Results of Competition: UKRI Ideas to Address COVID-19 – Innovate UK Temp F'work Aug 2020

Competition Code: 2007_UKRI_IDEAS_COVID19_OPEN_TF

Total available funding is £120m

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
FAULTFIXERS TECHNOLOGIES LTD	Enabling enhanced social distancing and improved health & safety within UK social care and care homes through innovative digital maintenance systems	£339,397	£271,518

Note: you can see all Innovate UK-funded projects here: https://www.gov.uk/government/publications/innovate-uk-funded-projects
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Project description - provided by applicants
Enabling enhanced social distancing and improved health & safety within UK social care and care homes through innovative digital maintenance systems. Based on consultation from many UK care home groups, this project is intending to research, design and develop adaptations to our innovative digital maintenance software to enable UK-wide care homes to operate fully-digital maintenance processes across their site(s). The objective is to deliver a significant contribution to the response to COVID-19 through the elimination of direct contact in the traditionally manual and face-to-face maintenance processes across care homes, enabling 100% social distance compliant processes and helping to prevent the transmission of the disease between staff, care workers, residents/patients, and family members. It is anticipated the wider social benefits from this project will be applicable to all future public health issues within UK care homes (e.g. seasonal flu), whilst also providing economical and operational benefits to the care homes users. The longer term aims of this project are for all health, social, economic, and operational benefits from this project to be available to all UK (and international) care providers, and the deliverables to be available on a commercial basis.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
TOOKIE LIMITED CENTRE FOR PROCESS INNOVATION LIMITED	Arc Angel - An Automated Social Distancing System	£186,845 £128,508	£149,476 £128,508

Project description - provided by applicants

Social distancing has been a key Government Strategy in slowing the spread of infection during the Covid-19 pandemic, which is of importance relating to protecting individuals at greater risk of more serious disease. With the easing of 'lock-down', the government guidance strongly recommends continuation of social distancing of two metres or, where this cannot be achieved, at least one metre in public spaces, indoors and outdoors.

It has proved difficult for the public to comply with this guidance owing to lack of perception regarding distance and a lack of awareness of potentially vulnerable people around them. Tookie has found, in conversation with vulnerable groups such as older citizens, those with pre-existing respiratory conditions, BAME people, and patients undergoing immunosuppressive treatments, that they are anxious about going out in public and about their normal activities.

To alleviate this distress, Tookie has designed 'Arc Angel', a device that provides a visual demarcation of a safe circle around an individual by showing a safe distance that is set to the current government or scientific guidelines. We have completed the first stage of the development in partnership with the Photonics Centre at the Centre for Process Innovation (CPI).

Arc Angel can be worn on the body or mounted onto a walking aid, wheelchair or shopping trolley, and projects a circle of bright light emitted from a laser around the user that indicates the correct safe distance; and acts as a signal that the user may be in too close proximity to others.

It would be desirable to provide a visual or audible warning to the user when the safe zone is breached by another person. In this project we will work with CPI to complete the development of the device in collaboration with members of the medical profession and patient and public groups who will be consulted on the design, use, usability and desirability of the device.

The final version will be designed for manufacture for scale-up production and rapid deployment to vulnerable people, hospitals, supermarkets, museums, retail, hospitality and other public places where people can find it physically difficult to socially distance or are anxious owing to others not abiding by Government guidelines.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
PEROXIGEN UK LIMITED	Whole-room and workplace disinfection by means of electrogenerated oxidants delivered in the form of a fog, mist or spray.	£318,796	£255,037
University of Edinburgh		£200,486	£200,486

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Project description - provided by applicants

The product proposed by Peroxigen UK Ltd is a "mobile fogger" that generates a fine mist of water droplets incorporating disinfectants for application in hospitals, schools and many other places. The product's purpose is the rapid elimination of the virus responsible for COVID-19, from air and from surfaces.

The mobile fogger works by generating disinfectants in solution through chemical reactions induced by passing an electric current between two special electrodes. Peroxigen's key innovation is a novel electrolytic cell that incorporates a new generation of low-cost, plastic electrodes that have a special carbon surface that generates biocides. These electrodes are substantially cheaper than the solid diamond electrodes previously used. When an electric current is applied to these cells, powerful oxidising biocides (disinfectants), such as ozone and hydrogen peroxide, are generated instantly.

