics (gender, ethnicity, disability),

[327] "UKRI and BEIS Management Information."

controlling for research council, phase of intervention and length of extension requested. The regression did not yield any significant findings. This was confirmed through a further linear regression, which demonstrated that students who belonged to an ethnic minority requested an additional one-week extension compared to white students overall (p=0.012).

Figure 39. Mean difference between requested and granted extension length for each ethnic category, by research council and phase of intervention



Source: RAND Europe analysis of internal data

Iterative analysis and funding requirements supported more targeted support for those most vulnerable. Once interventions were implemented, UKRI directed receiving institutions' efforts at EDI through reporting requirements and through encouraging receiving institutions to prioritise evidence gathering and support for groups who were more negatively impacted by the pandemic. Other ways in which UKRI attempted to get an in-depth understanding of the impact on vulnerable groups included engaging with researchers directly to discuss the impacts of COVID-19. Moreover, equality impact assessments (EIA) were undertaken to assess how well interventions such as DE and CoA met the aims of the Equality Act 2010. The findings from this review were then used to update the second phase of the DE allocation policy which was designed to offer support to vulnerable groups.[328]

UKRI promoted EDI considerations in the implementation guidance, and terms and conditions, provided to institutions in receipt of funding. The guidelines were either phrased as requirements or recommendations and were used to set the expectations for ROs and grant holders in supporting vulnerable groups. For example, for the UKRI Doctoral

[328] "UKRI and BEIS Management Information."

Extensions, ROs had to fill out a Governance plan providing details on how they will ensure equal access to funding.[329]

ROs had significant leeway to allocate funds on a needs basis to support those most vulnerable however the interventions only partially mitigated EDI related negative impacts. Considerable flexibility was granted to ROs with the expectation of active engagement with direct recipients. For example, when designing the DE, it was agreed that if data showed any bias, then the ROs would be able to adapt or change intervention specific policies to eliminate such bias. Based on the data available at that stage, such adjustments were not needed as no barriers to EDI were identified within the policies at the time. Instead, ROs were granted flexibility to allocate funding on a needs-basis to address the potential greater needs among groups more vulnerable to COVID-19 disruptions, however it is unclear what the criteria for this needs assessment was.[330] Nearly half of the institutional leadership (45%) surveyed by RAND Europe believed that the pandemic negatively impacted EDI, with 10% of those surveyed believing it had been impacted to a large extent. However, 42% of those surveyed did not feel the interventions mitigated the negative impact of the pandemic on EDI, with 31% reporting some positive impact. Among those reporting a positive impact, three institutions explained that two of the interventions (DE and CoA) enabled those with caring responsibilities to postpone their research while they attended to their caring duties, instead of cancelling the research. The same was noted by two institutions about researchers on fixed contracts.

Nevertheless, those with caring responsibilities were still the most mentioned group in the survey in terms of those whose research was most adversely affected by the pandemic.[331] This suggests that support provided by the interventions only partially addressed EDI concerns presented by the pandemic, and that external factors such as caring responsibilities, including home schooling, had a significant role to play. This finding was supported by the Vitae Wave 3 survey. Of the respondents with caring responsibilities, 61.6% reported no ongoing consequences of the COVID-19 pandemic on their caring responsibilities, with a quarter reporting ongoing negative or significantly negative ongoing impact. When comparing those who received interventions against those who did not, a lower percentage of those in receipt of interventions reported ongoing negative impacts of the pandemic on caring responsibilities (30.8% with interventions compared to 36.3% without). In addition, a higher proportion of those in receipt of interventions reported no ongoing change of the pandemic on caring responsibilities (65.2% compared to 57.3%). Together, these results suggest the support offered mitigated the pandemic impacts to a small extent.

UKRI took pragmatic steps to reduce bureaucracy and support EDI. UKRI attempted to positively impact EDI by encouraging active engagement from researchers and ROs to promote utilisation of existing procedures and support. For example, among doctoral

[329] "Our Evolving Policy for COVID-19 Doctoral Extension Funding."
[330] "UKRI and BEIS Management Information."
[331] "RAND Europe Survey."

students, UKRI encouraged students with a disability, those with long terms illness or those who are neurodivergent to continue to request Disabled Student Allowance (DSA) for needs emerging from COVID-19. UKRI asked ROs to ensure that assessments of DSA claims were updated and timely, although early reports suggested that access to such assessments were often delayed. Moreover, UKRI encouraged students to actively engage with and seek support from their supervisors in finding ways to adjust their research according to their needs and make sure they get sufficient support. UKRI also waived the requirement for medical certificates to qualify for sick leave for anyone infected with COVID-19, or for whom COVID-19 exacerbated an existing condition, such as mental illness, and allowed this leave to be in addition to the normal cap.[332]

Delegated responsibility of allocating funds benefitted EDI purposes but created some blind spots for BEIS and UKRI. For many interventions that were delivered at the institutional level, it was difficult for those delivering the funding to control for how the interventions affected groups with protected characteristics. Collecting such detailed data would be burdensome and complicated and is therefore typically not done by sector bodies or individual research institutions.[333] Still, sector body stakeholders believe that the interventions supported EDI by allowing flexibility for institutions in how to spend their funding, as they are best able to identify those most vulnerable to the pandemic's impacts.[334] For example, medical charities nominated the early career researchers they considered most in need of funding in their funding applications, and the criteria for these nominations often included EDI considerations.[335] As such, the responsibility to ensure a positive impact on protected groups was delegated over to the institutions, who were trusted to incorporate this consideration into their allocation of funding.[336] However, this also created blind spots in UKRI's ability to critique how fairly the processes had been administered at the institution level.

UKRI monitoring requirements, though focussed on being less burdensome, did require EDI practice updates. In certain cases, data on EDI was not collected explicitly as part of intervention monitoring[337] whereas in other cases (such as SURE and CISF), EDI monitoring was implemented. The monitoring and evaluation reports required for the SURE scheme for instance had a specific section on how the institutions had taken account of EDI. Institutions also used the interventions to specifically support disadvantaged groups. The University of Surrey used support from SURE towards a 'researcher disruption scheme' to enable those most affected by the pandemic to undertake research. In addition, some institutions put in place additional EDI monitoring to monitor the impact of the SURE loan. Post-award reporting by several of the institutions in recipient of CISF stated that in general support received from the intervention helped EDI. This was primarily through

[332] "UKRI and BEIS Management Information."
[333] "Sector Body Interview 06.", "Sector Body Interview 01," n.d.
[334] "Sector Body Interview 05," n.d., "Sector Body Interview 01.".
[335] "Sector Body Interview 01."
[336] "Programme Management Interview 09", "Programme Management Interview 10".
[337] "Beneficiary Focus Group 08 - National Academies."

supporting individuals to work from home (through additional office equipment) and offering a more flexible workplace. Institutions also specifically used the funding to support EDI activities; one institution stated that the fund had enabled the institution to create its first EDI strategy and action plan, and another had used the fund to support staff with exceptional special paid leave (i.e. support for care of dependents, clinically vulnerable and those unable to work from home).[338]

[338] "UKRI and BEIS Management Information."

6. Key Recommendations

This section provides recommendations based on the key findings and lessons learned in the sections above. It is evident that the research funding landscape has complex and multiple needs that no single process nor a simple cash injection can fulfil. However, certain steps taken can certainly be seen to add value in supporting the sector appropriately. These recommendations are aimed at UKRI and DSIT to support them in designing and delivering interventions. They also provide things to consider were another shock to the research sector to occur in future. These recommendations should be considered as part of a wider narrative of what has been learnt from across the R&D sector during the pandemic.

Recommendation 1: Targeted input from a range of representative stakeholders should be actively sought via representative forums or advisory groups to support proportionate intervention design so that interventions are attractively tailored to beneficiary needs.

During intervention design, particularly of SURE, there were challenges around collecting and collating data, integrating multiple data sources and conducting accurate modelling to predict need.[339] Interventions that were able to harness information from stakeholders including government departments, sector bodies, or recipient institutions themselves, were able to gather the relevant information needed to inform design. For example, for the Medical Charity ECR Fund, the AMRC played an important role in providing data to inform the subsequent focus of the intervention on ECRs.[340]

In periods of high uncertainty and time sensitive situations, utilising data from end users and beneficiaries may provide a more efficient and streamlined mechanism for gathering input into intervention design. This could be done via establishing groups and forums such as a Beneficiary Advisory Group. However, it should be noted that gathering accurate and comparable data across multiple institutions can be challenging. Developing templates and standardised asks of the end beneficiaries could simplify the process. Where possible, standardised data collection would also ensure that accurate and robust data is collected, ensuring comparable data and preventing bias from creeping in.[341] UKRI programme management interviews also highlighted the view that ROs stumbled upon several data gaps in their management information which proved challenging in allocating funding and prioritising research activity, and in general it was highlighted that a better understanding of university finances would support future intervention design.[342] Hence, involving a representative beneficiary advisory group in design phase, via on the ground data collection, may be beneficial.

[339] “UKRI and BEIS Management Information.”, “Internal Validation Workshop.”.
[340] “Programme Management Interview 04"
[341] “Internal Validation Workshop.”
[342] “Programme Management Interviews”

Recommendation 2: Where possible, internal business as usual activities should be reassessed and deprioritised to free up existing staff time and consideration should be given to using agencies to draw on temporary staff.

