



Health  
Innovation  
Manchester

# Innovation Impact

Greater Manchester at the forefront of  
research and innovation during the first six  
months of the coronavirus COVID-19 pandemic

**March – September 2020**



Professor Ben Bridgewater

## Introduction from Ben Bridgewater, Chief Executive of Health Innovation Manchester

**Healthcare and research has faced undoubtedly its biggest challenge over the past 6 months during the COVID-19 pandemic. It has meant a need to adapt, innovate and work together in new ways. And it has affected every aspect of our daily lives.**

As the pandemic progressed in the first few months of 2020 and the impact on our NHS services, the health of our residents and the care sector began to emerge, those working in health innovation needed to rapidly mobilise and play an integral part of the COVID-19 response.

Innovation at scale is intrinsically difficult. We know that from any number of experiences around the world, not least within Greater Manchester itself. Add into that a global pandemic, stretched services, lockdown and a rapid move to remote working and successful innovation could seem an impossible feat to accomplish.

But within Greater Manchester we do things differently and evidence of how we've risen to this challenge is contained in this publication. We've led the way in research – uniting our academic and clinical expertise as part of the Rapid Research Response Group, running and recruiting to clinical trials and testing new treatments. We've also used digital technology to improve services, provide access to information and support patients. There has been an extraordinary effort across Greater Manchester, including in direct care, research and the innovative ways partners have worked together to support the needs of the system.

Examples of this work, interviews with system leaders and case studies from across the Greater Manchester Research and Innovation infrastructure are within this publication. Thank you to everyone who has contributed to this and shared their insights and learning from the system.

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**Research**



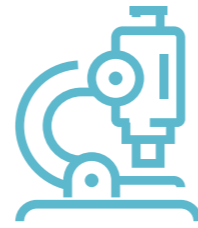


Professor Ian Bruce

**Strong clinical, academic and research partnerships across Greater Manchester have rapidly responded to the COVID-19 pandemic to ensure the city-region plays an integral part in beating the virus.**

From the creation of a COVID-19 Research Rapid Response Group, harnessing the power of hundreds of researchers and clinical colleagues to provide cutting-edge research, to recruiting thousands of participants to research studies, Greater Manchester has been providing vital support to the global pandemic efforts.

Professor Ian Bruce, Director of the NIHR Manchester Biomedical Research Centre and Academic Director of Health Innovation Manchester, led the work of the Greater Manchester Research Rapid Response Group. He said: "The speed at which our scientific community has stepped up to respond to the COVID-19 outbreak is outstanding and a testament to Greater Manchester's strong clinical-academic leadership and research assets."



## Greater Manchester at the forefront of vital COVID-19 Research

"Research has a significant role in understanding more about this new disease, how to tackle it and the longer-term impact this pandemic will have on communities."

Professor Bruce added that Greater Manchester's academic, clinical and research organisations have been aligned behind shared goals to minimise lives lost and reduce the impact of the pandemic on Greater Manchester's health and social care system and the wider community.

The Greater Manchester Research Rapid Response Group was established in March 2020 and brought together hundreds of researchers from GM universities with clinical colleagues from the region's NHS Trusts.

The work was backed by Health Innovation Manchester and NIHR bodies and included work into new treatments, understanding the disease mechanisms, prevention/vaccination and use of data science.

**"The speed at which our scientific community has stepped up to respond to the COVID-19 outbreak is outstanding and a testament to Greater Manchester's strong clinical-academic leadership and research assets"**

Professor Bruce said: "A vital part of Greater Manchester's research response has been working across organisational boundaries and prioritising research that will have an immediate impact in responding to the pandemic."

"The Research Rapid Response Group allowed us to focus on what was most urgent, support the research leads by removing the barriers that slow down progress and allow the experts in different fields to thrive. People have worked together in a collaborative way and some of the big ideas that have been supported by the group are now having national impact."

There has also been a unified, coordinated approach to recruitment to clinical trials and clinical studies across the region. In the first six months of the pandemic more than 8,000 people in Greater Manchester have been part of one of over 70 COVID-19 clinical trials.

The trials have focused on data, observations and treatment to help stop the virus or improve care for patients and have found successful treatments which are now making a difference.

Greater Manchester has also been successful in securing over £4.5million in COVID awards from UKRI to examine a variety of issues relating to the disease and the impact of the pandemic on society. It includes grants for molecular mapping of the virus to stratify disease outcomes, examining the impact of the pandemic on access to social security and employment support and creation of a collection of NHS testimonies about COVID-19.

Professor Bruce added that research has also supported policy response within Greater Manchester, supporting on local decision making and advising where resources would be best placed in the system, including through the GM Mass Testing Expert Group.

"We know our own system and the needs of our population so can give advice based in the realities of Greater Manchester and it has been incredibly rewarding to inform the local response."

"Research has already expanded our knowledge of the virus and how we can manage the direct and indirect consequences of the outbreak. We've learnt a lot about how to work together across organisations. But we know that we are still in the early stages of the pandemic and we are now facing the next 'wave' with infections rising and winter pressures growing. At this juncture it is crucially important to continue to support the research efforts across our conurbation."

[Read more >](#)