The water charged with these fast-acting disinfectants is delivered through a nozzle as tiny droplets that kill microorganisms on contact. Using different types of nozzles permits the delivery of a fog or fine mist that hangs in the air to kill airborne pathogens, or a spray that can be targeted at a particular surface for decontamination. By applying an electrical voltage to the delivery nozzle, biocidal water droplets can be electrically charged, attracting them to surfaces. Although the water droplets contain powerful biocides, the disinfection technology is safe. The electrolytically generated biocides decompose rapidly, so that decontaminated spaces become safe to use again within an hour.

In this project, Peroxigen will work with Edinburgh University to determine how efficiently this device kills microorganisms in a range of real-world environments. The University will identify and optimise operating parameters, such as droplet size and charge and the concentration of disinfectants, in order to maximise disinfectant efficacy and product performance.

Peroxigen's strategy includes the building of prototype foggers to determine and optimise product performance and disinfection efficacy. The operating parameters, both physical and chemical, will be determined by the department of Physics by way of research on safe "laboratory" microorganisms. The resulting know-how will be transferring to the Roslin Institute for studies on Covid-19 and influenza viruses. Finally, Peroxigen will undertake trials in hospitals at other customer sites.

Peroxigen's ambition is to deliver 500 mobile foggers within 27 months to customers in the public and private sectors, starting with healthcare facilities and schools. The company's low-cost fogger will provide effective decontamination in places where people work and congregate.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
THE SHADOW ROBOT COMPANY LIMITED	Haptic Telerobot for Pharmaceutical Sterile Manufacturing	£732,533	£586,026

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Project description - provided by applicants
Shadow Robot has been exploring teleoperation and robotics to address the crisis now or better prepare for any catastrophes in the future. Vaccine and drug manufacturing is a key part in the healthcare supply chain and currently the pharmaceutical industry across the world is extremely stretched to meet this need. While the big pharma companies like Pfizer, AstraZeneca, etc., are aggressively researching to come up with a vaccine for COVID-19 at the earliest, almost all the pharma companies world-wide are gearing up for **volume production** in the coming months. The social distancing, quarantine during the pandemic and the already existing Good Manufacturing Practice (GMP) regulations only allow limited workforce in PPE at any given time. **Therefore technologies that can aid new ways of working, allow adaptable and efficient scale-up of manufacturing are key contributors in the healthcare supply chain.** With teleoperation, critical workers can perform intricate lab tasks at a safe and comfortable distance - without physically being in a lab. This reduces the contamination, the risks to workers and keeps the labs sterile. Shadow with inputs from Pfizer would carry out the technology development that can **contribute to adaptable and efficient manufacturing in the pharmaceutical industry for future pandemic requirements**.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
MICROLINK DEVICES UK LTD	LUSS (LED based Ultra-Violet exposure for Safe Surfaces)	£352,730	£282,184
COMPOUND SEMICONDUCTOR APPLICATIONS CATAPULT LIMITED		£41,951	£41,951
WIDEBLUE LIMITED		£207,329	£165,863

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Project description - provided by applicants

Project LUSS (**L**ED based **U**ltra-Violet exposure for **S**afe **S**urfaces) provides an economical solution to combat COVID-19 with the ability to also disinfect surfaces of other viruses and bacteria.

COVID-19 has raised the importance of preventing viruses spreading between individuals in their daily routines, e.g. touching door handles, entering rooms where infected people reside or have recently departed. Continuous cleaning of door panels using disinfecting chemicals is impractical. LUSS intends to exploit a particular spectrum of Ultra-Violet (UV) light to provide a simple and efficient means of killing COVID-19 and other viruses, providing additional potential in wider settings for the future.

MicroLink Devices (MLD), lead industrial partner with support from WideBlue (WB), Industrial partner and Compound Semiconductor Applications Catapult (CSAC), Research Technology Organisation will initially develop an automatically self-cleaning door panel, exploiting specific UV light, that will kill viruses/bacteria and prevent the spread of infection. The door panel will automatically operate every time someone enters a room/building. Therefore, cleaning staff's time can be directed at other areas where traditional disinfection is required.