Based on the evidence on increased pressure and additional responsibilities taken on by existing members of staff within UKRI and BEIS, consideration could be given to onboarding temporary staff but more importantly to assess all business as usual activity and deprioritise some of these to free up staff time. This would allow the work to be prioritised, delegated, and shared, potentially reducing the burden on existing members of staff. However, there are trade-offs here in onboarding people and bringing them up to speed and the logistics of recruitment during crisis response which could be additionally burdensome.[343]

Recommendation 3: An increased limit on delegated spending should be put in place for UKRI and DSIT under extenuating circumstances to limit multiple approval steps in order to alleviate time pressures.

BEIS and UKRI worked to deliver at pace and timelines for intervention sign-off was significantly shorter as a result.[344] However, the need for multiple approval steps and in some cases further engagement with government stakeholders, such as HMT, resulted in additional time pressures and delays in launching the interventions.[345] To alleviate the time pressures, there may be cases where it is appropriate to increase the delegated spend ceiling for DSIT and UKRI as part of wider measures adopted in 'crisis response' protocol. Increasing the spend ceiling would reduce the number of approval steps required which would both minimise personnel time spent on the intervention and would allow for agility in making changes to the intervention without needing to seek multiple approvals again. The primary purpose here would be to create time saving measures by avoiding multiple approval steps. However, this is out of UKRI's control and would need to be negotiated with HMT to ensure fairness and proportionality to monitor use of funds at a critical time.

Recommendation 4: Delivering smaller interventions over multiple phases in a staged manner could allow iterative improvements, alleviate time pressures due to fewer approval steps required, and minimise time spent on the design of interventions

To complement **recommendation 3**, another option to alleviate time pressures could be to implement interventions in phases. This could mean that initial phases of the intervention are kept small in terms of scope and budget, which would require minimal approval from stakeholders such as HMT. As was seen with the DE intervention, learning from the first phase could be implemented through additional phases, and the intervention could be

[343] "Internal Validation Workshop."
[344] "Programme Management Interview 02"
[345] "Treasury Approvals Process for Programmes and Projects," GOV.UK, November 18, 2022, https://www.gov.uk/government/publications/treasury-approvals-process-for-programmes-and-projects., "Internal Validation Workshop.".

scaled up or further adapted if necessary.[346] This was seen as a more expedient and less burdensome process compared to developing a novel and large intervention such as SURE. This could be one way of reducing risk at the start whilst ensuring a rapid response to an emergency crisis.

Recommendation 5: Under extenuating circumstances, it may be beneficial to relax rules on financial underspend and allow beneficiary institutions to shift funds into the next financial year.

During the pandemic additional pressure was put on UKRI, BEIS and beneficiaries due to the need at which funding had to be spent within the financial year.[347] Financial spend cycles may be pragmatic when underspend or reallocated funds can be utilised in an emergency. However, some degree of flexibility in shifting funds into the next financial year and removing conditions on underspend when experiencing extenuating circumstances could be considered. Although this is likely to be difficult to transact depending on the source of funding, a blanket relaxing of underspend rules from HMT and government departments could be helpful in alleviating time pressures both on UKRI and DSIT, but also the beneficiaries themselves.

As mentioned in **recommendation 1,** representative beneficiary steering groups could be utilised as engagement forums and thus streamline stakeholder engagement in a time pressured situation. This could help maintain a better balance between extensive sector engagement and moving at pace.

Recommendation 6: The volume and purpose of new forums established should be reviewed to assess value versus burden to inform future response.

Communication, governance and delivery forums were seen to be effective in maintaining cohesion and rapid progress to the extent that some of them have been retained post COVID-19 response. However, the ongoing value of the range of forums and committees established warrants further assessment of their role versus administrative burden introduced.

Recommendation 7: An emergency protocol should be developed for ROs to fall back on in order to prioritise and allocate research funds locally.

For several of the interventions, decisions relating to the distribution and use of funding were largely delegated to ROs.[348] This reduced the administrative burden on BEIS and UKRI and provided ROs with greater autonomy regarding decision-making and the

[346] "Internal Validation Workshop."
[347] "UKRI and BEIS Management Information."
[348] "UKRI and BEIS Management Information."

prioritisation of funding. Despite generally being seen as a positive action,[349] this did place additional burden on the sector at an already challenging time. [350]

Developing an emergency protocol for ROs to utilise in order to prioritise and allocate funds may support streamlining of the process, whilst ensuring consistency and transparency across institutions. Ensuring clear guidance to institutions, a dedicated point of contact from UKRI, and ensuring early contact with the institutions would help mitigate some of the pressures faced. Designing and agreeing the protocol ahead of time during 'business-as-usual' will ensure that there is ample time for organisations to voice concerns and feedback, and ensure they have everything in place to deliver what is needed. Additionally, it would ensure that gaps within the ROs management or data systems are highlighted early so that this does not impede implementation during a crisis situation.

Recommendation 8: Communication should be limited through a few select channels to manage the volume of queries and avoid burden with more focus on clarity of messaging.

Multiple channels and forums of communications were established to engage with ROs and the research community.[351] However, this can result in a lack of clarity across the board and increase confusion amongst the sector. There were also additional challenges with ensuring that UKRI had up-to-date information on institutional contacts required to liaise with on intervention delivery.[352] Utilising strategic and limited channels of communication to administer information relating to the interventions may help avoid burden and allow a greater focus on the clarity of messaging. Utilising representative bodies like AMRC or UUK may further support strategic communication. Limited channels of communication, and utilising sector bodies, may also mitigate against the volume of queries potentially coming back to UKRI and DSIT from the research sector. In addition, a database which contains up-to-date information on points of contact would reduce the burden on UKRI in terms of locating contact information.

Recommendation 9: Internal data linking processes should be considered to link funding to reporting to aid assessment of impact and attribution.

BEIS and UKRI worked to keep monitoring requirements light-touch across the interventions, and recipients valued this approach.[353] However, the variation in reporting requirements across the suite of interventions, and lack of connectivity between funding

[349] "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE).", "Beneficiary Focus Group 07 - World Class Laboratories Fund.".
[350] "Beneficiary Focus Group 02 - Doctoral Extensions," n.d., "Beneficiary Focus Group 03 - Medical Research Charity ECR Fund.", "Beneficiary Focus Group 07 - World Class Laboratories Fund.".
[351] Annex B.
[352] "Internal Validation Workshop."
[353] "Beneficiary Focus Group 01 - Covid-19 Institute Support Fund.", "Beneficiary Focus Group 06 - Sustaining University Research Expertise (SURE).", "Beneficiary Focus Group 04 - BEIS Sponsored PSREs.".

allocations and subsequent reporting has resulted in a missed opportunity for quantitatively capturing the impact of the interventions.

Future response to such a situation may consider establishing a bespoke yet light touch reporting platform for all those in receipt of additional funding and support or the use of unique identifiers to link to existing mechanisms of funding. A platform like Researchfish or an internal management system modified to such effect may prove valuable. This should be a temporary measure until BAU reporting can resume or reporting can be subsumed into standard processes when value cannot be gleaned from further bespoke reporting. Where possible, standardised measures would be useful in order to collect data on key indicators across the suite of support packages.[354]

A secondary consideration should be on supporting agile monitoring to be able to utilise data more readily to feed into intervention improvement/changes as appropriate. This could take the form of the reporting platform creating monthly/quarterly reporting dashboards to feed into internal meetings.

Recommendation 10: Proportionate monitoring and evaluation principles should be established to inform monitoring requirements.

As mentioned above in **recommendation 9**, the variation in reporting requirements across the suite of interventions, and lack of connectivity between funding allocations and subsequent reporting has resulted in a missed opportunity for quantitatively capturing the impact of the interventions.

To support monitoring and evaluation activity, general principles should be established which could inform requirements and support data collection. Determining early which information should be captured and its intended purpose would support M&E activity and ensure that the information collected is fit for its intended purpose.

Recommendation 11: More work should be done at design stage of any intervention to stress test adaptability and restrictiveness of its terms and conditions in order to support flexibility and agility in an evolving external context.

BEIS and UKRI ensured adaptability of the interventions through allowing a degree of flexibility to receiving institutions in how they used funding.[355] However, recipients still flagged that further adaptability, particularly around the CoA would have been appreciated.[356] As suggested above, utilising beneficiary driven steering groups during the design and early implementation of the interventions may ensure appropriate design and mitigate against this in future. Moreover, establishing agile monitoring could also support adaptability where there is a feedback mechanism from ‘on the ground’ data to inform

[354] “Internal Validation Workshop.”
[355] “Sector Body Interview 07.”, “Sector Body Interview 05.”.
[356] “Sector Body Interview 07.”, “Sector Body Interview 03,” n.d.

changes. In addition, phasing the support allows for agility and change across phases which may further introduce opportunities for improvement in light of recipient feedback.

Recommendation 12: DSIT and wider government should engage with universities and stakeholders to consider feasible options for supporting non-UKRI grant funded research in a future crisis. The wider research sector including private sector should also be brought into this conversation in due course to develop a more comprehensive support package for the research sector.

One major challenge that the pandemic highlighted was the diversity across the research and innovation sector. For example, the support offered by UKRI and BEIS through the interventions conversely highlighted the lack of support for non-UKRI or self-funded researchers, which created challenges for ROs when administering the support. Similarly, although interventions provided valuable support to recipients and needs were seen to be met to some degree, the needs of specialist and less research-intensive universities were thought to be less considered during the design of some interventions.[357]

This warrants further consideration and planning between universities, DSIT and wider government as well as the private sector to develop a comprehensive support package for the sector. As suggested above, beneficiary engagement groups which have a diverse representation of the sector may mitigate against some of these challenges. Particularly, where students are not under the responsibility of UKRI, further consultation with ROs, the charity sector, private sector and government may enable support to be facilitated.