**73**  
**COVID-19**  
CLINICAL STUDIES IN  
GREATER MANCHESTER

**189**  
**PROJECTS**  
REVIEWED BY RRRG



**8000+**  
PATIENTS RECRUITED  
TO COVID-19 STUDIES



**£4.5**  
**MILLION**



UKRI FUNDING AWARDS  
**RECEIVED FOR**  
**COVID RESEARCH**  
IN GREATER MANCHESTER

**9**  
**COVID-19 RESEARCH**  
**PRIORITY AREAS**

**NEW TREATMENTS**



**SOCIAL CARE IMPACT**



**PREVENTION AND  
VACCINATION**



**DISEASE MECHANISMS**



**PATIENTS WITH EXISTING  
HEALTH CONDITIONS**



**ORGANISATIONAL  
DEVELOPMENT**



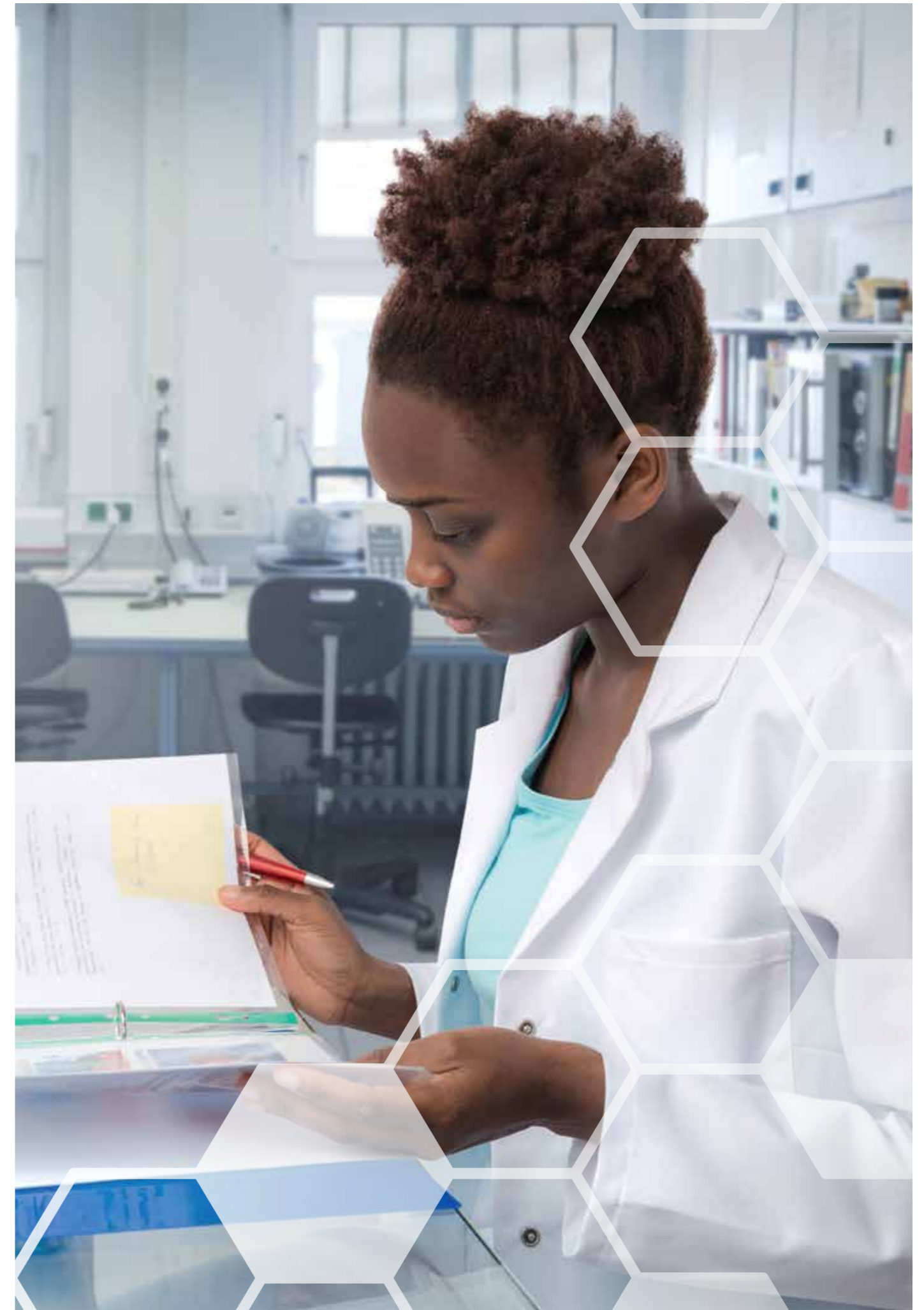
**PATIENT ASSESSMENT**



**RAPID DIAGNOSIS**



**DECISION MAKING**



## GM projects contributing to the COVID-19 Research efforts

### MANCHESTER RESEARCHERS PLAY LEADING ROLE IN GLOBAL RESEARCH

Manchester researchers were co-authors in a paper which indicated that the low-cost drug, dexamethasone, 'significantly lowers' death rates in patients hospitalised with severe respiratory complications of COVID-19. The results of the RECOVERY trial, which found the drug was the first to show increased survival rates in people hospitalised with COVID-19, were published in the New England Journal of Medicine in July 2020.

Dr Tim Felton, Senior Lecturer at The University of Manchester and Honorary Consultant at Manchester University NHS Foundation Trust (MFT) said: "The short timeframe between our first MFT participant being recruited to the RECOVERY trial in March, to our first COVID-19 patient receiving dexamethasone as a standard NHS treatment in June, is an incredible turnaround. This could not have happened without patients consenting to take part in research – which is now directly benefitting all patients admitted to our hospitals with suspected coronavirus."

[Read more >](#)



### TESTING TREATMENTS

In June 2020, a patient at Royal Manchester Children's Hospital, part of Manchester University NHS Foundation Trust (MFT) was the first in the UK to receive a convalescent plasma transfusion as part of the RECOVERY (Randomised Evaluation of COVid-19 thERapY) trial. Convalescent plasma is the antibody rich plasma of people who have recovered from COVID-19, which can be transfused into people who are struggling to develop their own immune response.

[Read more >](#)

In the same month two patients at the Northern Care Alliance NHS Group (NCA) were the first in the UK to join the ACCORD (Accelerating COVID-19 Research & Development) platform. The patients were each given a different drug, Acalabrutinib and Zilucoplan, as part of the study which aimed to get an early indication of different drug treatments' effectiveness in treating coronavirus.

[Read more >](#)

### IMPROVING VENTILATION CARE

The effectiveness of ventilation methods was also part of a study undertaken at Fairfield General Hospital in Bury. The study included the use of pioneering new ventilator machines created through a partnership between UCL and Mercedes AMG HPP, and used to treat the first patients in the UK.

[Read more >](#)

NCA's Director of Research Operations Professor Steve Woby said: "Research has a key role to play and we are focussing our efforts on improving diagnosis and testing, finding new treatments, developing preventative measures and vaccines, understanding disease mechanisms, and supporting patients, staff and the wider community."



Professor Steve Woby

### STAFF HELP FIGHT RESEARCH BATTLE

More than 1000 Manchester NHS staff took part in a population research study to help better understand coronavirus, how quickly it spreads and how best to test for it. MFT was the only NHS site to be part of the Public Health England ESCAPE-COVID observational study, looking at the development and changes in antibodies linked to COVID-19. It was delivered at the NIHR Manchester Clinical Research Facility.

Michelle Hepburn, Clinical Research Practitioner at MFT, said: "Our roles involve running clinical trials on a daily basis, but we never thought we'd be part of a study – especially one so critical to everyone around the world. It was a privilege to be asked to support PHE and NHS colleagues with the ESCAPE study."

[Read more >](#)

### VACCINE TRIALS

500 volunteers will take part in a new COVID-19 vaccine study at Stockport NHS Foundation Trust. Launched in September, the phase 3 study will test the safety and effectiveness of a promising new vaccine, developed by US biotechnology company Novavax, across a broad spectrum of people, including those from a variety of age groups and backgrounds. Dr David Baxter, Principal Investigator for the trial at Stockport NHS Foundation Trust, said: "COVID-19 has had a huge impact on our lives and we have seen many, many deaths with serious long-term illnesses in survivors. An effective and safe vaccine promises a more long-lasting solution and we are really pleased to be part of this national study of Novavax. "It is vital we carry out this vaccine trial and we're honoured to be involved."

[Read more >](#)

### ANTIBODY MEDICATIONS

The Royal Bolton Hospital has been part of the Catalyst trial, which looks at using treatments including antibody medications. The main aim is to gather good quality preliminary data on patient outcomes as a result of treatment so that the trial medication can be studied at a much larger scale.

Clinical Trials Pharmacist, Karen Lee said: "By confirming that prospective drugs provide no additional help in treating COVID patients, we can focus on using effective treatments and stop using medications which have no proven benefit, which is equally important in developing national guidance and conserving resources."

[Read more >](#)

### LEADING NATIONAL INSTANT TESTING EVALUATION PROGRAMME

Researchers from Manchester University NHS Foundation Trust (MFT) and The University of Manchester (UoM) joined a national programme to assess the effectiveness of COVID-19 tests. The COVID-19 National Diagnostic Research and Evaluation Platform (CONDOR) – funded by the National Institute for Health Research (NIHR), UK Research and Innovation (UKRI), and Asthma UK and British Lung Foundation – aimed to create a single national route for evaluating new diagnostic tests.



Professor Rick Body

The hospital-setting arm of the study, FALCON, is led by CONDOR Co-Primary Investigator, Professor Rick Body, Professor of Emergency Medicine at the University of Manchester, Consultant at MFT. He said: "The FALCON study could mean that clinicians can make fast, accurate decisions about a patient's care – sometimes within minutes. That includes decisions about which wards or areas a patient can receive care in, rather than the standard laboratory tests, which can take 24 hours or more."

[Read more >](#)

### TRACKING THE IMMUNE RESPONSE

A partnership between the Northern Care Alliance NHS Group and the Lydia Becker Institute at The University of Manchester has set out to track the immune response in people who are admitted to hospital with COVID-19 in order to identify the processes that could be having a detrimental effect.

A team led by Professor Tracy Hussell are examining blood samples from the Northern Care Alliance Research Collection (NCARC) – an ethically approved research tissue bank – to study the immune cells from COVID-19 patients from Salford Royal and North Manchester General Hospital. This information will be crucial for identifying the right drug to use at the right time to achieve the greatest reduction in mortality.

[Read more >](#)

### EVALUATING CORONAVIRUS ANTI-BODY HOME-TESTING KITS

Manchester Metropolitan University supported a national programme assessing the accuracy and ease-of-use of COVID-19 antibody home-testing kits. Researchers aimed to evaluate and find an effective and convenient at-home kit that can be rolled out nationally, providing fast and accurate results. Bill Ollier, Professor of Life Sciences at Manchester Metropolitan, said: "Given the extreme variability seen in the severity of COVID-19 symptoms, we still do not accurately know what percentage of the population have already been infected and recovered – hopefully with some level of protection. This knowledge can only be achieved through antibody testing."

[Read more >](#)



## Leading the way in clinical trial recruitment



**Why does Greater Manchester consistently perform so well in recruiting participants for research studies?**

**Andy Ustianowski (AU):** “Over the last five years we’ve recruited about 250,000 people to health and care research studies. And the reason for that is really the connectivity we have. We’re a joined-up community and we have good working relationships between the CRN, and all the other organisations that are involved in research. We could not do any of this without that collaboration.”

**Sarah Fallon (SF):** “We work closely with our research active NHS Trusts, primary care and social care organisations. We talk to each other, support each other and have a clear ambition to deliver health and social care opportunities to Greater Manchester communities together. That means sharing initiatives to improve participation experience but also things that allow us to be inclusive across the region.”

Andy Ustianowski



Sarah Fallon



**Why are research studies so important in supporting the health and care of citizens?**

**AU:** “Clinical Research is vital. Everything that we do in medicine should be based on evidence, and we only get evidence from clinical trials. If we take COVID as an example. Only a few months ago we had a new disease but no recognised treatments. Now we know that fairly simple treatments such as steroids dexamethasone or hydrocortisone have an effect on the mortality. We know certain antivirals are efficacious at decreasing the length of the illness. We only know this because we’ve done studies.”