Project deliverable will be a low-cost door panel UV Disinfection System and can be easily retrofitted. It will be re-chargeable battery powered, supplemented by indoor light harvesting solar cells to power the LEDs potentially substantially reducing operating costs and reducing the requirement for frequent battery changes.

MLD will provide overall project management and lead the system design and production of prototype door panel, system and component testing and final test at end-ser site. WB will design the electronics for the demonstrator door panel which will involve PCB modelling, design and test for prototype and demonstrator. CSAC will support use case definition, define initial design parameters for the prototype door panel and perform testing of components for build and safety efficacy.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
H FURNITURE LIMITED	Hayche Corona Office Furniture	£202,898	£162,318

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Use the Competition Code given above to search for this competition's results

Project description - provided by applicants
Project Vision - The purpose of this project is to create new furniture solutions that minimise airborne transmission within office related environments, with a refined design approach and competitive price points, with the overall aim of providing a safer, healthier, flexible and enhanced way of working within such environments and thus being able to have a positive impact on public health conditions and the reactivation of the UK economy after COVID-19\. **Key Project Objectives -** Our aim is to research, design, product develop, prototype, test and have market ready 3 different innovative solutions for office furniture. These include a Task Chair, Desk System and Retractable Wall. Each of these products will provide sheltering, flexibility, privacy and easy cleanliness, while maintaining competitive price points and normal operational and functional qualities. In addition there will be a strong focus on environmentally sound materials and simplicity of manufacturing, assembly, transportation and maintenance.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
RSK ADAS LIMITED	Post-Covid Knowledge exchange in agriculture: Evaluating current practice and Co-designing a digital solution to connect farmers and the AKIS	£122,600	£98,080
AGRI WEB MEDIA LIMITED		£20,515	£16,412
CAMBRIDGE NETWORK LIMITED		£8,787	£7,030
Defacto Design		£25,000	£20,000
SOIL ASSOCIATION LIMITED(THE)		£15,205	£15,205
University of Gloucestershire		£17,305	£17,305

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Project description - provided by applicants

Covid19 has necessitated a rapid shift to digital communications by all individuals and organisations. Platforms that were already being used regularly by some (eg Teams, Zoom) have now become essential to many, and new solutions and technologies continue to emerge, along with the collective knowhow. However, these have not been able to fill the hole in the communication, conversation, networking and engagement space left by the absence of face-to-face shows, meetings and events in agriculture. There has so far been no formal evaluation of the impacts of Covid19 on Knowledge Exchange (KE) in agriculture or other sectors. Such KE is essential to progress in agriculture, enabling the improvement of food security & quality, productivity, profitability, sustainability, social welfare and the environment. Covid19 has highlighted the importance of agriculture in the UK, which now faces multiple challenges (and opportunities). UK agricultural productivity has lagged behind competitors for decades, in part due to fragmentation of the knowledge system.

As the UK's leading independent provider of agricultural research and KE, ADAS will lead an Action Research approach, working with practitioners to evaluate and provide urgent insights into the impacts and responses in the AKIS and what KE approaches work best in the face of Covid19 disruption. Multiple stakeholders will co-create a new digital solution (Farm-PEP), bringing together tools, experience and knowhow to provide a dedicated Covid-secure online community space for KE. Crucially, this will integrate existing tools & initiatives (The Farming Forum, Agri-techE, Innovative Farmers, Yield Enhancement Network, Agricology, AHDB) and make full use of the social media, video and podcasts which have become important in recent months. Nothing comparable to Farm-PEP currently exists. Current platforms are disjointed and siloed, with discussions temporary in nature, easy to miss, and rarely leading to rich outcomes or collaboration. They do not contribute to a recognised knowledge base, with little opportunity for inclusive distillation, connection, development of ideas for further exploration or forming of coherent messages for widespread adoption. Farm-PEP will provide the space for deeper, trusted, meaningful connections, knowledge sharing, community building and collaboration. It will provide solutions and spaces where people can find out what's going on across the industry, can demonstrate what they are doing and solicit feedback in order to build shared knowledge. It will enable serendipitous, synchronous and asynchronous discussions and connections to be made around topics of interest.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
OWEN MUMFORD LIMITED	Design of a Vaccine-specific Autoinjector Device to provide a long-term pandemic solution for the UK	£444,449	£355,559

