

Rapid funding call for the National Core Study (NCS) on Transmission (“PROTECT”)

A. The Transmission NCS (“PROTECT”)

In July 2020, government scientific advisers and key funders identified where the UK must increase research to respond to near term strategic, policy and operational needs, and ultimately improve resilience against COVID-19 through 2021 and beyond. [Six COVID-19 National Core Studies](#) (NCS) have been established to meet these needs, including the NCS project on transmission of the SARS-CoV-2, led by the UK’s Health and Safety Executive (HSE). This project is known as “PROTECT”: The Partnership for Research into Occupational, Transport and Environmental Covid NCS.

At present we know that the virus is transmitted through three main routes:

- person-to-person;
- in the air;
- on surfaces.

However, we don’t yet understand the relative importance of each of these three routes, the duration of exposure necessary to result in infection, and how the physical environment, environmental conditions and human behaviour can alter the dynamics of transmission in any given scenario. This is particularly pertinent with respect to new and emergent variants. The knowledge gaps include, among others:

- the generation, emission and dispersion of virus-containing droplets;
- the viral load and particle size distribution of aerosols generated during a range of activities;
- the infective dose of virus required to initiate infection, and if this varies by exposure route;
- the critical factors required for environmental survival;
- the key risk factors responsible for outbreaks at the enterprise, sector and local level;
- how effective are the control measures that are currently applied in multiple different environments;
- how the most effective control strategies can be developed that enable resumptions of more normal activities at the sector level (e.g. transport, performing arts, care homes, educational).

The **NCS: “PROTECT”** portfolio of projects began delivering in October 2020. Led by HSE, it brings together more than 70 researchers from 16 different institutions to address the issues identified above. The programme is organised around six key themes which are designed to address questions not being tackled by UK Research & Innovation (UKRI) funded research, with a clear focus on the key knowledge gaps. The focus of each theme is shown below:

Theme 1: we are engaging with outbreak investigation teams to collect additional data from active investigations in a range of settings which can then be combined for pooled analysis to identify common transmission risk factors.

Theme 2: we are developing bespoke computational models to simulate the transmission of infection to evaluate the key environmental parameters that influence transmission and infection risk.

Theme 3: we are undertaking targeted work in a number of key sectors (starting with transport) to support effective return to near normal operation based on a clearer understanding of risk and effective mitigation.

Theme 4: we have established a core programme of method development for workplace and domestic aerosol and surface sampling, viable virus quantification, sequencing and mitigation assessments.

Theme 5: we are using experimental infection models (human and animal) to recapitulate transmission events, focussing on the early stages after infection acquisition. This will allow us to determine the infective dose of virus required to initiate infection and the time following initial infection during which most infectious virus is emitted, i.e. when peak infectiousness occurs, in relation to clinical signs and symptoms.

Theme 6: we will integrate findings from across the programme with the evolving international evidence base and translate the outputs into practical and pragmatic advice and tools to support a resilient return to near normal life.

Progress to date has included:

- Collection of extensive data sets from active outbreak sites;
- Development of denominator information to better understand attack rate from outbreak investigations and to present these on a national “heat map”;
- Establishment of agent-based models to begin testing efficacy of potential interventions;
- Development of better-informed Computational Fluid Dynamics models to feed into Quantitative Microbial Risk Assessment (QMRA) models;
- Deep-dives into the transport, food and manufacturing sectors have been held, and further dives into areas of enduring prevalence are planned;
- Measurements of viral RNA have been made in a range of settings;
- Experimental infection models to measure dose-response have been established;
- A review of construction sector performance has delivered an interim report.

We are now opening a rapid funding call for further work to support this portfolio of projects, within the specific areas of interest highlighted in Annex A of this document.

B. Purpose of funding call

The aims of this call are to:

- **Enable linkage** of other currently funded COVID-19 research to this NCS to deliver greater impact in addressing the key transmission questions.
- **Produce results that can inform** the activities being delivered under the “PROTECT”: NCS portfolio of projects at increased pace, the near term national COVID-19 response, and the research data and analytical requirements of SAGE and its sub-groups.
- **Develop practical approaches** to support and sustain a return to a post-pandemic life.

- **Enhance the assets** created by this NCS to make them available and accessible to others through a process of evidence synthesis, knowledge management and the creation of legacy resources.