**SF:** “We are always grateful to everyone who considers taking part in research in Greater Manchester. Clinical trials are a really important choice for participants. The CRN support researchers to offer citizens the opportunity to be part of research. We make sure people are fully informed of what is going to happen and ensure they are supported by trained members of staff within that organisation. Some people hear the information and decide it’s not for them, but it’s important that they have the information to be able make the choice that’s right for them.”



### How has research been affected by COVID-19 and what have been the challenges?

**SF:** “For us, a lot of non-COVID related research was paused, so that our researchers could focus on the urgent public health research prioritised by the government. We had a fantastic effort to deliver those studies and over 10,000 participants were recruited from Greater Manchester into COVID research studies. We also saw a lot of our clinical staff redeployed to the frontline or supporting research teams across GM and providing research leadership in the NHS Nightingale Hospital North West. We’re so proud of everybody’s contribution.”

**AU:** “Nationally, I’ve had the opportunity of being part of the new Urgent Public Health Committee, which has been triaging and been assessing studies for those that are most likely to give us the answers in a timely fashion. I’ve also been coordinating some of the COVID vaccines around the country, including into Greater Manchester, which is challenge but definitely worthwhile.”

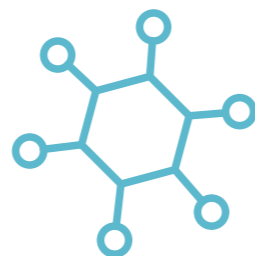
“We’re in a stage of restarting other non-COVID studies that were paused. It’s really important that COVID doesn’t take over everything. We still need to carry on the research into cancer, cardiovascular disease, renal disease everything else. It does take a bit of juggling - we can’t do everything we want all the time - but we’ve got processes that we’re following to try and make sure that research in all areas continues as much as we possibly can.”

### What have you learned during the pandemic?

**AU:** There have been challenges associated with COVID, but there are also new ways of doing things that I think are better and that we can take forwards. National prioritisation processes mean a lot of the red tape has been cut out so things that might have taken months from conception to first patients being enrolled is now taking sometimes two weeks. It is completely different, but it doesn’t mean we’re cutting the corners in the actual research, just the red tape that’s around it. And I think that’s something that if we can carry on in the future will be of huge benefits.”

**SF:** “We’ve proved we can work differently and at speed when faced with a global emergency. And certainly, we have seen an increase in the public’s research awareness. Having the Chief Medical Officer and the Prime Minister talking about the importance of research and how research has a place in combatting in COVID-19 has generated many more conversations about research in living rooms around the country. More health and care professionals that have been exposed to the research taking place in their local services and we hope that it will encourage more people to consider getting involved with research.”

[Read interview in full >](#)



## Research is crucial to understanding COVID-19, says patient Margaret



Margaret McAiney

**Margaret McAiney is one of thousands of COVID-19 patients who has taken part in crucial research aiming to find an effective treatment. She says that even though she was very poorly when asked about taking part, she didn’t hesitate.**

She had been taken to the Royal Oldham Hospital’s emergency department by ambulance in early June after experiencing severe breathlessness.

She said: “It was very frightening – I really couldn’t breathe. As soon as I was taken to hospital they put me on oxygen and I had a scan and X-ray that showed I had pneumonia.”

“The research team came around on the second day I was in hospital. As ill as I was, I knew how important it would be to help. I’d heard about other studies and I said to myself ‘you need to do this.’”

“They were really nice and very thorough, it was reassuring. I knew the treatment I had – which was an injection in my stomach on top of

the antibiotics I was already getting – had been checked and they were very clear that if I wanted to stop at any stage, I could.”

“I know it might not work but at least they will know more at the end of the study and in any case, it wasn’t just about me but about the wider community.”

Margaret, from Hollinwood in Oldham, was already aware of the importance of research as she’s a ward clerk at the Royal Oldham and has worked in the NHS for more than 20 years.

But she says she appreciates it even more now that she’s been directly involved in the ACCORD study. She was able to leave hospital after a week as an in-patient but has been reassured by the detailed follow-up from the research team.

“COVID is not going to go away any time soon – the only way we’re going to understand it is to do research.”

[Read more >](#)



## The importance of applied research during COVID-19



Professor Dame Nicky Cullum

### The NIHR Applied Research Collaboration Greater Manchester (ARC-GM) was less than six months old when the COVID-19 pandemic hit.

Launched in October 2019, NIHR ARC-GM was set up to design and deliver applied health and care research that responds to, and meets, the needs of local populations and the GM health and care system. It is one of 15 ARCs across England, part of a £135 million investment by the NIHR to improve the health and care of patients and the public. Although the organisation was only young, Professor Dame Nicky Cullum, NIHR ARC-GM Director, believes that applied research undertaken by the organisation during COVID-19 has been valuable.

Applied health research is health-related research done with real-world application in mind and it is usually done in real-world settings. It involves the application of core disciplines such as psychology, sociology, economics, statistics and epidemiology, to health-related questions.

Prof Dame Nicky said: “Health and social care systems are similarly complex, with large numbers of people and information passing through them all the time. Applied health research offers a lens through which to view health, and health and social care, in a closer, more detailed way than we normally do. We need to ask important questions and then use the right techniques and the right data to be able to draw the right conclusions.”

Prof Dame Nicky added that during COVID-19 the results of applied health research has support decision-making and enabled a detailed understanding of the impact of technologies, procedures or systems in real-world settings.

For example, within the ARC-GM Economic Sustainability theme, colleagues have examined health inequalities and have worked with the Northern Health Science Alliance and ARC North East & North Cumbria on the impact of COVID-19 on unemployment and mortality. The research analysed data to discover that COVID-19 is hitting the North the hardest and that its effects are likely to last longer in the region.

[Read more >](#)

Researchers have also worked with the Department of Mathematics in the University of Manchester, to support Public Health England in looking at outbreaks in care homes across England. This has involved the careful application of mathematical

and statistical techniques to national data to look at the characteristics of care homes that were linked to increased COVID-19 outbreaks. This enabled colleagues to identify patterns and, crucially, the factors which seem to be linked to more outbreaks, for example staff sharing cars to travel between homes or PPE availability. Knowing which factors are linked to more cases of COVID clearly enables the system to put in place policies or plans to reduce the risk of COVID transmission.

“COVID-19 has undoubtedly been a difficult time for everybody, with everyone having to walk the same tightrope of balancing COVID-19 responses with business as usual,” added Prof Dame Nicky.

“COVID-19 isn’t going away at the moment, neither is cancer or mental ill health or the health needs of our ageing population. We will all need to constantly juggle the competing priorities of the COVID response alongside other urgent non-COVID health issues and the continuing need to prevent future ill health. We need to decide which things are likely to have the biggest impact (whether in research or care), how we can maximise resources, work together and avoid duplication of effort.

“We don’t have all the answers right now and we’re still learning and adapting. But if we can look back and better balance on the tightrope between our response and our business as usual, I think it will make a significant difference to our recovery in the future.”







Laura Rooney

## Placing digital at the heart of transformation during COVID-19

**The advancement and rapid development of digital technology is undoubtedly opening up more opportunities across every aspect of our lives.**

But healthcare has been traditionally slow to adopt new technology - until the COVID-19 pandemic hit and people looked to digital to solve urgent problems.

"I think when a lot of people talk about digital they talk about the technology itself, artificial intelligence or software," said Guy Lucchi, Digital Innovation Director at Health Innovation Manchester and Greater Manchester Health and Social Care Partnership.

"But digital also incorporates the infrastructure, the data, the analytics and how you use those insights to redesign services and reimagine the way you do things.

"By looking beyond the technology itself, you can spot opportunities for transformation and ensure you're creating services that clinicians and health and care staff want to work with and care that patients want to receive."

He added that this understanding of digital has been at the heart of how Greater Manchester have looked to adapt to the COVID-19 pandemic.

**"By looking beyond the technology itself, you can spot opportunities for transformation and ensure you're creating services that clinicians and health and care staff want to work with and care that patients want to receive."**



Guy Lucchi



The GM COVID-19 Health and Care Digital Coordination Group we established to set digital priorities and oversee the work taking place. This included resolving information governance challenges to enable data to be shared at the point of care, supporting primary care with digital access to care and how technology could support residents with long-term conditions or in the care sector.

Mr Lucchi added: "From the start of COVID-19, Greater Manchester set clear priorities, aligned with the needs of the system and the right governance arrangements for digital. But we also needed to consider the people, process and culture changes to allow us to make real and rapid progress."

This focus on the people, process and cultural factors has been woven into the rollout of technology across Greater Manchester.