Note: you can see all Innovate UK-funded projects here: https://www.gov.uk/government/publications/innovate-uk-funded-projects
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Project description - provided by applicants
The UK Healthcare system faces an enormous challenge to facilitate the administration of a population-wide immunisation programme against COVID-19\. The widespread nature of the process of vaccination has meant that, until now, there has never been a pharmaco-economic justification that could bear the additional costs of vaccination using a self-administration device compared to a simple vial and needle syringe approach. The advent of the COVID-19 pandemic however, has brought about significant changes to our ways of working and social interaction that has impacted upon the way in which healthcare needs to be administered. The availability of a vaccine that could be injected by an individual using a custom-designed autoinjector that has undergone significant human factor evaluation to ensure its safe and easy use, could facilitate a nationwide COVID-19 vaccination programme based from people's own homes. This not only significantly reduces the burden on the health services by removing the need for the practitioners and facilities to administer the injections, it reduces the risk of exposure for the individual, particularly important for the at-risk population and offers additional time-saving cost benefit to the individual by removing the need to schedule a visit to a clinic. Moreover, the device offers itself as a platform for the potential to develop a broader UK vaccination strategy to enable individuals to self-inject other vaccines safely and with convenience. Owen Mumford Ltd (OM) has a long heritage and world class expertise in the design and manufacture of autoinjection devices for various medicines but a device suitable for vaccine delivery is currently unavailable in the UK nor indeed, globally. This proposal would allow OM to finalise the design of a modified vaccine autoinjector (VAI) suitable for safe home use. Our vision is that the VAI could form the basis of a much broader Rapid Immunisation Delivery System (RIDS) in which an individual would (1) self-administer the vaccine, (2) confirm the presence of antibodies by use of a home test kit and (3) using device connectivity a digital confirmation would be created to validate vaccine delivery and antibody test outcome to provide the basis of an electronic certification of immunisation. This capability could be far-reaching and may provide a solution to multiple social and business challenges, such attending events with mass gatherings or air travel, in order to help the UK return to some level of normality.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ABTRACE LIMITED	Using advanced AI and Natural Language Processing to accurately and automatically predict hospital length of stay, related patient-NHS resource requirements and improve discharge efficiency	£494,639	£395,711

Note: you can see all Innovate UK-funded projects here: https://www.gov.uk/government/publications/innovate-uk-funded-projects
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Project description - provided by applicants

Challenge to address

At every stage of the Patient inflow and outflow process within the NHS, there are delays which impact on patient care, staff, hospital resources and efficiency. The vast majority of delays are attributable to hospitals and staff not having access to information or that information being incomplete or out-of-date, which in turn leads to the mis-allocation of scarce resources (staff, beds, materials).

With no tools or mechanisms to predict admission level or the expected length of stay - current leading platforms only provide time-delayed data - hospitals and staff need to make reactive, subjective decisions regarding beds, staffing and resources. Whilst clinician experience will always be important role, AI has the ability to harness, analyse and support decision-making and resource allocation in a quick, accurate and standardised way (analysing years of big data).

Solution

We are proposing to develop the first highly accurate AI real-time predictor of hospital admission and patient length of stay (AUC\>0.9). Projected benefits include:

1. Predict resourcing requirements (bed, staff, equipment, etc) based upon large historical health datasets.
2. Predict critical resource supply gaps such as PPE and oxygen (COVID-19 identified failure-point);
3. Speed up the discharge of patients by providing accurate real-time information to clinicians.
4. Help better manager whole-hospital bed occupancy status and resources in the short, medium and long term.

Innovation

The base information collected will be derived from local electronic health record datasets with the predictive core of the platform based on machine learning models that can accurately analyse both structured (numerical and categorical values) and unstructured (text-based information like triage and physicians' notes) large datasets. Such clinical algorithms will be trained on millions of data points. This process leads to accurate, actionable intelligence for clinicians and management teams to act on.

For example, the engine will learn that for a given number of patients presenting with a high NEWS score or low oxygen saturations, a proportion will be admitted. With accumulation of clinical information on COVID-19 patients, increasingly accurate predictions for admission and length of stay will be generated. Such information will then be relayed to clinicians and hospital leads in real-time so that resources can be accurately ordered/allocated, discharge assessments planned and patient's aren't kept in any longer than needed.