Recommendation 13: Future efforts should be put in place to mitigate the effects of a pandemic/crisis on non-academic staff and those not supported by UKRI.

As stated within **recommendation 12**, the pandemic highlighted the diversity across the research and innovation sector. As a result, there is a need for considering more comprehensive support packages to support the entirety of the research system such as technical support staff. This support should be complementary to wider interventions like the job retention scheme unveiled by the government. As above, this warrants further consideration and planning between universities, DSIT and wider government as well as the private sector to develop a comprehensive support package for the sector.

Recommendation 14: Anticipated impact and benefits should be determined up front with realistic expectations established and communicated to ROs.

Pragmatic and realistic benefits realisation plans and/or ToC should be developed for interventions put in place by UKRI and DSIT, with clear indicators of success, defined causal mechanisms and timelines, underpinned by appropriate monitoring. Benefit plans should be revisited once the scale of uptake has become apparent. The expectations

[357] “Sector Body Interview 06.”, “Sector Body Interview 02.”, “Beneficiary Focus Group 05 - Support for Small, Specialist Institutions,” n.d.

should be tested with beneficiaries through the steering group mechanisms in order to manage expectation from both sides.

Recommendation 15: Protocols developed for ROs to prioritise and administer funding, must contain explicit reference to EDI to ensure good practice.

Whilst delegating responsibility to ROs had several benefits, this resulted in the responsibility to ensuring a positive impact on protected groups was delegated to institutions who were trusted to incorporate this consideration into their allocation of funding.[358] However, this created blind spots in UKRI's ability to assess the effectiveness of the processes. As proposed in **recommendation 8**, if emergency protocols were developed for ROs to prioritise funding, these could include explicit reference on how to consider EDI, and how to prioritise across the institution. Furthermore, ensuring that monitoring requests take account of EDI considerations specifically would also ensure best practice.

Recommendation 16: In designing the interventions, DSIT and UKRI should ensure that EDI is considered and that interventions can be flexible enough to meet the diversity of needs.

The interventions were considered to partially mitigate the negative impacts of the pandemic on certain groups. Despite this, some beneficiary institutions did not feel that the impacts were sufficiently mitigated. As suggested in **recommendation 1**, where beneficiary steering groups are convened to support design of the interventions, these should also include diverse representation of beneficiaries to ensure that needs are considered and met early on.

Recommendation 17: It may be valuable to design interventions specifically targeted at vulnerable or disadvantaged groups to ensure their needs are met.

Alongside **recommendation 15** and **recommendation 16**, designing interventions specifically targeted at vulnerable or disadvantaged groups may better ensure their needs are met through the support offered. Targeting interventions in this way would further ensure that the intended groups not only benefit from the support, but that the intervention design is tailored to specific requirements.

Broader considerations

In addition to the specific recommendations above, there are broader considerations that have been surfaced in our evidence collection when reviewing secondary data, such as sector reports and blogs and engaging with interviewees. These broader considerations are not just pertinent for designing future interventions in response to a crisis but also in taking a more strategic view on how the sector should respond and conduct research in a future state of emergency.

[358] "Programme Management Interview 09", "Programme Management Interview 10".

- There should be an in-depth assessment of the balance that needs to be struck between continuation of existing research versus responding to research related to future crises. For COVID-19 both efforts were undertaken to some extent through the various government schemes put in place, however, a broader question remains on what the appropriate or optimal balance might be between these competing priorities in future incidences.
- There should be a wider conversation across UKRI/RE and universities on what instruments could support universities to improve their internal data capture and support adequate prioritisation in an agile and speedy manner. Challenges were experienced by universities and research institutes in undertaking research prioritisation at an organisational/department/grant level. These challenges came to the fore when decisions had to be made on reducing activity in the face of capacity constraints and when limited funds had to be allocated to prioritised projects based on need, protected characteristics and disciplines.
- There should be a targeted and pragmatic discussion across the sector on the balance between targeted support and un-hypothecated block funding, at times of crisis and how this balance should pivot from the business-as-usual model. It would be beneficial to consider where top-down mandates are necessary and critical and where local and decentralised processes and prioritisation should kick in. A variety of pandemic responses in the sector were shaped by both top-down mandates and by putting faith in local processes and people. Examples of both are present within the suite of interventions evaluated here (e.g. SURE vs CoA) however they only provide a limited evidence base on the value and effectiveness of these varying approaches. A similar dynamic was seen playing out during the pandemic where researchers were driving their own prioritised research agendas to respond to the pandemic and the government's top-down mandate created the ranking of urgent public health studies to prioritise effectively. A concerted effort should be made on drawing from this experience to set out where top-down and decentralised approaches should be put in place in the future for maximum value.

Annex A. Staff and stakeholder roles during intervention design and setup

This annex provides additional detail on the staff and stakeholder roles during intervention design and set-up. This includes (i) an overview of the teams responsible for the design and delivery of the interventions, (ii) additional detail on the stakeholder consultation platforms and (iii) an overview of the intervention approval steps.

Table 5. Overview of the teams responsible for design and delivery of interventions

Intervention	Responsible Teams
SURE Fund Teams working on the SURE fund were bespoke groups created for delivering the SURE fund	DESIGN - Co-designed between teams based within UKRI and BEIS. DELIVERY - UKRI: A 'Co-ordination Team' comprised of individual across UKRI, including RE, were responsible for managing the grant component. BEIS: Business Investment Team were responsible for the intervention's loan component.
Grant Extension Allocation (CoA) Teams working on the CoA comprised both bespoke and existing groups from UKRI	DESIGN – no bespoke teams involved. DELIVERY – A team of individuals from across UKRI councils and the UKRI Grants and Funding Policy Teams were created to deliver this intervention.
National Academy Extension (NAE)	DESIGN – No independent design process needed, as the intervention utilised an existing costed and uncosted extensions mechanism. Overall responsibility for intervention rested with BEIS sponsorship team. BEIS provided eligibility criteria. DELIVERY – National Academies responsible for delivery of intervention within wider accountability framework for BEIS-funded activities. Delivery was supported by Academies' established governance processes.

Doctoral Extensions (DE) Teams working on the Doctoral Extensions comprised both bespoke and existing groups from UKRI	Phase 1 DESIGN – UKRI Strategy Director and Director of Talent and Research. Councils Team was jointly led by Director for Talent and the Deputy Director Skills ESRC and Co-Chair of cross UKRI Research Careers Network. DELIVERY – UKRI Research Councils.
	Phase 2 DESIGN – UKRI Central/ Director of Talent and Research Councils Team was jointly led by Director for Talent and the Deputy Director Skills ESRC and Co-Chair of cross UKRI Research Careers Network. DELIVERY – UKRI Research Councils.
	Phase 3 DESIGN – UKRI Central/ Director of Talent and Research Councils Team was jointly led by Director for Talent and the Deputy Director Skills ESRC and Co-Chair of cross-UKRI Research Careers Network. DELIVERY – UKRI Research Councils.
COVID-19 Institute Support Fund (CISF) Teams working on the CISF were bespoke groups created for delivering the CISF intervention	This intervention was designed and coordinated by a team drawn from across UKRI which was headed by the (then) COO of NERC. The policy intervention was agreed by a panel including UKRI Interim Chief Operating Officer, UKRI Director of Governance, Assurance, Risk and Information Management and UK SBS Chief Operating Officer. The criteria for eligibility were signed off by HMT.
Repurposed Support for Small, Specialist Institutions (SSI)	DESIGN – no bespoke teams involved, co-design between BEIS and UKRI (specifically RE). Individuals from existing teams (such as research funding policy team) supported design.

	Teams working on this intervention were based on existing groups within UKRI and BEIS.
World Class Laboratories (WCL) Fund	DESIGN - Primarily individuals within UKRI and RE based within the existing infrastructure teams, working with a bespoke mechanism. DELIVERY – Team at RE with regular communication with the UKRI infrastructure team.
COVID-19 Support for BEIS sponsored PSREs	BEIS: International Research and Innovation Directorate. Sponsorship of PSREs lies within the Research Infrastructure and Establishments Team.
Changes to existing UKRI programmes to increase flexibility and reduce administrative burdens	UKRI: responsible for the implementation of the changes. Teams working on this intervention comprised both existing groups from within UKRI and bespoke groups created specifically for delivering the intervention.
Medical Research Charity Early Career Researcher Fund	BEIS: Place, Impact and Research (PIR) Team in SRID working closely with Medical Research Council and Department for Health and Social Care. Teams working on this intervention were bespoke groups created for delivering the intervention.

Source: RAND Europe analysis of internal documentation, and consultation with UKRI

Table 6. Stakeholder consultation platforms

Intervention	Stakeholder consultation platforms
SURE	Joint Ministerial Taskforce on the Sustainability of University Research Knowledge and Exchange (Members: DfE, the devolved administrations, UK and HE funding bodies, Universities UK, the Russell Group, the National Academies, CRAC/Vitae, and the Vice-Chancellors of three research intensive universities).