Laura Rooney, Director of Corporate Affairs and Strategy at Health Innovation Manchester said: "If we look at the acceleration of the GM Care Record, we've spent a lot of time getting the infrastructure and information governance right so six billion rows of data are now pulled into one place for Greater Manchester's GP practices and NHS Trusts.

"Clinicians have the information they need to care for their patients. But while we've spent a lot of time getting that infrastructure right, we've also focused in the engagement and communication so clinicians know about the GM Care Record and have compelling reasons to use it.

"Progress moves at the speed of trust and so it has been vital to develop collaborative partnership relationships across the system."

"Devolution in Greater Manchester has helped with developing those relationships and trust across the system. Along with the rest of the health and social care system, these have been tested during COVID-19.

"There is still work to do in ensuring this trust and confidence in digital transformation continues. But we now have a solid foundation on which to build."

Mr Lucchi added that it's vital that you coordinate and bring stakeholders on the journey to build trust and enable decisions to be made rapidly.

"Digital programmes are having a vital impact in the response to COVID-19 and through the pandemic we've seen that with the right engagement, governance and priorities it can have a transformative affect."



## GM Care Record

**3.1**  
MILLION  
PATIENT RECORDS FROM

**8979**  
UNIQUE USERS

SINCE LAUNCHING IN MAY 2020  
THE NUMBER OF UNIQUE  
USERS HAS GROWN FROM

**4599** → **8979**  
USERS → USERS  
(SEPT 2020)

**78,280**  
PATIENT RECORDS ACCESSED  
(SEPT 2020)

**443**  
GP PRACTICES IN GM FEED  
INTO GM CARE RECORD



**2609**  
PATIENT RECORDS  
ACCESSED EACH DAY

## Digital Primary Care

**449**  
RESPONSES TO THE GM DIGITAL  
PRIMARY CARE SURVEY



**2300**  
LAPTOPS



**1500**  
WEBCAMS  
SOURCED AND DELIVERED FOR  
USE BY GP PRACTICES IN GM



**1720**  
HEADSETS

## Digital Care Homes COVID-19 tracker

**1300**  
RESIDENTS  
ACROSS  
**41**  
CARE HOMES SUPPORTED



**70,000**  
RESIDENT  
ASSESSMENTS  
COMPLETED



**971**  
RESIDENT  
ASSESSMENTS  
IN A SINGLE DAY  
IN AUGUST



## Case Studies: Digital innovations across Greater Manchester

### NEXT GENERATION PLATFORM TO SUPPORT FLOW OF INFORMATION

**A next-generation digital platform which joins up health, care and community, is supporting the sharing of public sector data across Greater Manchester.**

The Greater Manchester Digital Platform promises to use this shared data to digitally transform local services by allowing professionals to view and input into health and social care data, wherever they are.

The platform has the capability to connect and harmonise multiple components and systems across health and care, as well as other voluntary public sector organisations.

The GM Digital Platform is currently hosting data from different sources to connect communities and support health and care professionals with the following initiatives:

- Supporting GM response to COVID-19 with data alerts
- Children and young people's reporting system
- Community hub app
- Virtual hospital pilots in Salford
- Summary care plan for dementia and frailty

The initiative is funded in partnership with the Greater Manchester Combined Authority (GMCA) and NHS England's Local Health and Care Record Exemplar (LHCRE) programme.

[Read more >](#)

### VIDEO CONSULTATIONS PROVIDE EXTRA CHOICE FOR PATIENTS

NHS organisations have rolled out digital solutions to allow patients to continue appointments. Tameside and Glossop Integrated Care NHS Foundation Trust began to use NHS Attend Anywhere, a secure web-based platform for some outpatient appointments.

[Read more >](#)

Stockport NHS Foundation Trust also launched their video appointment service for community heart failure patients in mid-April before rolling out to other areas including community diabetes, nutrition, COPD, health visiting and occupational health following positive feedback.

[Read more >](#)

### USING ARTIFICIAL INTELLIGENCE TO FIGHT COVID-19

Manchester University NHS Foundation Trust (MFT) and The Christie NHS Foundation Trust in Manchester are trialling wireless monitoring technology which, when combined with artificial intelligence (AI) could lead to quicker interventions for patients with COVID-19.

The (C)ontinuous Signs Monitoring In Covid-19 patients) COSMIC-19 pilot study aims to identify in advance patients who will deteriorate, and predict those who will need intensive care treatment. The research team are using a state-of-the-art monitoring platform, which uses wireless, wearable sensors to automatically collect and analyse each patient's vital signs such as pulse rate, temperature, breathing and oxygen levels in real time.

Together, the team will use AI to look for patterns in the patients' vital signs that could alert the medical team if the patient is deteriorating. If the data indicates that the patient needs critical care, the medical team could potentially intervene earlier, giving patients the best chance of recovery.

The COSMIC trial, led by Professor Fiona Thistlethwaite, medical oncologist at The Christie, said: "Unfortunately some patients who are suffering from COVID-19 on our hospital wards can become seriously unwell. By using this system, we hope to be able to identify these patients early and this may mean we can optimise their management without the need for them to go to intensive care."

[Read more >](#)

The Royal Bolton Hospital also used AI technology to monitor COVID-19 progression in patients. Bolton NHS Foundation Trust was the first Trust in the UK to use Qure.ai's technology to automate the interpretation of COVID-19 proliferation from chest X-rays, making it easier for healthcare professionals to monitor the extent and rate of progression of the viral infection.

Fiona Noden, Chief Executive of Bolton NHS Foundation Trust, said: "The NHS needs to consider using all resources available to us as we fight against this devastating virus. I'm very proud that here in Bolton we're taking the lead in using some of the very latest technology."

[Read more >](#)



## The doctor will virtually see you now: Transforming Primary Care through Digital Innovation

**From video consultations to online consultation, GP practices rapidly adopted digital technology in order to continue to provide care to their patients while maintaining social distancing and shielding during COVID-19.**

Almost all GP practices across the city-region have now rolled out video consultations and no longer rely on face-to-face appointments to care for their patients. In total 97% of practices have also rolled out digital technology to enable online triage. This allows patients to request help from their GP practice by completing a short form online, which is then assessed by a practice clinician to offer the right care, including a telephone or virtual appointment, or referral to other services or self-care.

To ensure that practices and patients reap the full benefits of this new technology, Health Innovation

Manchester has worked on behalf of the COVID-19 Digital Coordination Group and the Digital Primary Care Board in GM to develop a set of standards and outcomes which all practices should work towards, regardless of what digital products they have implemented.

Developed through a series of workshops with representatives from the system including GPs, practice managers, technical experts and members of the public, the digital primary care outcomes framework aims to support localities to make improvements to the quality of care and treatment they provide, enabled by digital technology. It has also been informed by Public Community Involvement activity including a GM Digital Primary Care Survey and four focus groups with a variety of cohorts including those over 70, BAME citizens and those shielding.

**Guy Lucchi, Digital Innovation Director at Health Innovation Manchester and Greater Manchester Health and Social Care Partnership, said:**

“Primary care across Greater Manchester has quickly adapted to new ways of working and new technology in order to continue providing care for patients during an incredibly challenging time.

“The key to tech-transformation is not to focus on the technology itself, which of course has to be intuitive and effective, but is instead to focus on the people, process and cultural factors that need to be addressed in order for full transformation to be realised.

“We must now work towards supporting localities to ensuring that the technologies deployed rapidly into the system are fully embedded and can improve outcomes for patients during COVID-19 and beyond.”

[Read more >](#)



## Digital primary care Case Studies



### IMPROVING CARE FOR PATIENTS

Tower Family Healthcare, an NHS GP practice with four sites in Bury, have seen “transformational” changes to the way they operate after rolling out online consultation and workflow system askmyGP in March.

Dr Simon de Vial, GP and Chief Executive, said: “This has been the most transformational change to the way we work that I’ve seen in 28 years as a GP. It saves patients time and hassle of waiting in telephone queues and it enables us to treat patients quicker as they have already briefed us on their symptoms online, meaning we can provide more time for patients with complex conditions.”

Using a digital-first approach has also supported the GP practices to plan better. Paul Massey, Executive Partner of Business Development and Finance at Tower Family Healthcare, said: “We have exceptional clinicians and staff, so we always felt that we could offer a better service to our patients. The new system has allowed us to do that using data and the ability to predict the demands on our services and adjust our capacity.”

### ENCOURAGING PATIENT EMPOWERMENT

Dr Paul Jackson, a GP partner at Boundary House Medical Centre in Sale, Trafford, had already begun to use digital services and felt well prepared to adapt to the challenges of COVID-19. Requests using the digital route rapidly increased while face-to-face appointments decreased to less than 2% of requests in the early months of the pandemic.