With delays to discharge purely from untimely information costing the NHS 625,942 bed-days/£92.6m per annum alone, the technology is timely and urgently needed.

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CORIOLIS TECHNOLOGIES LIMITED	MultiLateral Thinking - Coriolis Technologies	£426,353	£341,082

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Project description - provided by applicants
Vision - COVID-19 will change the nature of trade and impact the UK's economic performance, trade strategy/policy and global position. WTO forecasts global trade will fall 30% due to COVID-19\. COVID-19 places unique demands on policymakers to quickly formulate strategies based on sparse evidence. Policy choices need justification by independent and highly-accurate, real-time, data. However, tools/technology available to policymakers' (economic data/models) do not utilise real-time data and therefore cannot support timely evidence-based decision-making. **Idea & Objective** - MultiLateral Thinking will uniquely combine complex validated trade models, real-time data and world class policy knowledge to determine the actual impact on trade of COVID-19 and allow scenarios to be run. Beyond COVID-19, the platform will support UK and international policymakers during geopolitical change (including Brexit, changing international relationships, WTO reform). This opportunity could be addressed by combining data and state-of-art analytics. The MultiLateral Thinking project will conduct industrial research to develop and demonstrate this innovative technology.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
NANOCO TECHNOLOGIES LIMITED	Heavy Metal-Free Quantum Dot Testing Kit for the Accurate and Rapid Visual Detection of SARS-CoV-2 from Saliva Samples	£986,966	£789,573

Note: you can see all Innovate UK-funded projects here: https://www.gov.uk/government/publications/innovate-uk-funded-projects
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Project description - provided by applicants
Simple, fast and reliable methods for the detection of SARS-CoV-2, the pathogen that causes Covid-19 in humans are still badly needed to reduce the spread of the pandemic and mitigate its impact on health care systems and on the overall socioeconomic status. Current methods are either complicated and expensive as in the case of PCR; or non reliable and inaccurate as in the case of typical immunoassays. Also, most of the current methods require the use of nasopharyngeal swabs, which can be unpleasant, require training and sending to a specialist laboratory for analysis, often taking several days before results. In this project a point-of-care testing kit will be developed to enable the rapid and easy detection of SARS-CoV-2 or future flu epidemics from saliva samples using a multiplexed immunoassay enabled by fluorescent quantum dot nanoparticles (QDs). Unlike conventional immunoassays that suffer from high inaccuracy, or the PCR methods that suffer from complexity, high cost and result delays, the brightness and multiplexing ability of QDs will provide a reliable detection capabilities that can be performed quickly without prior training and at a lower cost. In this project, a new type of non-toxic QDs (VIVODOTS(tm) nanoparticles) that was developed by Nanoco Technologies, Ltd for biomedical applications will be linked to targeting antibodies against two or more structural proteins in the virus. Once the functionalized QDs with various colour codes come in contact with the SARS-CoV-2 viral particles in the saliva sample, they will bind to the virus and generate unique spectral emission under blue light source. The unique spectral emission will occur only in the presence of the actual virus. The QDs in this type of application offer a number of advantages over conventional fluorescent dyes and colloidal gold, including bright and coded emissions from a single excitation source and low reflectance interference, which is ideal for platforms based on surface detection like lateral flow sticks or paper strips. The proposed concept of this diagnostic kit is versatile and agile as it can be modified quickly to respond to potential future mutations or to new outbreaks caused by other types of contagious pathogens.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
GENCOA LIMITED	Anti-viral transparent adhesive protection for Touch Screens to help in the fight against COVID-19	£92,009	£73,607
EMERSON & RENWICK LIMITED		£46,611	£37,289
Liverpool School of Tropical Medicine		£47,802	£47,802
University of Liverpool		£65,721	£65,721