	The Stakeholder Group (Members: university Chancellors, the Russell Group, Universities UK, the Scottish funding council, UKRI, and RE). BEIS fortnightly discussions with DAs, HE funding bodies & UKRI. Consultations with Guild HE, Universities UK. UKRI strategy and RE Insights and Engagement Team existing regular meetings and additional ad hoc engagements with institutions, devolved funders and HE representative bodies.
Grant Extension Allocation (CoA)	UKRI strategy and RE Insights and Engagement Team regular and ad hoc engagements with institutions, devolved funders and HE representative bodies. Some specific meetings held with RG and UKRI to discuss specific delivery options. Chief Executive for NERC, ran a webinar with stakeholders. Key RO stakeholders were informed about Grant Extension Allocation in advance via email communication.
National Academies Extension (NAE)	Informal discussion took place between the BEIS sponsorship team and the National Academies, and between the Academies and host institutions.
Doctoral Extensions (DE)	Phase 1 UKRI Research Councils liaised with Trainee Grant Holders (TGHs) during the development and delivery of intervention. Pan-UKRI RCN coordinated engagement and dealt with queries from TGHs Guild HE meetings.
	Phase 2 As part of the Phase 1 review, UKRI commissioned NatCen to consult focus groups of students.

	As part of the Phase 1 review, UKRI carried out its own focus group consultation with key stakeholders.
	Phase 3 UKRI Strategy team and RE engagement teams manage stakeholder consultation, including through a snap survey of PVC-Rs to assess impacts on their research workforce (including students and appetite for further intervention. Russell Group meetings.
COVID-19 Institute Support Fund (CISF)	UKRI Finance Business Partners liaised directly with applying institutes. UKRI Strategy and Finance teams managed post-award monitoring surveys to institutes. UKRI Research Councils have ongoing conversations with institutes through existing channels, especially when institutes were bidding into the fund.
Repurposed Support for Small, Specialist Institutions (SSI)	RE Insights and Engagement Team regular and ad hoc engagements with institutions.
World Class Laboratories Fund (WCL)	Minor additional stakeholder consultation required as the intervention was largely reliant on existing mechanisms and relationships.
COVID-19 Support for BEIS sponsored PSREs	Relevant PSREs for each intervention were consulted as required.
Changes to existing UKRI programmes	Informal feedback from grant holders and institutions in the early days of the pandemic through multiple UKRI teams. Russell Group consultations.

Medical Research Charity Early Career Researcher Fund	Ongoing engagement with medical charities through AMRC.

Source: RAND Europe analysis of internal documentation and consultation with UKRI

Table 7. Overview of intervention approval steps

Intervention	Approval Steps				
	RE Council	**UKRI**	**BEIS**	**HMT**	**No. 10**
SURE Fund	N/A	AO approval	BEIS PIC	✓	✓
Grant Extension Allocation	N/A	ExCo AO approval	BEIS PIC	✓	N/A
National Academy Extension	N/A	N/A	Non-PIC BEIS approval	✓	N/A
Doctoral Extensions Phase 1	N/A	Sign-off by UKRI CEO acting as AO	Agreed at DG level in BEIS	✓	N/A
Doctoral Extensions Phase 2	N/A	UKRI Director of Talent Sign-off ExCo	SPOR committee sign-off	N/A	N/A

Doctoral Extensions Phase 3	N/A	ExCo	N/A	N/A	N/A
COVID-19 Institute Support Fund	N/A	UKRI CEO sign off and notification to ExCo	N/A	✓	N/A
Repurposed Support for Small, Specialist Institutions	Formal endorsement, not approval	N/A	N/A	✓	N/A
World Class Laboratories Fund	Research England Council approval for formula elements	ExCo AO approval	BEIS PIC	✓	No.10 approval as part of R&D roadmap
COVID-19 Support for BEIS sponsored PSREs	N/A	N/A	Non-PIC BEIS approval	✓	N/A
Changes to existing UKRI programmes to increase flexibility and reduce administrative burdens	N/A (Informed about QR reprofile)	GOLD (ExCo) approval UKRI AO approval	Non-PIC BEIS approval	HMT approval require only for QR reprofile	N/A

Medical Research Charity Early Career Researcher Fund	N/A	N/A	Non-PIC BEIS approval, following SRID/IRID committee assessment	N/A	N/A

Source: RAND Europe analysis of internal documentation, and consultation with UKRI

Annex B. Governance and delivery of interventions

This annex provides additional detail on the governance of the interventions. This includes (i) an overview of the governance of the interventions during delivery, (ii) an overview of the application processes, (iii) an overview of the monitoring processes and (iv) an overview of communication activities by BEIS and UKRI relating to the interventions.

Table 8. Governance of interventions at delivery stage

Intervention governance		
	UKRI	BEIS
SURE Fund Bespoke Delivery Mechanisms and Governance structures	SURE fund Delivery Board (Members: UKRI, BEIS Business Investment team, devolved funders) The Stability Group (informal forum for ongoing coordination and sharing thinking on UKRI's stabilisation work)	SURE fund Investment Board (Members: BEIS Business Investment team, UKRI, SRID) SURE fund Project Board (Members: UKRI, Das, DfE, and UKGI)
Grant Extension Allocation Existing mechanisms used for delivery with some adjustments for additional off-system processes	UKRI Grants and Funding Policy Teams with UKRI's Research Councils The Stability Group (informal forum for ongoing coordination and sharing thinking on UKRI's stabilisation work)	N/A

	Project Board chaired by UKRI Executive Chair of NERC. Internal Advisory Board, chaired by ESRC Chief Operating Officer.	
National Academies Extension	N/A	Intervention utilised National Academies' existing governance processes for costed extensions, with direction from BEIS sponsorship team.
Doctoral Extensions	UKRI Research Councils The Stability Group (informal forum for ongoing coordination and sharing thinking on UKRI's stabilisation work)	N/A
COVID-19 Institute Support Fund Bespoke and existing mechanisms used for delivery	COVID-19 Institute Support Fund Panel (Members: UKRI Chief Finance Officer, UKRI Director of Governance, Assurance, Risk, and Information Governance, and A senior operational leader from a non-	N/A

	involved UKRI Research Council) Once eligibility criteria were agreed with HMT, UKRI Research Councils contacted institutes and invited them to apply The Stability Group (informal forum for ongoing coordination and sharing thinking on UKRI's stabilisation work)	
Repurposed Support for Small, Specialist Institutions Existing delivery mechanisms and governance structures with some adjustments	RE The Stability Group (informal forum for ongoing coordination and sharing thinking on UKRI's stabilisation work)	N/A
World Class Laboratories (WCL) Fund Existing delivery mechanisms and governance structures with some adjustments	2020/21 Expansion of World Class Labs Review Panel	N/A

COVID-19 Support for BEIS sponsored PSREs	N/A	Existing BEIS governance/sponsorship teams
Changes to existing UKRI programmes to increase flexibility and reduce administrative burdens Existing delivery mechanisms and governance structures with some adjustments	No Cost Extensions: Overseen by GOLD (ExCo) and SILVER (new group set up to coordinate UKRI's internal COVID-19 response) response mechanisms. Reprofiled QR: Overseen by RE	N/A
Medical Research Charity Early Career Researcher Fund	UKRI, including Medical Research Council, working with AMRC and DHSC	N/A

Source: RAND Europe analysis of internal documentation, and consultation with UKRI

Table 9. Application processes

Intervention	Application processes
SURE Fund	a) Interested institutions submit EOI and agree to share TRAC data and data on international student fees for 2020-21 with BEIS and UKRI. b) Institutions are given opportunity to make final enquiries prior to submission. c) Institutions submit SURE plans, financial data, financial due diligence information, and evidence of governing body approval for review and approval by the loans and grant agents. Participating institutions are also asked to agree to additional pay transparency and financial reporting requirements as part of the intervention's conditions.

	D) Delivery board considers the assessments of the loans and grant agents. Once the Delivery board's assessment is completed, and sign-off recommended, the Investment Board reviews the SURE plans and the delivery board's assessment and comes to a final decision. e) The recipient institution has 5 days to accept the SURE fund award.
Grant Extension Allocation	Initial Grant Extension Allocation a) UKRI sends allocation letter (including award size) and T&Cs to eligible institutions. b) Eligible institutions accept the T&Cs and prepare T&Cs compliant Governance Plan for how funds will be administered. c) Upon submission of governance statements, UKRI carries out an assessment of Governance Plan. If the Plan is deemed acceptable, funds are released to eligible institutions. Where Plans were deemed unacceptable, they were returned for further revision. Additional Grant Extension Allocation a) Institutional wishing to have underspend returned to them were asked to complete Additional Grant Extension Allocation form. b) Institutions complete and submit Additional Extension Allocation forms. c) UKRI reviews institutions' Additional Grant Extension Allocation forms and, if appropriate, approves the return of accrued underspend to eligible institutions as a new Grant Extension Allocation award.
National Academy Costed Extensions	Each National Academy was responsible for delivering funding through internal, established processes
Doctoral Extensions	Phase 1:

	a) Through discussion with students, supervisors, and TGHs eligible doctoral students are identified. b) Students and supervisors prepare short summary explaining why they need doctoral extension grant. Meanwhile, TGHs complete surveys and prepare accompanying student data for submission as part of MEL requirements. c) TGHs inform UKRI of the number of students in need of support, as well as the type of support required. d) UKRI reviews documents and confirms final year students' funding recipient status. e) UKRI confirms additional funding awarded to eligible doctoral students and release additional funding to TGHs. f) TGHs release funding to eligible doctoral students.
	Phase 2: a) UKRI calculates RO block grants allocation based on number of UKRI funded students registered in JE-S and announces list of eligible institutions. b) Eligible institutions create governance plans and accompanying processes for assessing and managing requests for extensions in line with UKRI guidance. c) Eligible institutions submit governance plans to UKRI and thereby agree to UKRI's process and expectations. d) UKRI assesses institutions governance plans and, upon assessment, allocates additional funding to eligible institutions as a block grant.
	Phase 3: a) TGHs develop internal processes for assessing eligibility and prioritising support in line with UKRI guidance. Eligible

	institutions also, if necessary, decide upon potential reduction in recruitment to finance extensions. b) Students submit application for extensions to TGHs alongside an account of how they have been impacted by the COVID-19 pandemic c) TGHs assess who is eligible for additional support. d) TGHs release additional funding.
COVID-19 Institute Support Fund	a) UKRI Research Council invite eligible institutions to apply to fund. b) Institutes prepare applications including required financial schedules, narrative piece explaining financial needs, and accompanying evidence. c) Institute Board reviews and validates applications. d) UKRI Internal Review Team reviews institutions applications. e) CISF Panel review applications and make final decisions. f) clarification questions sent to institutes. g) UKRI Chief Financial Officer endorses outcomes of CISF review and seeks final approval from UKRI CEO. h) UKRI formally notifies institutes of their allocations. i) Institutes have two days to accept UKRI's offer.
Repurposed Support for Small, Specialist Institutions	No application process as such, but communication between the eligible institutions and UKRI.
World Class Laboratories (WCL) Fund (Package 1)	a) Eligible institutions are sent an award offer letter. b) Eligible institutions formally accept award, including T&Cs, and confirm whether they will be able to use funding within stipulated timeframe. Institutions are also asked to indicate whether they could spend any additional funding within time frame.

	c) Allocation adjustments are made based on intuition responses. d) Where institutions indicate that they will not be able to allocate all funding within the required timeframe, unallocated funding is repurposed for institutions that they could spend additional funding with indicated timeframe. e) Funding is allocated to eligible institutions.
COVID-19 Support for BEIS sponsored PSREs	No application required. BEIS delivered financial support through existing sponsorship structured to relevant PSREs.
Changes to existing UKRI programmes to increase flexibility and reduce administrative burdens	N/A
Medical Research Charity Early Career Researcher Fund	Charities asked to nominate up to 10 funded ECRs and doctoral students. This information was collected collated by AMRC. Details were then given to Medical Research Councils, where it was held. Non AMRC members applied directly to the MRC. This information was used by UKRI to draw up allocations for eligible recipients using a formula..

Table 10. Monitoring requirements

Intervention	**Monitoring requirements**
SURE Fund	Annual monitoring reports covering the use of the fund's grant and loan components.
Grant Extension Allocation	Final report and final expenditure statements submitted for review against T&C before final instalment of CoA is made. Official Development Assistance (ODA) grants were reported separately from the rest of CoA. ODA grants also had an interim reporting stage halfway through the original CoA term.

National Academy Extensions	The BEIS sponsorship team and the Academies periodically reviewed funding needs, which were refined as requirements became clearer. Interim reports from the Academies on awards were produced. National Academies to produce final reports during summer 2022 in time for phase II of the evaluation.
Doctoral Extensions	Phase 1: survey data; UKRI also requested information on students' stipend and fee levels, the proportion of stipend and fee levels supported by UKRI, and preliminary indications from funding partners about their ability to co-fund extensions. TGHs were also asked to make sure that Je-S diversity data was up to date.
	Phase 2: monitoring relied on some existing process linked to bespoke reporting requirements. ROs provided details on which students had been granted extensions, which was linked to specific data gathered from bespoke reporting requirements. Additional links were made to existing Je-S data. TGHs were asked to update diversity data. A final report on funding details and allocation processes was also requested alongside an expenditure statement.
	Phase 3: standard annual reporting to UKRI with some additional questions to answer.
COVID-19 Institute Support Fund	Institutes fill out reporting template to evidence how funding was spent. Report is reviewed and approved by the CISF panel
Repurposed Support for Small, Specialist Institutions	RE did not undertake a monitoring exercise of this funding as part of the efforts to not burden providers during a time of significant pressure.

World Class Laboratories (WCL) Fund (package 1)	End-of-year report is submitted on the use of funding. Vice-Chancellors formally accept funds and provide direct accountability on them being used for intended purposes.
COVID-19 Support for BEIS sponsored PSREs	NPL intervention: M4R: Gateway4Reviews planned for August and December 2020. NPL created a live reporting dashboard to triage incoming monitoring and reporting data for scheme beneficiaries. A beneficiary survey was conducted for all projects supported by the scheme. A Scope 2 Evaluation plan was created by the NPL which would use existing monitoring data as required. NPL equity injection: Based on documents reviewed by the RAND Europe study team, there is no evidence of additional monitoring and reporting requirements associated with the NPL equity injection.
	Met Office dividend reduction: Based on documents reviewed by the RAND Europe study team, there is no evidence of additional monitoring and reporting requirements associated with the Met Office dividend reduction.
Changes to existing UKRI programmes to increase flexibility and reduce administrative burdens	As part of a feedback gathering exercise on REF 2021, submitting institutions were asked to comment on the impact of COVID-19 on their preparations for the REF exercise, and the effectiveness of the mitigations put in place by the REF team.
Medical Research Charity Early Career Researcher Fund	Funded projects provided updates on outputs, outcomes, and impacts from funded research to their charity providers. Charity providers updated funders (BEIS and DHSC) on output, outcome, and impact data as require. Responsibility for monitoring of this funding sits with the Place Impact and

	Research Team, G6 for Research Assessment, Bureaucracy and Culture. Charities were asked to provide the following information in return for support: The names of up to 10 early career researchers currently being supported through the charity and the priority order of these; Total number of early career researchers currently supported by the charity that are not included in the nominations; The name of the relevant universities/research institutions where the nominated researchers are sited; The research project title; The grant reference which the HEI will use to identify the grant; The amount of support being provided by the charity for each researcher in 21-22 and total award over time; The percentage or level of 'full economic cost' included in this funding (if known); Confirm how the total amount of funding will help the charity.

Table 11. BEIS and UKRI communications, in scope of the evaluation

Interventions	Communications
SURE Fund	[Explainer of intervention] 'Sustaining University Research Expertise (SURE) package – GOV.UK (www.gov.uk)'. 27/06/2010. [Application resources] 'Sustaining University Research Expertise (SURE) fund: guidance for higher education providers'. 16/11/2020.
Grant Extension Allocation	[Review of intervention] 'CoA Equality Impact Assessment'. 10/11/2021. [Announcement] 'The UKRI COVID-19 Grant Extension Allocation – announcement'. 11/11/2020. [Application resources] 'CoA Governance template'. 11/11/2020. [Application resources] 'CoA ODA interim reporting template'. 11/11/2020. [Application resources] 'Guidance on the additional CoA awards, completing the additional CoA application form and the additional CoA terms & conditions'. 12/10/2021 [Explainer of intervention] 'UKRI COVID-19 Grant Extension Allocation – FAQs'. 12/10/2021. [Application resources] 'Guidance for completing the UKRI COVID-19 Grant Extension Allocation (CoA) Final Report 2021'. 15/09/2021. [Application resources] 'Terms and Conditions – UKRI COVID-19 Grant Extension Allocation'. 19/03/2021. [Application resources] 'Final Reporting Template'. 21/09/2021. [Application resources] 'Additional COVID-19 Grant Extension Allocation Application Form'. 07/10/2021. [General information] Guidance for applicants, students and award-holders impacted by the pandemic – UKRI.

National Academy Extensions	[Announcement] 'BEIS research and development (R&D) budget allocations 2021 to 2022 – GOV.UK (www.gov.uk)'. 27/05/2021
Doctoral Extensions	[Explainer of intervention] 'Our evolving policy for COVID-19 doctoral extension funding – UKRI'. [Announcement] 'UKRI-11112020-COVID-19DoctoralExtensionsPolicyPhase2PolicyStatement.pdf'. 11/11/2020. [Announcement] 'UKRI-240321-PolicyStatementFinal.pdf'. 03/2021. [Review of intervention]. 'EQUALITY IMPACT ASSESSMENT (ukri.org)'. 11/2020. [Review of intervention] 'UKRI-11112020-ReviewOfExtensionsForStudentsImpactedByCovid-19.pdf'. 11/11/2020. [Application resources] 'UKRI-11112020-COVID-19DoctoralExtensionsPolicyPhase2TermsAndConditions.pdf'. 11/11/2020 [Application resources] 'UKRI-240321-GuidanceforStudentsandTrainingGrants.pdf'. 24/03/2021. [Application resources] 'UKRI-040521-Governance-plan-template-phase-2.pdf'. 04/05/2021. [Open letter] 'Open letter to UKRI students – Update on extensions for doctoral students impacted by the COVID-19 pandemic'. 17/08/2020. [Open letter]. 'Support for doctoral research students must go to those who need it most'. 22/02/2021.
COVID-19 Institute Support Fund (CISF)	N/A
Repurposed Support for Small, Specialist Institutions	[Blog post] '£10m to alleviate research institution charity funding shortfall – UKRI'. 26/01/2021.