Dr Jackson said: “Our clinicians have become more comfortable managing patients remotely and we continued to offer fast same day access. It has energised the workforce, made us more resilient and fit for the future. There are no long waits for primary care contact and clinicians can offer appropriate amounts of time to those that need it.”

### SUPPORTING THE HOMELESS POPULATION DURING DIGITAL INNOVATION

Dr Chris Nortcliff, GP and Head of Practices at Salford Primary Care Together CIC, says they have introduced mobile phones to homeless shelters in Salford, set up to allow online registrations and video/telephone consultations in order to support homeless people to access support.

He said: “COVID-19 has highlighted how digital can exacerbate access problems for some people without access to technology or data, not enhance it. Introducing the mobile phone to shelters means we can remove some of the barriers to people accessing care. It is only small numbers of people, but it has shown in a real way how easy it is to get people the support they need in a new way through digital.”





**“Never before has the need for health and care to be able to access up to date information about their patients – including their medications, test results and care plans – been so important as it has during COVID-19,” said Prof Ben Bridgewater, Chief Executive of Health Innovation Manchester.**

GPs, doctors, nurses and practitioners need access to this information to inform the right care and treatment for their patients but, until recently, this information was held locally in existing borough-based care records and not shared across the locality boundaries. Instead, the system relied on patients repeating their medical history to each professional they encountered within the health and care system.

## Accelerating vital data sharing to fight COVID-19

As part of the COVID-19 response, it became vital to accelerate work already underway to deploy a single joined-up record for all citizens in Greater Manchester to ensure no matter where patients were being treated, clinicians had the information they needed. The GM Care Record project has been overseen by Health Innovation Manchester and the GM Health and Social Care Partnership, working on behalf of GM’s devolved health and care partners. Rapid progress has been made in weeks rather than months as part of the city region’s COVID-19 digital response plan and collaborative effort.

Prof Bridgewater continued: “The accelerated deployment of the GM record is a major step forward in ensuring patients are provided with the best possible care based on the most accurate and up to date information.

“It is also a testament to the strength of our existing devolved partnerships across GM to take swift action on things that will directly benefit patients and frontline services.”

The system has been developed by tech company Graphnet, which specialises in developing health and care IT solutions.

In total, 3.1 million patient records from 443 GP practices in GM and data feeds from all mental Health NHS Trusts and all NHS Acute trusts are now flowing into the GM Care Record. It includes information about when a patient has been tested or diagnosed with COVID-19, allowing GM to track and understand the impact of COVID-19 and to develop programmes of work to counter the pandemic.

Since launching in May 2020, the number of unique users has grown from 4,599 users to 8,979 users and more than 2,609 patient records are being accessed a day on average.

The ability to share data through the GM Care Record is backed by a GM-wide approach to data protection and information sharing in accordance with national guidance, such as defining under which circumstances professionals can access the record.

As well as being able to access information for direct care, anonymised data in relation to COVID-19 can be used for research and planning purposes to gain a greater understanding of COVID-19, how best to tackle it and the type of services that needs to be in place. This will be overseen by an expert group including members of the public, researchers and clinical leaders.

[Read more >](#)

## What are people saying about the GM Care Record?

### **Dr Tom Tasker, GP and Chair of the GM Joint Commissioning Board:**

“It has been a great achievement to move forward with the GM Care Record at such pace and scale. Providing health and care professionals with access to this information is essential in the fight against COVID-19 and ensuring continuity across care pathways.”

### **Karen James OBE, Chief Executive of Tameside Integrated Care NHS Foundation Trust and member of the GM Provider Federation Board:**

“The GM Care Record will have a direct impact on the quality and precision of care we are able to provide patients, particularly those with complex needs across multiple specialties. Sharing this information has never been more important as it will greatly aid clinical decision

making and will reduce the burden on both patients on clinicians, freeing up valuable time to care.”

### **Dr Joanna Bircher FRCGP GP Partner, Stalybridge:**

“As a GP, it is so helpful to be able to access information from other healthcare environments about the people I look after. It gives me the opportunity to properly coordinate care for people and to help them to make sense of their conditions and investigations.”

### **Patient, One Manchester Patient Group:**

“I feel that people would have more confidence in their treatment if those caring for them had an accessible and complete view of their medical history through the GM Care Record.”

### **Patient, One Manchester Patient Group:**

“As a person with multiple co-morbidities, it would certainly

benefit me if patient information was shared. For example, the hospital I see my specialists at is Salford Royal, but my nearest A&E is Stockport. If I need A&E and I am not conscious, how will they know what meds I am on?”

### **Dr Wirin Bhatiani, Chair, Bolton CCG:**

“This is a really positive step towards making the treatment of patients as seamless as possible as vital information about their condition, medication and previous care will be available and accessible to whomever may be treating them.” Debbie Reed, Community Admin Coordinator, Rochdale Community Mental Health Team: The GM Care Record benefits my role as I can quickly identify who has had a physical health check and who hasn’t. This is really useful for gathering/collating information, especially if we’ve assessed a service user but one vital piece of information is missing.”



## UK-first COVID-19 tracker supporting care home residents



Dr Saif Ahmed

**As cases of coronavirus began to rise dramatically, the ability of the virus to rapidly spread within care homes and put some of the most vulnerable in society at risk became an urgent issue to solve.**

Care home staff needed support to track outbreaks among their residents and coordinate care with GP practices, social care and hospitals to optimally support vulnerable residents.

"We knew that because of the multimorbidity and frailty of our care home residents, they were at a much higher risk of COVID-19. Unfortunately, outbreaks were happening, and people were passing away, so we had to act," said Dr Saif Ahmed.

Health and care professionals from Greater Manchester began working with tech company Safe Steps to solve this issue, creating a UK-first digital innovation in the process. The COVID-19 tracker allows care homes staff to input information about a residents' COVID-19 related symptoms into a digital platform, which can be shared directly with the resident's GP and NHS community response team to ensure that a swift assessment and response can be put in place.

It also meant that the NHS could more closely monitor how care homes are doing thanks to a visual dashboard that displays the information at an aggregate level. For care homes in Tameside and Glossop, which was the first locality to pilot the tracker, the solution made a rapid difference to how they cared for patients. Care home managers and staff were able to capture information, monitor their residents and get the advice and support needed from the wider NHS system.

In the first four months, the tool has been used more to proactively support the health of more than 1,300 residents across 41 care homes. In total than 70,000 resident assessments have taken place, including 971 residents assessed in a single day in August.

Dr Ahmed continued: "Essentially, the tracker uses a set of questions that carers can complete for each resident within 30 seconds and easily monitor for any changes. And because it was so simple and easy to use, uptake within care homes has been fantastic. Carers have themselves seen the benefits of using the app and have been regularly logging in to update the tracker as part of their day-to-day business as usual. We know staff are

incredibly busy and if they weren't seeing the benefit of the tracker, they simply wouldn't continue to use it."

Following the success in Tameside and Glossop, the COVID-19 tracker has now been rolled out to care homes in Salford and Stockport, with other localities planning rollouts soon.

The tool was developed as part of a partnership formed by Health Innovation Manchester (HiM), including the Greater Manchester Health and Social Care Partnership, Tameside and Glossop Integrated Care NHS Foundation Trust, Tameside Council, local GPs and Safe Steps.

Dr Ahmed said: "The partnership working and having key leaders supporting the project has been key. Because, if you don't have strong leadership and buy in for the system, it won't get rolled out. Having the links across the system, knowing who to pull in and creating a motivated team allowed us to move at pace and deliver the tool quickly.

"The benefits of the COVID-19 tracker can have a transformative impact for care homes across Greater Manchester which is why we are passionate about rolling it out to more localities. I do believe if we can get it rolled out across GM it will be a game-changer."