C. NCS principles of participation

All National Core Studies have committed to a set of principles to enable delivery and share data in a way which builds public trust. All studies funded through this call must agree to these principles and specific requirements:

- Work collaboratively to actively share data to allow the scientific community to pool expertise, draw fresh insights, and increase our collective understanding. *For example, joining the monthly delivery meetings that bring together all “PROTECT” NCS partners and share findings and progress openly ahead of publication.*
- Ensure unconsented data is accessed through secure platforms accredited or working towards accreditation by the UK Statistics Authority to comply with standards established according to Digital Economy Act requirements, or working towards this status, which allows insights to be generated whilst maintaining privacy and data security.
- Demonstrate active and ongoing engagement with patients and the public in the design, development and governance of their activities, to provide assurance that these activities are in the public interest.
- Be transparent in the use of personal data and respect the privacy and confidentiality of individuals, complying with legal requirements and ethical expectations at all times.
- Make research outputs, observations, code and tools generated from the studies open-source, rapidly and freely accessible as a public good.
- Ensure all data and associated open-source code and tools generated through the studies are Findable, Accessible, Interoperable and Reusable (FAIR), registered on the Health Data Research Innovation Gateway, and using the Innovation Gateway as a portal to share this information with a streamlined and harmonised data access process.
- Demonstrate value for money by using existing UK infrastructure and research investments as far as possible and using open competitions where necessary to develop new infrastructure capability.

D. Funding available

A maximum combined total of £1.5m, inclusive of VAT, is available for this call. The maximum available for any individual award will be £250,000, inclusive of VAT (if applicable).

We anticipate awarding funding to at least five studies and to as many as is possible based on the scoring criteria and until the maximum funding is allocated.

Awards will be made at full economic cost.

Projects are expected to commence as soon as contracts are in place, but by 1 August 2021 at the latest, and funds need to have been spent and project completed by 30 March 2022.

E. Study contractual process

The PROTECT study is being managed by the Health and Safety Executive (HSE) who will ensure that the portfolio of projects is conducted under Open Research principles. Whilst we encourage the organisation conducting research to publish and exploit research produced, all collateral produced during the study falls to HSE controls. HSE will ensure this collateral is freely available for national and international research activities and ensure the research Sponsors get sufficiently early access to findings to support timely and effective policy decision making.

All proposals must include completed contractual and funding templates.

F. Eligibility

To apply, the lead organisation must currently be a research competent organisation which can evidence delivery of research through previous grant awards. Repurposed UKRI and Innovate UK awards are out of scope for this call, although supplementary or additional activities which build on existing grants are welcomed. Awards are limited to one per applicant.

AND

The lead organisation must be one of:

- A higher education institution
- An approved independent research organisation
- An approved NHS body
- A research council institute
- A commercial provider of applied research projects

Lead applicants are encouraged to consider forming new partnerships with other applicants or partners, to create interdisciplinary teams which can provide innovative solutions to the problems of concern.

G. Timing

- Funding call **opens on 07/06/2021**
- First part open call **closes on 20/06/2021**
- First part responses distributed on 22/06/2021
- Review panel convened on 28/06/2021
- Applicants informed of review panel outcome on 30/06/2021
- Second part documents **to be received by 12/07/2021**
- Contract finalisation starts 14/07/2021

H. Application Process

- Full details are provided at: <https://www.find-tender.service.gov.uk/Notice/012643-2021>

- Review the research questions in Annex A below. Should you have a research proposal that aligns with an area of research and a listed question continue to progress with your application.
- Familiarise yourself with the Selection criteria in part I of this document (below) to ensure that the proposal you produce is aligned with the requirements. Applications will be strictly assessed against these criteria.
- Should you wish to continue, complete the first part proposal form in Annex B below. This proposal will be considered by the evaluation panel and applicants will be informed of the results by 30/06/2021.
- Should your first part proposal be successful, and you wish to **continue**, complete the second part proposal form in Annex C below. Should this information be of sufficient quality, HSE will begin the contract finalisation process.

I. Selection criteria

Projects will be selected based on their ability:

- To answer the specific questions posed in the timescale available.
- To produce results that can inform the near term national COVID-19 response.
- To deliver new insights through application of innovative approaches that enhance the current portfolio of projects and reduce the time for outputs to make an impact.

The rapid review process is being run by HSE with an independent panel review.