World Class Laboratories (WCL) Fund (package 1)	[Explainer of intervention] 'UKRI World Class Laboratories Fund – UKRI'.
COVID-19 Support for BEIS sponsored PSREs	N/A
Changes to existing UKRI programmes to increase flexibility and reduce administrative burdens	General: [Informative announcement] 'Specific guidance to UKRI, from BEIS, regarding the operation of Research England'. 05/10/2021. [Informative announcement] 'Specific guidance to UKRI, from BEIS, regarding the operation of Research England for 2021-2022'. 05/10/2021. [Informative Announcement] 'Research England HEP Circular letter Funding for 2021-22'. 30/09/2022
	REF: [Informative announcement] 'Guidance on revisions to REF 2021' [Informative announcement] 'Guidance on further contingency measures'
	Research and Knowledge Exchange Funding: [Informative report and data] 'Research and knowledge exchange funding for 2021-22 Recurrent and single year grant allocations'. [Data]. 'RE-191021-ResearchKnowledgeExchangeFundingAnnexA-2021-22'. 19/10/2021. [Data]. 'RE-04102021-ResearchKEF-AnnexA-InstitutionBreakdown-2020-21'. 04/10/2021.
Medical Research Charity Early Career Researcher Fund	[Announcement] BEIS research and development (R&D) budget allocations 2021 to 2022 – GOV.UK (www.gov.uk)

	[Explainer of intervention] 'Letter to AMRC with scheme information' [Explainer of intervention] 'Charity Q&A, FAQs' [Tweet announcement] 'Funding support scheme for biomedical fundraising charities' [Direct correspondence] 'Direct emails sent from MRC to eligible charities' [Direct correspondence] 'Changes to implementation guidance communicated directly via email to eligible institutions'
Cross-cutting	[Report] 'NCUB State of the Relationship 2021 Analysing Trends in University-Business Collaboration'. 2021. [Blog post] 'Pressures on staff are the greatest concern for university research leaders – by Tom Sastry of Research England'. 17/11/2021. [Article] 'Pandemic darkens postdocs' work and career hopes' [Article] 'Nature's survey of this key segment of the scientific workforce paints a gloomy picture of job-loss fears, interrupted research and anxiety about the future.' 08/09/2020. [Informative report] '2021/22 budget allocations for UK Research and Innovation'. 2021. [Application resources] 'Guidance for applicants, students and award-holders impacted by the pandemic'

Annex C. TRAC analysis

This annex provides details on the TRAC analysis undertaken for this project. Note that as RAND Europe was not able to access the raw institutional data required, UKRI conducted the analysis and provided it to RAND Europe for the purpose of this evaluation. The analysis does not include the following interventions: Medical Research Charity Early Career Researcher Fund, UKRI Doctoral Extensions (DE), or the BEIS COVID-19 PSRE interventions.

Table 12. Analysis of research deficit, by UK region[359],[360]

Region	Percentage of universities in region that had a higher research deficit since COVID-19
Wales	63%
North East	60%
London	37%
South West	36%
East Midlands	33%
Yorkshire and the Humber	30%
North West	29%
Scotland	22%
East of England	20%
South East	19%
West Midlands	18%

[359] Note that Northern Ireland was removed from the analysis when sharing with RAND Europe as individual institutional incomes could be easily identified. Based on deflating TRAC research deficit using GDP deflator (HMT) November 2023. Expressed in 20/21.
[360] Based on deflating TRAC research deficit using GDP deflator (HMT) November 2023. Expressed in 20/21

Table 13. Analysis of research deficit, by TRAC group[361]

TRAC group	Percentage of universities in TRAC group that had a higher research deficit since COVID-19
F	53%
E	50%
C	22%
D	20%
A	18%
B	17%

Table 14. Proportion of research deficit covered by intervention support, by UK region[362]

UK region	Percentage of research deficit in 2020/21 equivalent to the interventions
All universities	9.0%
East of England	16.8%
South East	11.3%
South West	10.2%
London	9.1%
Wales	8.6%
North West	8.5%
East Midlands	8.4%
Yorkshire and the Humber	7.7%
West Midlands	6.5%

[361] Based on deflating TRAC research deficit using GDP deflator (HMT) November 2023. Expressed in 20/21
[362] Note that Northern Ireland was removed from the analysis when sharing with RAND Europe as individual institutional incomes could be easily identified.

Scotland	6.3%
North East	6.2%

Table 15. Proportion of research deficit covered by intervention support, by TRAC group

TRAC group	**Percentage of research deficit in 2020/21 equivalent to the interventions**
All universities	9.0%
TRAC group B	11.4%
TRAC group A	10.3%
TRAC group F	6.8%
TRAC group C	5.7%
TRAC group E	4.0%
TRAC group D	2.7%

Table 16. Proportion of research income covered by intervention support, by UK region

Splits (University/Trac group/region)	Percentage of research income in 2020/21 equivalent to the interventions
All universities	3.2%
East Midlands	4.8%
North East	4.0%
North West	3.9%
South West	3.8%
South East	3.8%
Yorkshire and the Humber	3.8%
Wales	3.7%
London	3.5%
West Midlands	3.4%
East of England	2.6%
Scotland	1.2%

Table 17. Proportion of research income covered by intervention support, by TRAC group

Splits (University/Trac group/region)	Percentage of research income in 2020/21 equivalent to the interventions
All universities	3.2%
TRAC group C	5.1%
TRAC group E	5.1%
TRAC group B	4.9%
TRAC group F	4.5%
TRAC group D	4.4%
TRAC group A	2.8%

Annex D. Methodology

This annex provides additional information on the methodology for this study.

Scoping interviews

We conducted five scoping interviews with stakeholders responsible or with oversight for the interventions from both BEIS and UKRI. These interviews were aimed to gather some initial context and information on the interventions to inform further design of the evaluation. The interviews were semi-structured and asked questions on the following topics: purpose and aims, scope, context, and details around the implementation processes including eligibility, stakeholder involvement, monitoring and evaluation, and wider context.

To maintain anonymity, all interviews are referenced throughout this report using the format "[Interview type] Interview XX, where [Interview type] indicates if it is a scoping, program management or sector body interview, and XX is a numeric identifier given to each interview.

Review of secondary data and documentation

Secondary documentation provided by BEIS and UKRI was reviewed, which included, but was not limited to, policy documents such as intervention guidance, UKRI Executive Committee (ExCo) papers, FAQ sheets and sector announcements as well as internal email threads, council meeting notes, and internal financial data. The documentation was coded and analysed qualitatively, using MAXQDA. A codebook was set up at the beginning of the analysis based on the evaluation framework and was refined throughout the analysis to best capture the information. Coding was conducted through a segment-by-segment approach, and the study team regularly checked in with each other to discuss the process and align interpretations of codes. Once all documents had been coded, segments attached to each code were analysed to identify themes and patterns.

Quantitative analysis was conducted on secondary data that was provided by BEIS and UKRI on finances awarded to institutions in receipt of interventions as well as accessed online through sources including Higher Education Statistics Agency (HESA) (data on staff and student numbers, financial data) and Researchfish (data on research outputs/outcomes associated with UKRI grants) and TRAC (data on research income). This data was analysed through descriptive statistics using the statistical software R.

Interviews with programme management and sector bodies

We conducted 10 interviews with programme management at BEIS, UKRI and Research England (RE) who were involved in designing and delivering the interventions. These interviews provided insights into how these processes were carried out, what challenges were faced and what lessons can be learned. Some interviews focused on specific

interventions and associated processes while other interviews discussed multiple interventions and general take-aways. An additional seven interviews were conducted with sector body stakeholders to gain better insight into how the interventions were received by the sector and what impacts they had. These enabled a better understanding of recipient's experiences during the pandemic and how these were affected by the interventions. The interviews focused on different interventions depending on which sector body the interviewee(s) represented, although most interviews were able to provide a perspective on multiple interventions.

All interviews took the same approach as the scoping interviews.

Surveys to institutions and researchers

A RAND Europe survey was distributed to institutions that received one or multiple of the interventions to gather information from the institutional leadership on the impact of receiving the interventions and how their design and delivery was experienced by the sector. The survey was comprised of 39 questions, including multiple choice, matrix of choice and free text questions. A privacy policy was attached to the email invitation and linked in the online survey page which described how responses would be used and the respondents' rights under GDPR. The survey was sent to a sample of 187 institutions, provided by UKRI and BEIS, and was completed by 61 representatives of institutional leadership at these institutions (one respondent per institution), equating a response rate of 33%. Free text responses were analysed qualitatively in Excel by reading through the responses and identifying themes and patterns. Additionally, a sentiment analysis was conducted to understand the overall sentiment of the responses where appropriate and was presented in a colour coded table.

Vitae ran the Wave 3 of a survey on the impact of the Covid-19 pandemic on researchers and research. This was distributed to the cohort of researchers who have previously engaged in Waves 1 and 2 of the survey. This replicated questions from the previous surveys enabling longitudinal comparison of researchers' working hours, research activities and the ongoing impact of Covid-19 on researchers and their career prospects at four time points (Pre-Covid, May/Jun 2020, Feb/Mar 2021, Feb/Mar 2023). It also included bespoke questions pertaining to the stabilisation interventions. The survey consisted of 37 questions, including multiple choice, matrix of choice and free text questions. Qualitative and quantitative analysis was conducted by Vitae based on input from 581 respondents who could be matched back to Wave 1. This equated to a response rate of 18% of Wave 1 respondents who agreed to be recontacted.