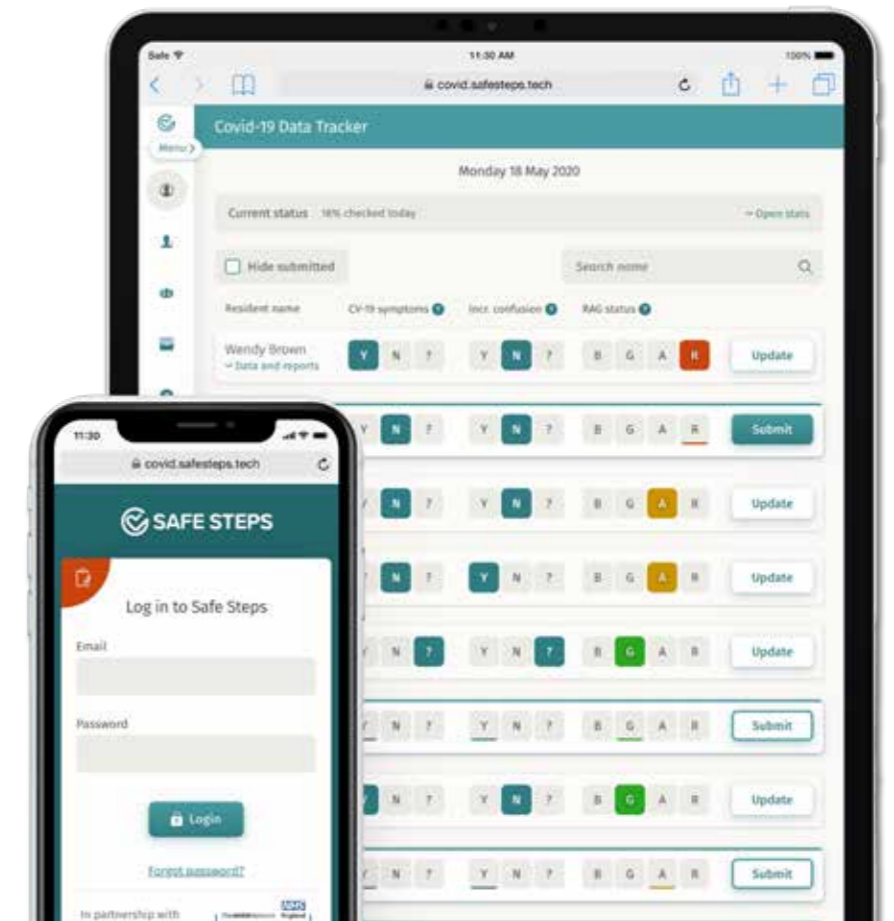
**"The benefits of the COVID-19 tracker can have a transformative impact for care homes across Greater Manchester which is why we are passionate about rolling it out to more localities. I do believe if we can get it rolled out across GM it will be a game-changer"**

Health Innovation Manchester works with innovators to develop their products and services to support the NHS and social care, including working with Safe Steps on the COVID-19 tracker.

Lee Omar, Director of Safe Steps, said: "When the current pandemic really started to accelerate we decided to use our technology and experience in this sector to rapidly build a new app - not because

we had to, but because the team here are passionate about doing everything we can to help our ageing loved ones, relatives, neighbours stay safe.

"Being able to play a small part in the NHS response to the current crisis is both humbling and motivating at the same time. I'm really proud of my team for stepping up to the challenge, but we also know the real heroes are the NHS workers on the frontline - we are just trying to support them."





**Supporting  
the system**





## Six months in and at a critical point for innovation



Dr Tracey Vell



Amanda Risino

**It is undeniable that COVID-19 has accelerated innovation within health and care – from rapidly mobilising the use of virtual consultations to developing new practices to improve patient safety.**

But, with the COVID-19 pandemic continuing, how can Greater Manchester ensure that innovations are embedded and continue to support the system, particularly as the NHS prepares to combine yearly winter pressures with a potential second wave of coronavirus infections?

“We’re now six months in to COVID-19 and at a critical point within the pandemic for us as an innovation organisation and the health and care system,” said Amanda Risino, Chief Operating Officer at Health Innovation Manchester.

“What has been clear during this period is that Greater Manchester doesn’t need us to be an organisation that parachutes in an innovation and provides temporary support without embedding it within the system. To enable innovations to be

sustainable, we also need to ensure it is successfully meeting priorities and that the people, process and cultural factors at work have been addressed before we pull back and start something new.”

Organisations across Greater Manchester have worked together on common goals and priorities during COVID-19. It means there has been a ground-up approach to innovation – creating solutions to the problems facing the system and sharing them across GM.

She continued: “Having a ground-up approach to innovation and directly collaborating with our partners to develop innovations and support them through to adoption and spread across Greater Manchester means we’ve developed fantastic relationships with our stakeholders.

“Being linked to national networks, such as The AHSN Network and Patient Safety Collaboratives, has meant we can share our successes, our learnings, our challenges with the wider health and care system and learn from each other at a national scale.



“Everyone wants this to continue as we look to the next stage of the pandemic and how we can continue to innovate and solve problems together. We have more challenges to face but the past six months have given Greater Manchester the tools, experience and relationships that we need to adapt and continue to accelerate innovation and support the health and social care system.”

A key part of sustaining innovation has been engaging with clinicians and those on the frontline to embed new practices or technology.

“Throughout COVID-19 we’ve probably been working at greater speed than we are used to across the system,” said Dr Tracey Vell, Clinical Director at Health Innovation Manchester.

“We’ve had to work quicker and make decisions as a system to innovate, ensure we’re addressing the needs of our system and doing the best for our patients and residents. But we’ve also had to ensure that we are still engaging

thoroughly with our clinicians who are working hard on the frontline of the pandemic to make sure that our decisions will support them.”

She added that during COVID-19 this has meant engaging across a range of programmes including how GPs are using online consultations and understanding the impact of a digital COVID-19 tracker for staff in care homes.

Dr Vell, who is also Medical Executive Lead for Primary Care for Greater Manchester Health and Social Care Partnership said: “The ‘people’ part and the engagement work of any transformation is valuable time spent because we have to change culture, not just pathways and the ways of doing things. An essential part of our innovation work has been getting to the frontline clinicians, the carers, the patients and citizens themselves to make sure that it is a person-centred transformation.

“And this is a difficult to do, not least during a pandemic when services are

stretched, staff are under pressure, virtual meetings are the norm and innovation needs to happen at pace and scale. But in Greater Manchester we’ve been aided in this journey by the variety of our health boards, networks and patient and citizen groups. More importantly, it also gives us a chance to have them feed in the problems they are facing and connect innovation to their needs and priorities. A lot of the best innovations come from problem statements on the frontline.”

She added that as we pass the six-month milestone of COVID-19 it is now about looking back at the priorities for supporting the system, engaging with clinicians and knowing where we can add value.

“I’m a clinician myself and see any number of innovations that could be helpful, but it’s not about doing everything at once, it’s about working as a system to set out what we should prioritise now to have the biggest impact. The only way to make sure what we’re prioritising now is right is engagement with the system.”



## Supporting Urgent and Emergency Care

**Understanding the impact of COVID-19 on urgent and emergency care and how local systems can adapt and respond to outbreaks has been a vital piece of work undertaken by the Utilisation Management (UM) Unit within Health Innovation Manchester.**

The UM Unit repositioned its urgent and emergency care expertise to support system wide plans. With expertise across clinical and analytic specialities, including Registered Nurses with emergency care, urgent care and acute medicine background and analysts with decades of experience interpreting health care data sets, the team were well placed to support the system.

Dr Paula Bennett, Associate Director of Clinical Development at Health Innovation Manchester and UM Unit Lead, said the Unit has continued to collaborate with multiple health and care organisations ensuring pathways across urgent and emergency care are safe for patients and staff and are sustainable during and after COVID-19.

Dr Bennett said: "Understanding the impact of the pandemic on our Urgent and Emergency Care (UEC) services through pathway evaluation and data analysis is helping our local health and care system respond to the ongoing outbreak and plan for the future."

This has included supporting the acceleration of the Greater Manchester Health and Social Care Partnership UEC Transformation and Improvement plan which was already agreed immediately prior to the COVID-19 pandemic.

The collaboration with the UEC Team at the Partnership has included the Greater Manchester Clinical Assessment Service (CAS), which enables more patients to be managed by primary or community services and reduces the need to transport patients to an Emergency Department.

It has also included support for a hospital-based response across all 10 localities in GM, working to establish effective and efficient pathways to ensure that delays are minimised and an admission to hospital is part of the pathway when treatment cannot be delivered elsewhere.

The UM team are also part of the acceleration of the GM Care Record, creating a single joined-up record for all citizens in Greater Manchester to ensure no matter where patients were being treated, clinicians had the information they needed – something that has never been more important than under the current circumstances.

Dr Bennett added: "The UM Unit and I are very proud to be supporting our partners on the frontline to ensure patients are cared for in the right place and at the right time, and that staff have the information they need to ensure they can continue to respond to the challenges of COVID-19."



Dr Paula Bennett



## Mental Health: A city-wide response

### COVID-19 brought high levels of uncertainty, anxiety and worry into the lives of citizens in Greater Manchester.

Lockdown left many feeling lonely and isolated, separated from friends, families and colleagues and additional pressure was placed on mental health services.

Within weeks of the lockdown being announced, Mayor of Greater Manchester, Andy Burnham, and Chair of the Health and Social Care Partnership, Sir Richard Leese announced an agreement for a city-region response on mental health to complement work already happening at a local level.