Applicants are requested to complete the proposal in two parts. The first part will comprise the scientific proposal, an estimated cost and the social value questionnaire. Applicants who progress through the first part of the process, will be required to provide more detail regarding the financial elements of the proposal, which will help to facilitate the contracting process at pace. The estimated cost must be no higher than £225,000 inclusive of VAT, and estimated costs must be within 10% of the proposed final submitted cost. The first part of the application process requires completion of the form in Annex B below. Successful applicants will be required to complete the form in Annex C to complete their application.

The following table identifies the criteria for scoring of submissions. Please note that criteria that are required to be Completed to high quality will be used for contractual purposes. Should these data not be provided with sufficient granularity or clarity your proposal may be rejected.

	Section	Component	Word Limit	Points
1.	Completion of all documentation	All components of the form are complete and of high quality	N/A	Completed to high quality
2	Successful track record in research	Demonstrable success in achievements in research including COVID related projects	250	15

	Section	Component	Word Limit	Points
		Named researchers who will be conducting the research	250	15
3	Assessment	The research question being answered is aligned with the study need	150	10
		Proposed work to be undertaken, its impact, and the benefits that will be realised. Provision of outline costs	1000	45
		Identification of major risks associated with the project	200	15
4	Funding	Funding requested either builds on existing funding or is the sole request for funding, but does not duplicate existing funding models		Completed to High Quality
5	Risk Profile	There are no risk factors that make the project unsuitable for delivery, and the research organisation is able to demonstrate appropriate social value		Completed to High Quality

Annex A: Research Questions we are seeking answers for:

Proposals are welcomed which address the questions below. Proposals may address parts of questions as well as the whole question.

- **OK to respond to parts of questions as well the whole of the question.**
- **Applicants must indicate if they would require a new ethics application or an amendment to an existing approval (with an estimate of timescale for full approval).**

Environmental and Behavioural Intervention Measures

1. The programme aims to provide information to end-users regarding the real-world efficacy and the relative contribution of intervention measures to prevent COVID-19 outbreaks in workplace settings at the national and sector level. We would welcome proposals which:
 - a. Provide rapid evaluation of physical mitigations (excluding ventilation) in common usage that aim to prevent transmission of SARS-CoV-2.
 - b. Provide evidence regarding adherence to common interventions and identify any gaps in our understanding of this issue.
 - c. Provide evidence regarding the efficacy of training, worker engagement and other worker focussed approaches to reduce transmission.
 - d. Provide evidence to determine if any “useless” measures are being applied, why this is happening, and if effective ones are missing.
 - e. Explore what mitigations have been applied in different workplaces and how this varies by region, size of organisation, and/or type of organisation.
2. Provide evidence of the effectiveness of face coverings in specific settings (health care settings are of particular interest), including the role of behavioural factors in delivering efficacy.

Contact patterns and behaviour in workplaces

3. Collect, collate and analyse data to estimate the likelihood and level of occupational exposure to SARS-CoV-2 by occupation (SOC code), industry sector (SIC code) and other important determinants (e.g. size of company, region).
4. Develop and implement methodologies to collect data on frequency of interaction between people in different workplaces and public spaces, either using existing data sets or from primary, real-world data collection.
5. Consider the prevalence and consequences of adherence to workplace controls and virus transmission. Whilst there is much evidence that workplaces have introduced mitigation measures that are theoretically viable, outbreaks continue to occur. Organisational culture, and maturity are known to be contributory factors in the adherence to control measures in traditional health and safety incidents, and attitudes and behaviours with regards to compliance might have a significant role in transmission.

Vaccination and Testing

6. What is the role of workplace testing (including test uptake and behavioural changes) in controlling and preventing COVID-19 outbreaks in workplace settings? What is the take up of testing, how are organisations recording the use/compliance, does it change transmission rates, does it change workplace behaviours? What information do workers need/require in order to continue to comply, and also to re-start measures if another wave hits?
7. Can data linkage approaches be used to identify vaccination, antibody status and pre-existing medical conditions in WORKERS by age, gender, region, job, industrial sector and enterprise size?
8. Can data linkage approaches be used to determine the risk of reinfection among WORKERS, and what is the association between antibody level, vaccination and reinfection?