Quantitative data analysis and portfolio review

The portfolio review aimed to characterise the stabilisation measures implemented by BEIS and UKRI to support universities and research organisations during the COVID-19 pandemic. To this end, we assessed the levels of support offered and their distribution across the UK research ecosystem. Our analysis covered the following BEIS and UKRI

interventions: 1) COVID-19 CoA, 2) WCL, 3) SURE, 4) MRC ECR Fund, 5) COVID-19 Institute Support Fund, 6) Repurposing support for Small, Specialist Institutions (SSI), and 7) changes in existing UKRI programmes to increase flexibility or reduce administrative burden (additional QR funding). Specific analysis the Doctoral Extensions and BEIS PSRE intervention was not included. In the case of the DE, this was due to the intervention not being provided to institutions in the form of additional funding, and in the case of the PSRE intervention, this was due to the nature of the intervention which involved a combination of cash injection and dividend reduction making comparison across the institutions more challenging.

COVID-19 interventions were delivered across Higher Education (HE) providers, research institutes, learned societies, associations, accelerators, and other organisation types. To account for potential differences in the context in which interventions were implemented, we categorised organisations in two groups: 1) HE providers listed on the HESA pen data portal, and 2) organisations not listed in HESA. This categorisation provided a proxy for differentiating between HE providers (e.g. universities) and other types of organisations.

For organisations listed in HESA, we extracted data on total number of students, academic staff, research income (e.g. research grants and contracts) and total income from HESA's open data portal. Based on the income data, we defined research intensity by assessing the level of research income as a proportion of total income for each HE provider. The latest data available from HESA at the time this analysis was conducted was from 2019/2020. For organisations not listed in HESA, we extracted data on total income and total staff from annual reports. To ensure coherence with the data extracted from HESA, we considered annual reports from 2019/2020. This timeline provides a snapshot of the UK research landscape at the onset of the COVID-19 pandemic. All data is presented as descriptive statistics.

Focus groups

Focus groups were conducted with institutions in receipt of intervention support. Across the interventions, institutions were randomly sampled to create a subset to contact regarding participation in the focus groups. Initial contacts at each institution were provided by UKRI and BEIS, and these individuals were followed up with to provide the research team with the names of appropriate individuals to involve in the focus groups. The focus groups covered several aspects relating to the intervention including how the intervention(s) were implemented, the support offered by the intervention(s) and how the funding was utilised, what research activities were supported, whether there were unmet needs, and what lessons could be learnt for a future crisis response. In total 8 beneficiary focus groups were conducted covering the following interventions (one per intervention listed here): COVID-19 Institute Support Fund, Doctoral Extensions, Medical Research Charity ECR Fund, PSRE, support for Small, Specialist Institutions, SURE, WCL Fund and Grant Extension Allocation (National Academies). The total number of participants across all interventions was 24, with the number ranging between 2 – 5 for each focus group. Further details can be found in

Annex D. The planned focus group to cover the Grant Extension Allocation and Changes to UKRI existing processes, was unable to go ahead due to participant availability. This was mitigated for by triangulating evidence relating to the CoA and Changes to Existing Processes from the document review, interviews and survey data.

To maintain anonymity, focus groups are referenced throughout this report using the format ‘Focus group – XX’, and individual views of participants were not identified.

Validation workshop

A 3-hour workshop was conducted with key stakeholders from UKRI and DSIT involved in the suite of interventions and the commissioning of this evaluation. The first half of the workshop was utilised to discuss emerging findings from the report and assess the strength of the evidence for further nuancing where appropriate. Based on the evidence which emerged, the focus of the workshop shifted to what remains to be understood in terms of impact of interventions, what is feasible to measure moving forward and a reflection on the ToC.

Table 18. Number of participants across programme management interviews

Interview type	**Number of individuals interviewed**
Design and oversight	5
Operations	2
Finance	1
Charities	2
PSREs	3
World Class Laboratories	2
Covid-19 Institute Support Fund	2
Small specialist institutions	1
Comms	1

Table 19. Number of participants across sector body interviews

Organisation	Number of individuals interviewed
Universities UK	1
Russell Group	1
Guild HE	1
University Alliance	1
AMRC	1
BUFDG	1
Million Plus	1

Table 20. Number of participants across focus groups

Intervention	Number of interviewees
Medical Research Charity Early Career Researcher Fund	5
Additional funding through the World Class Laboratories Fund (WCLF)	2
UKRI Doctoral Extensions (DE)	3
Sustaining University Research Expertise (SURE)	4
Repurposing support for small, specialist institutions (SSI)	2
BEIS COVID-19 PSRE interventions	2
UKRI COVID-19 Institute Support Fund FY 20/21 (ISF)	3
Grant Extension Allocation (National Academies)	3

Annex E. Overview of interventions

This annex provides an overview of the interventions within scope of this evaluation. This includes: aim of the scheme, who the intervention was targeted at, size of fund, timing, and an overview of each phase if applicable.

Table 21. Overview of interventions

Intervention	Aim	Primary target	Approximate value funded	Timing
Sustaining University Research Expertise (SURE)	The SURE fund aimed to offset losses to key research income streams as a direct result of the pandemic and preserve capacity and capability of research departments.	Universities	£21.7 million	1 package announced June 2020.
UKRI COVID-19 Grant Extension Allocation (CoA) and National Academy Extensions	This intervention aimed to provide research organisations with the resources needed to sustain UKRI funded research grants and fellowships affected by the pandemic. Funding was awarded to institutions who then allocated this to individual grants. The NA extensions aimed to provide the four National Academies with the resources to sustain grant research and fellowships impacted by the pandemic – including associated PDRA positions and PhD	Universities and National Academies	£179.7 million	1 package announced June 2020.

	studentships – through costed extensions.			
UKRI Doctoral Extensions (DE)	This intervention aimed to address the immediate risk that doctoral candidates would not be able to complete their research projects, and therefore risking the investment in doctoral training.	Universities	*	Phase 1 announced April 2020. Phase 2 announced November 2020.
UKRI COVID-19 Institute Support Fund FY 20/21 (CISF)	This fund was created to support the delivery of science, research and operations within major environmental science facilities, and support institute short-term stability as well as prevent deterioration of national scientific capabilities.	Strategically important institutes	£13.6 million	Application date February 2021.
Repurposing support for small, specialist institutions (SSI)	Research England repurposed funding from the Specialist Institution Funding to support specialist institutions to mitigate losses caused by reductions in charity research funding.	Specialist Institutes	£10 million	Announced in January 2021
Additional funding through the World Class Laboratories Fund (WCL)	Funding was provided through Research England (and devolved funding bodies in Scotland, Wales and Northern Ireland) to enable providers to make existing research infrastructure COVID-19 safe through modifications.	Universities	£50 million to England in Package 1 and £3.5 million to devolved nations in Package 1	Package 1 announced October 2020 (2 more packages announced subsequently but not in scope of this evaluation)

Medical Research Charity Early Career Researcher Fund	This fund was aimed at mitigating the impacts of COVID-19 on the research funded by the medical research charities. The fund targeted early-career researchers who were funded by AMRC members and was delivered by UKRI.	Medical Research Charities	£20 million. £5 million towards the fund was from the National Institute for Health and Care Research (NIHR), funded by DHSC	Announced in May 2021. Scheme opened in September 2021 with charities informed of funding award amounts in December 2021.
BEIS COVID-19 PSRE interventions	BEIS released additional funding to support the continuation of research activities across three of its Public Sector Research Establishments. This included The Met Office, the National Physics Laboratory and the UK Atomic Energy Authority.	BEIS sponsored PSREs	*	

** From the documentation available, no monetary amount associated with DE as intervention was not provided to institutions in the form of additional funding. In the case of the PSRE intervention the intervention involved a combination of cash injection, making absolute value calculations challenging.*

Annex F. Abbreviations

AHRC	Arts and Humanities Research Council
AMRC	Association of Medical Research Charities
AO	Accounting Officer
BAU	Business as usual
BEIS	Department for Business, Energy and Industrial Strategy
CoA	Grant Extension Allocation
CISF	COVID-19 Institute Support Fund
CJRS	COVID-19 Job Retention Scheme
COVID-19	Coronavirus disease
DA	Devolved Administrations
DE	Doctoral Extensions
DfE	Department for Education
EDI	Equality, Diversity and Inclusion
EIA	Equality Impact Assessment
EOI	Expression Of Interest
EPSRC	Engineering and Physical Sciences Research Council
ExCo	Executive Committee
FAP	Funding Assurance Programme
FY	Financial Year
GDP	Gross Domestic Product
HE	Higher Education
HEI	Higher Education Institution
HEBCI	HE Business and Community Interaction

HEP	Higher Education Provider
HERC	Higher Education Research Capital
HESA	Higher Education Statistics Authority
HMT	Her Majesty's Treasury
IP	Intellectual Property
Je-S	Joint Electronic Submission system
MPRG	Major Projects Review Group
N/A	Not Applicable
NAE	National Academy Extensions
No.10	Number 10, Prime Minister's Office
NPL	National Physical Laboratory
OBR	Office for Budget Responsibility
ODA	Official Development Assistance
OfS	Office for Students
PIC	Projects and Investments Committee
PRES	Postgraduate Research Experience Survey
PSRE	Public Sector Research Establishment
QR	Quality-related Research
RE	Research England
REF	Research Excellence Framework
R&I	Research and Innovation
RO	Research Organisation
SME	Small and Medium sized Enterprise
SRO	Senior Responsible Officer

SSI	Repurposing support for small, specialist institutions
STEM	Science, Technology, Engineering and Mathematics
SURE	Sustaining University Research Expertise
T&C	Terms and Conditions
TBC	To Be Confirmed
TGH	Trainee Grant Holders
ToC	Theory of Change
UCAS	Universities and Colleges Admissions Service
UCU	University and College Union
UK	United Kingdom
UKGI	UK Government Investments
UKRI	UK Research and Innovation
UUK	Universities UK
WCL	World Class Laboratories

Annex G. UKRI and BEIS management information references

This annex lists the internal documents containing UKRI and BEIS management information, which were reviewed for this study and are referenced throughout the report. Each document is referenced as [Source] – [Intervention] – [‘Document title’].