This included the launch of a range of digital services and online support for children and adults across Greater Manchester to minimise the need for people to attend GP surgeries or hospital.

It meant people who are already experiencing mental health issues and anyone struggling with the new social distancing and self-isolation restrictions could get quick support from their own home.

Within the first few months, thousands of people across Greater Manchester used one of the digital mental health services with the availability of the digital innovations leading to a positive impact on citizens requiring support.

Greater Manchester will continue to monitor the use and outcomes of the new digital mental health innovations until March 2021 to assess their benefits during COVID-19.

A snapshot review to help inform the Greater Manchester Mental Health recovery planning and prioritisation process focusing on emerging needs in communities/localities due to the COVID-19 Crisis has also been completed.

Information was captured from across the GM system, including mental health provider Trusts, CCGs, Local Authorities, Social Care, charities, communities and service users. The review found:

- There is a need to take preventative and proactive approach to support those with mental health issues which do not meet clinical thresholds.
- Organisations and communities have worked together in response to COVID-19 and there is a desire to further build on this.
- Innovation has been accelerated with enhanced agility as a system and there is a need to consider how to maintain the most effective innovations.

This report is now influencing the planning across Greater Manchester in a variety of settings in order to prepare for the future mental health requirements within GM, during another wave of COVID-19 and once the pandemic has passed.

The work taking place across Greater Manchester to support mental health has been a collaborative approach with GM operating as a single system across providers, commissioners, the VCSE sector and other organisations.

Zulfi Jiva, Head of Cross Cutting Programmes at Greater Manchester Health & Social Care (GMHSC) Partnership, said: "It is showing the difference that can be made when all the different stakeholders to come together in a comprehensive way and in a structured way.

"Within Greater Manchester we have a fantastic opportunity to work together, make efficient and effective decisions guided by our partner organisations and those with lived experience of mental health, to benefit all our residents and improve lives.

"I'm very proud of the progress we have made, especially during COVID-19 and that we are now starting to see the outcomes and benefits that the rapid rolling out of the mental health innovations is having on our people. You can see this impact in the feedback we've received from resident."

[Read more >](#)

## The Innovations

**SHOUT** – a confidential 24/7 text service operated by trained crisis volunteers who will chat using text responses. Advice is available for anyone struggling: anxiety, depression, suicidal thoughts, abuse or assault, self-harm, bullying or relationship issues. 136 conversations have taken place with people from GM and a user satisfaction survey shows that 96% of respondents found the conversation to be useful.

One user said: "I really appreciate all the help offered. It was nice to be able to tell someone what happened to me without feeling ashamed of it."

**Kooth** – an online counselling and emotional wellbeing platform for children and young people. 4,300 young people have accessed support through Kooth during the first three months of the services being

available across all 10 boroughs, including 2,857 new users. This resulted in over 11,700 messages on the platform and almost 6,000 article views. Overall 95% of users said they would recommend Kooth and 84% said they felt heard.

Feedback from one user included the comment: "I feel so much more positive about myself now. I feel like a different person. I feel supported and valued and as a result I'm making changes in my life."

**SilverCloud** – an online therapy programme for adults proven to help with stress, anxiety, low-mood and depression. Since April 2020, 1013 licences for SilverCloud's online self-help mental health support have been accessed. On average more than 90% of users found the modules to be interesting, relevant, helpful or supportive.





## Learning from Greater Manchester's People and Communities during the COVID-19 Pandemic



Professor Caroline Sanders

### Engaging and involving public contributors and the Greater Manchester community is essential to improving health care.

During the COVID-19 pandemic, a range of public contributors have helped help design, align and enact key activity across Greater Manchester through Public and Community Involvement and Engagement (PCIE) panels.

This has included the new Greater Manchester PCIE forum, which brings together leaders (both staff and public) of public and community involvement and engagement from health and care organisations

including universities, research infrastructure, health and social care providers, the Greater Manchester Health and Social Care Partnership and the voluntary, community and social enterprise sector.

Professor Caroline Sanders, Lead for Public and Community Involvement and Engagement for ARC-GM said it has been crucial to engage with members of the Greater Manchester PCIE Forum during recent months.

She said: "The forum brings together leadership for public involvement and engagement from across Greater Manchester organisations and communities focusing on health, care and well-being. It has been a platform for sharing experiences and learning during the pandemic, especially concerning inequalities for marginalised and seldom heard communities.

"The forum has been a platform for our formal system organisations (e.g. universities, NHS) to learn from the fantastic innovation within our voluntary sector organisations and networks that have joined us to work together."

In the past six months the forum has been involved with discussions surrounding the impact of the COVID-19 pandemic on minority groups, existing inequalities and communities. The forum has also discussed experiences of health and healthcare during COVID-19 as well as digital literacy and exclusion.

Professor Sanders continued: "Our online community has rapidly generated new partnerships and activities to address major challenges faced during the COVID-19 pandemic, including how to maximise diversity and inclusion; how to address social isolation and digital inequalities; and how to coproduce appropriate services and innovations.

"There has never been a more important time to ensure that we are listening to our public members and the people who support them. Our work with the forum has given us the ability to reach out across Greater Manchester in ways that would not have been possible on our own."

[Read more >](#)



## Improving tracheostomy care during COVID-19



Dr Brendan McGrath



Jay Hamilton

**The COVID-19 pandemic has placed unprecedented pressure onto the healthcare system, with a surge in critically ill patients requiring ventilation support and temporary tracheostomies as they recover.**

A tracheostomy is an artificial opening in the front of the neck into the trachea (windpipe). A small plastic tube is inserted into the neck for patients in intensive care who need help with their breathing, particularly when they're recovering from critical illness and they've been on a ventilator for some time.

While the tracheostomy tube is in place it needs to be cared for to keep the airway clear and prevent complications. Patients experience problems with communication, eating and drinking. So, while tracheostomies are lifesaving for patients, they can also be life limiting and life threatening if not looked after properly.

Dr Brendan McGrath, national clinical advisor for the National Patient Safety Improvement Programmes' COVID-19 safe tracheostomy care response and intensive care consultant at Manchester University NHS Foundation Trust, said: "It was vital

that we could provide the staff caring for these patients with the skills and knowledge to provide the best care and ensure the environments they were working in had the appropriate infrastructure."

He added that before COVID-19 hit, plans were in place to launch a comprehensive package of quality improvement interventions for tracheostomy, but the pandemic accelerated the need to rapidly spread these interventions to improve care.

Working with the AHSNs, including Health Innovation Manchester and Innovation Agency, and the Patient Safety Collaboratives, the Safer Tracheostomy Care toolkit was created to provide clinicians with three key safety elements.

- A standardised tracheostomy daily care bundle
- Bedhead signs with key information about the procedure to support rapid communication in an emergency
- Standardised 'bedside' tracheostomy emergency equipment available at all times

Dr McGrath continued: "During the pandemic we've had anecdotes from patients which highlight why

improving tracheostomy care is making a difference to them – the joy of being able to drink their first cup of tea after being critically ill for six weeks or telling their family they love them once their voice returned. If we can help bring these crucial moments to patients a day, a week or a month earlier by implementing quality improvement changes it can have a huge impact for the patient, their family and staff looking after them."

He added that the education programme and resources provided to staff had also made a huge difference and had removed the anxiety they had previously felt when treating patients with tracheostomies.

"They know they have the knowledge and access to equipment

and resources they need, when they need them. More confident staff feeds through to patients, and our work has demonstrated real reductions in patient anxiety as a result of these improvements in care," Dr McGrath added.

The work has been supported by AHSNs across England, including Health Innovation Manchester, with teams working to rapidly spread the safety interventions at the start of the pandemic.

Jay Hamilton, Associate Director of Health & Implementation and Patient Safety Collaborative Lead at Health Innovation Manchester, said: "We knew the interventions needed to be easily and quickly accessible to teams who were already being put under intense pressure and in unfamiliar care settings. They had

to inspire confidence and skills in these staff members to provide safe care without overburdening or overwhelming them."

She added that the feedback from clinical staff has been that the toolkit was easy to access and enabled staff inexperienced in dealing with tracheostomies to feel with confident and competent. Jay continued: "If you think that that's been done in the space of 12 weeks we have achieved a lot. We can show demonstrable improvement where tracheostomy care interventions are being used widely and we're starting to see good outcomes for staff and patients. It is a testament to how well the PSCs and AHSNs are collaborating with their systems."

[Read more >](#)





## Aligning Greater Manchester's clinical and academic strengths during COVID-19



Professor Peter Clayton

Greater Manchester's universities, faculties and clinical academics have collaborated and responded across all specialities to support the COVID-19 pandemic.

As well as the phenomenal research efforts taking place across the different organisations, higher education institutions have supported by mobilising a clinical workforce to return to the frontline or graduate early.