Mechanisms of Transmission

9. Can approaches be used/developed to rapidly and reliably measure and monitor the transmissibility of SARS-CoV-2 (including variants) in the population in different types of settings?
10. What is the variability between individuals in virus emitted, according to age, body size, activity (including work activities) and immune status?
11. What is the infectious profile of vaccinated people? How long are they infectious for, what are the CT values/viral loads? Does this change with different variants?
12. Develop and implement methodologies to use proxy tracer materials to track the spread of the virus in the environment and directly to people. What quantity of material actually reaches different parts of the body from the environment from a carefully defined scenario? It should go beyond a single surface touch that seems to limit many of the risk assessments and should include multiple contaminated surfaces and transfer to mucous membranes (not just presence on hands/face/surface).

Communication and engagement

13. The programme aims to provide a legacy of tools and products for any future pandemic. In order to achieve this aim, we are looking for partners to help provide approaches to capture knowledge, provide a synthesis of the evidence emerging both from the NCS and other transmission research activities and synthesise this knowledge into appropriate products suitable for a range of different intended audiences. Innovative approaches to capture and present the wealth of knowledge available and present it to target groups are particularly welcomed.
14. The programme is keen to ensure that data from previous or current projects can be linked to this National Core Study to add value. Therefore, we would welcome proposals that suggest how previous/current studies including retail, hospitality, prisons, care homes and healthcare settings can be linked to this National Core Study to build our understanding of transmission risk factors.

Annex B: To be completed by applicants applying for research funding

Applying for funding under the National Core Study: COVID Transmission

HSE have been provided with funds from HM Treasury to fund the National Core Study through to 31 March 2022 and will contract with delivery partners to contribute to the study where those contributions are not already funded from other sources. HSE will establish contracts with delivery partners in the form of a conventional contract for procurement of services.

The following assumptions will apply to all contracts:

- The termination date of the contract must be no later than 31 March 2022.
- HSE's standard Terms and Conditions will apply to all contracts.
- Payments will be made for costs incurred for specific deliverables, namely outputs (including data, reports, models, tools, capability, etc.), materials, or time. All deliverables should be clearly described and where there are large interim deliverables (milestones) these should also be defined. All deliverables, milestones and the final outputs should have delivery dates and **costs** relating to each deliverable stated. Costs should include appropriate allocations for capital, resources, overhead, or project support.
- For this scientific proposal estimated costs should not exceed £225,000, with a maximum 10% allowance for changes in the full proposal.

Delivery partners should complete and submit this form and the social value questionnaire by 22 June 2021 to request funding under this call. Applicants who are successful at this stage will be required to complete and return the form in Annex C by 12 July 2021. Failure to complete both sections adequately will result in the application being rejected.



National Core Study: “PROTECT”

Application for Research Funding under open call

Question	Evaluation Points	Your Response
Name of Delivery partner organisation	Completed to High Quality	
Address of Delivery partner organisation	Completed to High Quality	
Contact details for technical matters	Completed to High Quality	Name: Role: Email: Phone:
Contact details for contractual matters	Completed to High Quality	Name: Role: Email: Phone:
Contact details for communication matters	Completed to High Quality	Name: Role: Email: Phone:
Note the research question in Annex A from 1-14 and in your own words describe what related question your research answers (150 Words)	10 points	



Question	Evaluation Points	Your Response
Provide brief evidence of your success in achievements in research including COVID related projects (max 250 words)	15 Points	



Question	Evaluation Points	Your Response
Provide brief evidence of your organisational suitability and skill set to do the project (max 250 words)	15 Points	



Question	Evaluation Points	Your Response
Proposed approach of the work to be undertaken. This should be sufficient to describe how the research is undertaken, the impact of the research, and the benefits that the work realises. Provide a cost estimate within 10% of the final contracted amount (1000 words max)	45 Points	



Question	Evaluation Points	Your Response
Are there any significant or exceptional GDPR (or other data related), ethical, security or health & safety considerations associated with your proposal? Please also state requirements for ethical approvals, human tissue access, or other formal requests	Completed to High Quality	
Please state any major risks to successful delivery of the work	15 Points	
Please provide a table of named researchers and their experience	15 Points	
Is any of the work proposed work being funded from any other source?	Completed to High Quality	



Question	Evaluation Points	Your Response
If any of the work proposed is the subject of a proposal to another funding source, please provide details	Completed to High Quality	



TO BE COMPLETED BY ALL APPLICANTS:

Social Value Questionnaire

The HSE is committed to meeting Social Value conditions in line with government guidelines. For all contracts with a value in excess of £118,000, Contractors are required to demonstrate that they deliver significant social value to their work forces and local communities outside of direct delivery of the contract.