BEIS Teams - General - ‘Charities SPOR Case_24 June - Clean’

BEIS Teams - Grant Extension Allocation - ‘Research and Innovations Grant Extension Allocations’

BEIS Teams - Sustaining University Research Expertise (SURE) - ‘Annex 1 University Research Sustainability’

BEIS Teams - Sustaining University Research Expertise (SURE) - ‘Annex B - Draft Announcement’

BEIS Teams - Sustaining University Research Expertise (SURE) - ‘Draft Guidance for SURE V3’

BEIS Teams - Sustaining University Research Expertise (SURE) - ‘ExCo June 2020 Co-Funding Update and next Steps’

BEIS Teams - Sustaining University Research Expertise (SURE) - ‘SURE Fund Draft FBC for PIC Keyholders’

BEIS Teams - Sustaining University Research Expertise (SURE) - Annex 2 - ‘University Research Stabilisation Funding’

Client Email - BEIS Sponsored PSREs - ‘NPL Cash Position v2.2’

Client Email -BEIS Sponsored PSREs - ‘M4R Business Case V3’

General - ‘Information Provided by BEIS and UKRI Based on Data Asks from RAND Europe’

UKRI Teams - Covid-19 Institute Support Fund - ‘20210127 Update on UKRI Institutes Funding’

UKRI Teams - Covid-19 Institute Support Fund - ‘C-19 Intervention for UKRI Institutes FINAL - Oct 20’

UKRI Teams - Covid-19 Institute Support Fund - ‘Post Award Report - Alan Turing’

UKRI Teams - Covid-19 Institute Support Fund - ‘Post Award Report - NIAB’

UKRI Teams - Covid-19 Institute Support Fund - ‘Post Award Report - UK CEH'

UKRI Teams - Covid-19 Institute Support Fund - ‘Post Award Reports’

UKRI Teams - Covid-19 Institute Support Fund - ‘Turing COVID Institute Support Fund (Submitted 2021-02-17)’

UKRI Teams - Covid-19 Institute Support Fund - ‘UKRI CISF Panel Meeting ToR 08 Mar 2021 FINAL’

UKRI Teams - Covid-19 Institute Support Fund - ‘UKRI COVID19 Institute Support Fund - Invitation to Apply’

UKRI Teams - Covid-19 Institute Support Fund - ‘UKRI COVID-19 Institute Support Fund Report Template (Turing Section)’

UKRI Teams - Covid-19 Institute Support Fund - ‘UKRI COVID-19 Institute Support Fund Report Template’

UKRI Teams - Covid-19 Institute Support Fund - ‘UKRI COVID-19 Institute Support Fund. UKRI CISF_Intervention Note_Final_090321 (1)’

UKRI Teams - Doctoral Extensions - ‘3. 2020-E171 - Review COVID-19 Doctoral Extensions Policy’

UKRI Teams - Doctoral Extensions - ‘Accounting Officer Considerations - C19 PHD Extension (Draft)’

UKRI Teams - Doctoral Extensions - ‘Accounting Officer Considerations - 'C19 PHD Extension Final’

UKRI Teams - Doctoral Extensions - ‘COVID_training_proposed Guidance Update with Revised Eligibility Final 24.4.20’

UKRI Teams - Doctoral Extensions - ‘PhD Extensions ExCo 7th April’

UKRI Teams - Doctoral Extensions - ‘RE WMM 03.02l’

UKRI Teams - Doctoral Extensions - ‘Request for an Approval of Commitment beyond Current Budgets for an Existing UKRI Allocation’

UKRI Teams - Doctoral Extensions - ‘UKRI_Phase_2_Doctoral_Extensions_Analysis_v5_ Final (002) ES Quick Proof (002)’

UKRI Teams - Doctoral Extensions - ‘UKRI-040521-Governance-Plan-Template-Phase-2’

UKRI Teams - Doctoral Extensions - ‘UKRI-090421-Report-UKRIDoctoralExtensionPolicyPhase1Awards’

UKRI Teams - Doctoral Extensions - ‘UKRI-11112020-COVID-19DoctoralExtensionsPolicyPhase2EqualityImpactAssessment’

UKRI Teams - Doctoral Extensions - ‘UKRI-11112020-COVID-19DoctoralExtensionsPolicyPhase2PolicyStatement’

UKRI Teams - Doctoral Extensions - ‘UKRI-11112020-NatCenUKRICOVID-19StudentConsultation’

UKRI Teams - Doctoral Extensions - ‘UKRI-240321-Equality-Impact-Assessment-March-2021’

UKRI Teams - General – ‘RE-191021-ResearchKnowledgeExchangeFundingAnnexA-2021-22’

UKRI Teams - General - ‘2020-E75 - Impact of COVID-19 on Sustainability of Research Performed in HEIs’

UKRI Teams - General - ‘COVID and University Research Funding - Paper for No10 - 9 April 2020 Final’

UKRI Teams - General - ‘COVID Impacts Internal UKRI Evidence Pack.’

UKRI Teams - General - ‘COVID Impacts Internal UKRI Evidence Pack.’”, ‘BEIS/Vitae Impact of COVID19 on researchers and research Wave 1, 2020’

UKRI Teams - General - ‘COVID Impacts Internal UKRI Evidence Pack.’”, ‘UKRI/Vitae Impact of COVID19 on researchers and research Wave 2, 2021’

UKRI Teams - General - ‘Covid-19 Impact on Researchers’

UKRI Teams - General - ‘RE-04102021-ResearchKEF-RecurrentGrantsFormulaCapitalAllocations-2020-21’

UKRI Teams - General - ‘Research Impacts Survey Presentation,’

UKRI Teams - General - ‘Vitae, Impact of Covid-19 on researchers and research Wave 1, 2020’

UKRI Teams - General - ‘Vitae, Impact of Covid-19 on researchers and research Wave 2, 2021’

UKRI Teams - Grant Extension Allocation - ‘3a. 2020-E87 - The UKRI Grant Extension Allocation’

UKRI Teams - Grant Extension Allocation - ‘Mark Walport Grant Extension Allocation Letter’

UKRI Teams - Grant Extension Allocation - ‘UA_Write Up_210520’

UKRI Teams - Grant Extension Allocation - ‘UKRI-101121-EIA-CoA-V2’

UKRI Teams - Grant Extension Allocation - ‘UKRI-11112020-ReviewOfExtensionsForStudentsImpactedByCovid-19’

UKRI Teams - Grant Extension Allocation - ‘UUK_Write Up_200520’

UKRI Teams - Medical Research Charity ECR Fund - ‘Doc 1 Letter to AMRC Scheme Information 3 Sept’

UKRI Teams - Medical Research Charity ECR Fund - ‘The Medical Research Charities Early-Career Research Fund’

UKRI Teams - Specialist Institute Support Fund – ‘Broad Sector Feedback on Covid Uplift’

UKRI Teams - Support for Small, Specialist Institutions - ‘Item 132-20 Specialist Institutions 2020-21 Dec 2020’

UKRI Teams - Support for Small, Specialist Institutions - ‘Item C20-35 Specialist Institutions 2020-21 11 Dec 2020’

UKRI Teams - Sustaining University Research Expertise (SURE) - ‘3. 2020-E53a - Responding to Covid-19 and Sustaining the Research’

UKRI Teams - Sustaining University Research Expertise (SURE) - ‘Agenda - 08.09.2020 Read Out’

UKRI Teams - Sustaining University Research Expertise (SURE) - ‘Bangor SURE Monitoring’

UKRI Teams - Sustaining University Research Expertise (SURE) - ‘BEIS PIC Business Case Cover Sheet and Keyholder Sign Off’

UKRI Teams - Sustaining University Research Expertise (SURE) - ‘Bradford 2022-01-31 SURE Interim Report’

UKRI Teams - Sustaining University Research Expertise (SURE) - ‘Conditionality for Sustaining University Research Expertise’

UKRI Teams - Sustaining University Research Expertise (SURE) - ‘Derby SURE Interim Monitoring Template 2021-22 (England)’

UKRI Teams - Sustaining University Research Expertise (SURE) - ‘Surrey SURE Interim Monitoring Report 2021-22 (England) 31012022’

UKRI Teams - Sustaining University Research Expertise (SURE) - ‘Swansea SURE Monitoring Template December 2021 (Wales) SU Signed 31.01.2022’

UKRI Teams - World Class Laboratories Fund - ‘Item 111-20 Expansion to WCL Funding 2020-21 19 October 2020’

UKRI Teams - World Class Laboratories Fund - ‘Summary of Monitoring Responses Related to Covid Support’

UKRI Teams - World Class Laboratories Fund - ‘WCL Proforma - RE - Case 1 Final’