Note: you can see all Innovate UK-funded projects here: https://www.gov.uk/government/publications/innovate-uk-funded-projects
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Project description - provided by applicants
Society requires new solutions to reduce the probability of COVID-19 cross-infection as people resume their daily lives. However, common touch surfaces have been shown to contain significant viral and microbial contamination. The SARS-CoV-2 virus can be present on plastic and glass surfaces for several days and multiple users of the same touch surfaces creates a continuous biological load that leads to cross-contamination, despite periodic cleaning. Studies have shown that touch screens of mobile phones belonging to medical staff in COVID-19 wards have a \>80% chance of containing the SARS-CoV-2 virus. It is almost certain that people with COVID-19 will have a highly contaminated mobile phone screens. If they then use public transport ticketing machines, the contamination will pass to that surface, as is the case with other forms of touch screen. A new form of transparent coating has been developed using vacuum coating that is extremely biocidal. These new anti-viral coatings will be tested on ticket machines used widely in transport, and thus break chains of transmission arising from numerous people touching the same surface.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
ATTOMARKER LIMITED	Multiplexed Covid-19-Flu-20 Antigen-Antibody Testing (COVIDFLU)	£539,482	£431,586

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Project description - provided by applicants

This project is focused on the development of two rapid, point-of-care COVID-19/flu tests that can be used to test a person for both coronavirus and flu antigens (showing whether they currently HAVE either of the viruses) and antibodies (showing whether they have previously HAD the viruses). The tests would take 5-7 mins to complete and thus results could be given to a patient at the testing centre/consultation. The tests would assess the patient for both viruses simultaneously, allowing healthcare professionals to distinguish between diseases with similar symptoms and, for example, triage patients to different areas of hospitals to slow the spread of the viruses. Antibody tests currently approved for use in the UK by the MHRA use blood drawn from a patient's arm; this project will firstly improve an already-approved COVID-19 antibody test by the addition of flu antibody detection, and secondly test whether the same sensitivity can be achieved through blood pricked from a finger. These developments would allow quick assessment of patients to check their suitability for a flu vaccine (some at-risk patients may have lasting damage from COVID-19 making them vulnerable to a flu injection) and, post-vaccine, whether their flu vaccine induced an immune response. There is currently no approved antigen test for COVID-19 in the UK. The test currently used to diagnose COVID-19 is a polymerase chain reaction (PCR) test following a nose swab. This test has only 80% accuracy, has a slow turnaround (most take \>24h), and is very uncomfortable for patients when performed properly, meaning the public is unlikely to follow the steps properly at home and children are unlikely to comply. A saliva-based test would be easy and comfortable for patients to perform as they would simply have to spit into a tube. This project will focus on the development of a rapid, accurate, saliva-based antigen test that will be able to diagnose COVID-19 and/or four different strains of the flu in 7 minutes. The speed of this test would revolutionise UK testing, as it would allow fast and accurate screening of thousands of people at, for example, airports, conferences, and sports events, to stop people spreading the viruses onto others while allowing the UK economy to restart and lives to return to normal. If time and funds permit, the study will progress to look at measuring antibodies in saliva simultaneously and making the tests hand-held for use by the public at home.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
UNIQ HEALTH LTD	Automated, intelligent oral contraception prescribing via telemedicine - using AI to improve patient health outcomes and streamline time-intensive assessment processes, exacerbated by COVID-19	£406,483	£325,186

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Project description - provided by applicants

Covid 19 has validated and compounded the need for improved efficiencies (identified within the NHS Long Term plan) via the urgent introduction of automation and the utilisation of Telemedicine where feasible to reduce strain on resources, especially with the prospect of a second wave/future spikes on the horizon.

The ongoing impact of Covid-19 meant over 45% of non-urgent appointments were either cancelled or postponed, leaving GP's with significant backlogs. Contraception and prescription of Oral Contraceptives (OC) is the second most common reason to visit a GP (UK), accounting for more than 20m appointments/annum, equivalent to 13,900 days and is classed as "non-urgent."

This has been further compounded by the closure of 54% of Sexual Health Clinics, often utilised by young females for contraceptive consultations, leaving many unsupported.

Intelligent, automated technology, as identified in the NHS Long-Term/NIHR post-Covid strategies, can help in this regard in particular when combined with recently curated large female health datasets on hormonal profiles. Reducing demand on GP clinics whilst improving the prescribing process by ensuring optimum available medication is prescribed first time (52% of users suffer side-effects on the first prescribed medication, on average resulting in 2 further consultations to manage adverse side-effects and determine optimum medication).