The PROTECT study is committed to ensuring that suppliers to the study meet the standards required. In line with this requirement we have selected the following policies and objectives against which your application will be considered. Please provide input in those boxes that relate to the work your organisation will deliver to the National Core Study.

Policy One: Help your local communities to manage and recover from the impact of COVID-19	
Objective	What policies or initiatives will your organization implement as a result of being awarded this contract which support HSE's and the Government's Social Value objectives?
Support organisations and businesses to manage and recover from the impacts of COVID-19	
Support the physical and mental health of people affected by COVID-19, including reducing the demand on health and care services	
Policy Two: Improve the Health and Wellbeing of your staff and communities	
Involvement of broader populations in your staff and communities in the delivery of your services to support stronger levels of community integration	



Annex C: To be completed by successful applicants at Annex B stage

Applying for funding under the National Core Study: COVID Transmission

Should you be informed that your scientific application to the PROTECT Open Call has been successful you will be required to complete the following table to complete your application for funding. This will be required within two weeks of being informed of support for your scientific application.

The following assumptions will apply to all contracts:

- The termination date of the contract must be no later than 31 March 2022.
- HSE's standard Terms and Conditions will apply to all contracts.
- Payments will be made for costs incurred for specific deliverables, namely outputs (including data, reports, models, tools, capability, etc.), materials, or time. All deliverables should be clearly described and where there are large interim deliverables (milestones) these should also be defined. All deliverables, milestones and the final outputs should have delivery dates and **costs** relating to each deliverable stated. Costs should include appropriate allocations for capital, resources, overhead, or project support.
- All proposals should have a maximum total value not exceeding £250,000.

Delivery partners should complete and submit the form in Annex B by 20 June 2021 to request funding under this call. Applicants who are successful after this stage will be required to complete and return the form in Annex C by 12 July 2021. Failure to complete either form adequately will result in the application being rejected.



Name of Delivery partner organisation																																													
<p>Provide a detailed specification of all major deliverables associated with the research being undertaken and the dates deliverables will be delivered. These should be of the form of a structured output be it a report, analysis, data, presentation, etc. All deliverables to be shared with HSE.</p>																																													
Breakdown of funding requested:	<p><i>Complete for each major deliverable. Duplicate as required</i></p> <table border="1"> <thead> <tr> <th>Deliverable:</th> <th>Cost Breakdown</th> <th>Cost</th> </tr> </thead> <tbody> <tr> <td rowspan="6">1)</td> <td>Salaries</td> <td></td> </tr> <tr> <td>Consumables</td> <td></td> </tr> <tr> <td>Travel</td> <td></td> </tr> <tr> <td>Equipment</td> <td></td> </tr> <tr> <td>Directly Allocated</td> <td></td> </tr> <tr> <td>Indirect Charges</td> <td></td> </tr> <tr> <td rowspan="6">2)</td> <td>Salaries</td> <td></td> </tr> <tr> <td>Consumables</td> <td></td> </tr> <tr> <td>Travel</td> <td></td> </tr> <tr> <td>Equipment</td> <td></td> </tr> <tr> <td>Directly Allocated</td> <td></td> </tr> <tr> <td>Indirect Charges</td> <td></td> </tr> <tr> <td rowspan="6">3)</td> <td>Salaries</td> <td></td> </tr> <tr> <td>Consumables</td> <td></td> </tr> <tr> <td>Travel</td> <td></td> </tr> <tr> <td>Equipment</td> <td></td> </tr> <tr> <td>Directly Allocated</td> <td></td> </tr> <tr> <td>Indirect Charges</td> <td></td> </tr> </tbody> </table>			Deliverable:	Cost Breakdown	Cost	1)	Salaries		Consumables		Travel		Equipment		Directly Allocated		Indirect Charges		2)	Salaries		Consumables		Travel		Equipment		Directly Allocated		Indirect Charges		3)	Salaries		Consumables		Travel		Equipment		Directly Allocated		Indirect Charges	
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<p>Profile of Payments: Specify how payments will be required. Options are for payment to be made on delivery of deliverables, or quarterly against work progressed less 10% retained cost to the end of the project. On either option please provide the breakdown of payments in dates and amounts.</p>	
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