Professor Peter Clayton, Chief Academic Officer at Health Innovation Manchester and Manchester Academic Health Science Centre (MAHSC) Clinical Director, believes that this collaborative response was made possible by having mature partnerships already in place before the pandemic began.

He said: "Through MAHSC we have partnerships between universities and NHS organisations working together to undertake world-leading research to tackle diseases, develop new treatments and transform patient care.

"We had strengthened those relationships recently as we worked together to be redesignated as an AHSC, which we were awarded at the start of the pandemic by National Institute for Health Research (NIHR), NHS England and NHS Improvement until 2025.

Building on those relationships, continuing to develop them and knowing what could be achieved when we worked together helped us rapidly mobilise our response to the pandemic."

This included organising a system to capture members of staff within universities returning to clinical practice and supporting faculties who were looking to graduate students on medicine, nursing or other healthcare courses early so they could start work in healthcare settings.

It was also important to collaborate on donating PPE to frontline services to protect health and care workers.

Professor Clayton continued: "We brought together the GM Universities, including the Faculties of Science & Engineering and Humanities in University of Manchester, to work collaboratively with our partner Trusts to ensure that the donations were getting to the right places with the right approvals in place to make a difference.

"The pandemic has shown us that if you bring all the different parts of our research system together in one place and have the processes in place, you can make decisions and respond effectively and rapidly."

## Case Studies



### INTERNATIONAL EFFORT TO SUPPORT RADIOGRAPHERS

The University of Salford lead an international effort to develop new e-learning resources for radiographers caring for patients with COVID-19. The project created a free online information and support system, with a particular focus on training and advice for radiographers carrying out mobile chest X-rays of patients who have coronavirus. Professor Peter Hogg, professor of radiography at the University of Salford led the project and helped co-ordinate a multinational team of over 40 people, including radiographers and radiography leaders. He said: "As the coronavirus pandemic has spread, the demand for CT scans and mobile chest X-rays has increased, but not all radiographers are up to date with this technique. Providing this online information and support resource means that tens of thousands of hours can be saved across the world in creating training materials and delivering training session and more time can therefore be spent on caring for patients."

[Read more >](#)

### MMU STUDENT NURSES JOIN NHS FRONTLINE IN FIGHT AGAINST COVID-19

More than 100 Student nurses from Manchester Metropolitan University joined the frontline in the fight against Coronavirus at hospitals around the UK. The University answered the call for nursing students to rapidly plug a shortfall in the number of nurses in the NHS as COVID-19 cases dramatically rose across the UK.

Lauren Ashworth, a third-year student nurse, joined the the frontline in May at Stockport's Stepping Hill Hospital. She said: "I felt I was competent enough to step up but it wasn't an easy choice though, there were some difficult conversations we as a family had to have.

"I was already banking a lot more than usual as a care support worker in my way of helping, so being able to work at a higher band and gain further experience during this pandemic seemed the right thing to do. I'm a big believer that everything happens for a reason, although it's not the way I imagined ending my degree."

[Read more >](#)

### DELIVERING CARE PACKAGES

Dr Haider Ali, a GP and part-time lecturer at The University of Manchester delivered over 450 care packages to staff working in the public services who have been living in hotels during the COVID-19 Lockdown. He spent his spare time his spare time visiting police officers, firefighters as well as nursing homes, pharmacy and NHS staff to deliver food, toiletries and treats. After forking out a considerable sum of his own money, he contacted the CEOs of different companies eventually started to receive give-aways.

Dr Ali said: "I want to be able to say to myself I did something of value during the lockdown. But I also want to highlight the amazing things these people are doing.

"I have been absolutely overwhelmed by the response of these companies. It has been really uplifting. It's been hard work, but there are people who are working a lot harder than me. At least I can go home to my family each night."

[Read more >](#)



Dr Haider Ali



## From fashion to the front line – Universities and NHS organisations produce and donate vital PPE

**Dedicated staff and volunteers across Greater Manchester's universities and NHS organisations have supported those working on the frontline in the fight against COVID-19 by producing and donating vital personal protective equipment.**

In a combined effort, universities have utilised 3D printing capabilities, workshops and fashion garment technicians to support the creation of protective face masks, headbands and medical scrubs for NHS and social care staff caring for patients on the frontline and in social care. 3D Printing headbands and visors for NHS staff.

The University of Manchester has used nearly 50 3D printers to produce PPE visors and mask headbands for protective facemasks worn by NHS medical staff.

Professor Brian Derby is coordinating the 3D printing response at The University of Manchester. He said: "3D printing has allowed the Greater Manchester-based team to progress rapidly from concept, to prototypes, which allowed infection control teams to validate the design and enable the production of PPE acceptable for use in the regions hospitals."

The University has also donated a stock of PPE including 47,660 pairs of nitrile gloves and 200 pairs of protective goggles donated to local health practices to help safeguard doctors and nurses.

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A University of Manchester academic has also helped Manchester City Council coordinate and test thousands of pieces Personal protection Equipment (PPE) so that they could be delivered to key workers in the city. The council received approximately 150,000 pieces of PPE via companies and donations from across city. But before the equipment could be distributed, the Council needed to check that it was suitable for use by key workers. Dr Obuks Ejohwomu, Director Commercial Project Management in the Faculty

of Science and Engineering, led a team of experts and organised video conferences, e-mails, physical testing and a wrap-up video conference all in under eight calendar days to support the council.

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### Producing visors for the frontline in Salford

The University of Salford's Maker Space, a state-of-the-art engineering and digital fabrication facility, developed a visor prototype and sent to commercial fabricators and university technical departments in the North West to scale production. Biomedical staff have also donated around 37,000 pairs of disposable gloves, over 500 lab coats, 100 pairs of safety glasses and 10 full body suits, as well as a supply of hand sanitiser to Salford Royal NHS Foundation Trust.

Professor Sheila Pankhurst, Dean of the School of Science, Engineering and Environment, said: "Staff acted swiftly and with great generosity to get much needed supplies and equipment to the frontline of this battle. When we put the call out for volunteers, we were inundated with staff wanting to help."

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Dr Obuks Ejohwomu

MFT staff using the innovative Bubble PAPR







Staff and local volunteers at Salford Royal NHS Foundation Trust, part of the Northern Care Alliance NHS Group, also supported their colleagues by producing visors. The prototype for the visor was created by Dr Glyn Smurthwaite, Consultant Anaesthetist and Dr Stuart Watson, Head of R&D Services in Medical Physics, who agreed the final design concept from home while in self-isolation.

A production line was quickly set up with staff and volunteers from the community with more than 28,000 visors now made and distributed to staff.

Glyn said: "We knew that staff needed vital face protection to stay safe so we decided we needed to act fast and began producing the visors. We sourced foam, plastic, elastic and staples and set up our own little production line at the hospital."

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#### Supporting production of medical scrubs and gowns

Manchester Metropolitan University's Garment Technical Services team within the University's Manchester Fashion Institute have put together a technical template to produce medical scrubs and gowns

in bulk and have worked with the Business Development team to source raw materials for the mass production of protective clothing for hospital workers. Academics at the university's Department of Natural Sciences have also donated boxes of gloves, overshoes and protective suits to NHS hospital staff.

Professor Liz Price, Head of the Department of Natural Science, said: "Donating this equipment is just one way in which we as University are able to aid the efforts of this ongoing battle, as we now work to find ways in which we can continue to make a meaningful contribution." The University's 3D printing hub PrintCity also produced thousands of parts for personal protective equipment (PPE) for hospital workers. Experts also designed a new device which aims to help prevent the spread of germs and viruses through reduced contact with door handles with the final product designs made available online for anyone to use.

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#### Designing PPE Respirator

Staff in the Intensive Care Unit at Wythenshawe Hospital, part of Manchester University NHS

Foundation Trust (MFT) have developed Bubble PAPR, a Powered Air-Purifying Respirator (PAPR), to keep healthcare workers safe during the COVID-19 pandemic. This simple and low-cost device consists of a reusable collar containing a fan to draw in air through a virus filter and a single-use plastic hood that can be easily recycled. Bubble PAPR has been designed to be compatible with stringent infection control practices and be comfortable to wear for the duration of a shift in the ICU, or other high-risk areas.

Dr Brendan McGrath, Intensive Care Consultant at Wythenshawe Hospital, has been the clinical lead through the development and testing process. He said: "The reaction from staff has been overwhelmingly positive: they saw something that was not restrictive on their face, that allowed them to communicate with their colleagues, that was pleasant to wear and will allow them to interact with their patients."

The Bubble PAPR is part of an ongoing collaboration between MFT, Designing Science and The University of Manchester to identify unmet clinical needs and work collaboratively to develop new solutions.

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