Building upon our CE-Marked hormonal health platform and prototype TRL5 patient stratification algorithms, we intend to develop and trail (alongside NHS partner CNWL NHS Trust) a new Telemedicine platform for female contraceptive treatments that will;

* Automate the consultation and triage process
* Intelligently/accurately select the optimum available OC via patient stratification (utilising advanced algorithms) that considers a woman's unique hormone profile
* Ongoing remote outreach and monitoring by our digital support hub-\> earlier detection of side-effects, mitigation through counselling/coaching /medication changes where warranted.

Impact

The project addresses both a long-term inefficiency in the current prescribing method, as well as addresses the immediate impact of COVID-19 on GPs/Primary Care. The technology will explicitly;

1. Remove the need for a GP in 70% of all cases via remote triage: saving ~9730 GP-days/annum.
2. Improve the triage process for remaining 30% of complex cases via our CE-Marked knowledge base for GPs.
3. Improve the accuracy of medication prescription through AI-assisted patient stratification, reducing re-consultations by ~60%.
4. Enable remote prescribing via our partners Pharmacy2U&Mayberry_Pharmacy
5. Help reduce the ~£1.9Bn cost to the NHS of hormonal medication related side-effects(NHS:2019)
6. Improve patient care and proactive management through digital outreach and interaction.
7. Can be rolled out nationally, at scale, quickly.

Results of Competition: UKRI Ideas to Address COVID-19 – Innovate UK Temp F'work Aug 2020

Competition Code: 2007_UKRI_IDEAS_COVID19_OPEN_TF

Total available funding is £120m

Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.

Participant organisation names	Project title	Proposed project costs	Proposed project grant
OBRIZUM GROUP LTD.	TRADISET: Knowledge-Trading of Digital Assets	£392,227	£300,014

Project description - provided by applicants

COVID-19 has resulted in a fundamental reset of relationships between businesses and its people. Only a short time ago, a typical business would spend excessive time/money on trialling different ideas, business cases and change models in order to deliver remote and agile learning.

Our cloud-based enterprise learning platform (OBRIZUM), gives organisations the opportunity to leverage the power of AI to build a culture of actionable knowledge-sharing and knowledge-creation that strengthens their resilience to withstand and even thrive in environments of uncertainty, disruption and change. As we enter post-COVID recession, along with staged return to work, digital training that is capable of dealing with speed, change and efficiency, will be not be a luxury, but a necessity.

The output of the project will be a novel, complementary extension our existing platform, which is already used by some of the largest companies globally. OBRIZUM automates the creation of adaptive digital learning programmes for organisations that need to provide scalable learning opportunities. This project will extend the impact and reach of the platform by creating collaborative knowledge-trading technology, enabling secure and private exchange of digital learning assets between companies and organisations, facilitated via OBRIZUM.

Before COVID-19, a NESTA report stated \>6m people in UK were employed in occupations likely to change radically or disappear entirely by 2030\. When future-planning, it is crucial that the job-enriching and skills-enhancing practices of innovative firms are spread across the economy and work across different types of employment contracts -- something OBRIZUM, with added knowledge-trading capacity, can achieve.

The system will include enhanced employee analytics to allow managers to track the performance of people and teams, enabling prediction of forthcoming challenges, skills gaps and opportunities -- assisting in allowing better exploitation of skill capital across the business and to compose multitalented teams.

Aside from our initial target market of corporations, the company will offer this improved and expanded platform to other sectors, such the public sector, tackling the challenge of data-poverty and access to learning and thus directly aiding strategic government priorities to upskill the general population for technology related and flexible/changing careers. This project is highly strategic for the company as it presents a significant opportunity for OBRIZUM to grow. It is directly in line with our plan for growth and will accelerate our route to profitability by providing additional capabilities that can be integrated into and retailed as part of the business's existing OBRIZUM e-Learning platform

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
BRYANT MEDICAL LTD	Raptor Biosensor Project	£359,638	£287,710

Project description - provided by applicants
The Raptor Biosensor: A highly sensitive sensor with integrated neural networks, uniquely able to detect airborne pathogens such as viruses and bacteria in real-time with the view to quantify infection transmission risk. This groundbreaking innovation will have a great public health benefit, and ease the return to normal life as we emerge from the covid threat.