

IMPACT REPORT 2019 - 2020

Accelerating innovation to improve
the health and wellbeing of our citizens



TABLE OF CONTENTS

Click the section title to jump to a section.
Click the arrows to move through the report.
Click the logo to return to the contents page.

Mission Statement	3
Foreword – from the Chair and Chief Executive	4
About Health Innovation Manchester	8
Health and Care Catalysts	11
Greater Manchester programmes	11
National AHSN Network programmes	15
Greater Manchester and Eastern Cheshire Patient Safety Collaborative	18
Digital Disrupters	22
Groundbreaking Researchers	26
Manchester Academic Health Science Centre (MAHSC)	26
NIHR Applied Research Collaboration Greater Manchester (ARC-GM)	33
Industry Partners	36
Patient and Public Involvement	43
Utilisation Management	45
Governance	50
Finance	53

OUR MISSION

We work with innovators to discover, develop and deploy new solutions that improve the health and wellbeing of Greater Manchester's 2.8 million citizens.

Our vision is to be a recognised international leader in accelerating innovation to improve the health and wellbeing of our 2.8 million citizens.

We are:

- Acclaimed Academics
- Health and Care Catalysts
- Digital Disruptors
- Groundbreaking Researchers
- Industry Partners

We are Health Innovation Manchester.



FOREWORD

FROM THE CHAIR AND CHIEF EXECUTIVE

Globally healthcare is facing key challenges including aging populations, unacceptable variation in outcomes, increasing burden of disease caused by lifestyle factors, escalating costs of delivery and increasing consumerisation and customer expectations from healthcare services. Innovation is required to address each of these challenges.

During 2019-2020, Health Innovation Manchester has continued to develop as an academic health science and innovation system. Over the last year we have consolidated our offer and operating model to ensure we accelerate the discovery of new value propositions and the deployment of proven innovation across the city region. And, informed by increasing evidence that health and wellness outcomes are significantly determined by factors outside those addressed by traditional healthcare services, we are beginning to explore more holistic innovation approaches.

Part of our work is to fulfil our commitment as part of the national AHSN Network and we are now performing within the top quartile, for both patient benefit and adoption and spread, against the suite of national innovation projects and industry engagement metrics. This includes programmes such as supporting patients with the medication support when leaving hospital, ensuring all mothers who go into pre-term labour are given a treatment to reduce their baby's risk of cerebral palsy and identifying and treating citizens with irregular heart rhythm. We have worked with our partners across the Greater Manchester system to embed the new practices and technologies to enable them to be sustainable and to continue delivering patient benefit or system improvements as we move on to our next innovation cycle and the phased rollout of the next set of national projects selected for adoption and spread across England by the AHSN Network.





In addition to delivering these national programmes of work, we are also working much more closely with the devolved structures and localities in GM to align our activities to addressing their problems, as well as supporting them in meeting the requirements set out in the NHS Long Term Plan and the refreshed GM Taking Charge prospectus. Key to this is the connectivity between HInM and our system partners across the city region, specifically the Provider Federation Board (which represents all the acute and mental health hospitals in GM), the Primary Care Board (representing GPs and wider primary care services) and the Joint Commissioning Board (representing integrated health and social care commissioning) along with the GM Health and Social Care Partnership and the Greater Manchester Combined Authority. These relationships are vital as we focus our innovation resources on the system's most important challenges.

Over the last 12 months we have continued to develop our Greater Manchester-based innovations and have improved our internal innovation pipeline management process, streamlining our work and ensuring innovations are focussed on system priorities, rigorously tested and proven before they are selected for adoption and spread. We have launched a series of accelerated projects, which will see five of key innovations selected by our system partners given significant resource and time to support their widespread adoption across the city region. These include projects to give better decision making at the point of care through integrated digital care records, improved diagnostic

accuracy for heart attack in emergency departments, digital transformation of the heart failure pathway, better care for patients with chronic obstructive pulmonary disease and a digital approach to decrease the risk of falls in care homes.

Our industry engagement programme has also been strengthened, from working with SMEs to grow and develop their value propositions through to developing strategic partnerships with global industry to cement Greater Manchester's position as a leading life sciences cluster. The landmark agreement with QIAGEN to develop a precision health campus in Manchester and bring fast-tracked health benefits to GM citizens and people across the world has already begun to make an impact with the creation of a new biomarker company developing new tests and targeted treatments and creating new jobs.

Our research expertise was also recognised nationally with the designation of the Manchester Academic Health Science Centre for a further five years, following a presentation to a panel of international experts in 2019-20, highlighting the excellent research and academic work taking place within Manchester and its connectivity with the needs of GM. Manchester was named one of eight AHSCs and one of only two in the North. We look forward to continuing this work through our research domains and partnerships with research-active NHS Trusts and the vast infrastructure across GM to address major challenges, discover innovations, advance translational research delivery into the frontline and secure further research funding.



We have also welcomed the NIHR Applied Research Collaboration Greater Manchester (ARC-GM) into our organisation, making us a truly integrated health science and innovation system with an AHSN, AHSC and ARC under one umbrella. The integration of the ARC into Health Innovation Manchester brings applied health research expertise, spanning discovery to deployment and evaluation, into the heart of our innovation system and is an important step in our evolution.

Running through all our work is the drive to harness the transformative power of digital technology to improve service delivery and bring real patient benefits and importantly understanding the total cost-benefit equation of these approaches. This has included supporting the development of the Greater Manchester Health and Care Digital Strategy.

As we were looking forward to 2020-2021, Health Innovation Manchester was planning to be more ambitious in our aims and

ensure rapid and sustained adoption of more proven innovations, aligned with local needs and priorities, to improve the health and wellbeing of our citizens. But then COVID-19 arrived and significantly changed the priorities of the GM healthcare system and altered the nature of the overarching governance.

We rapidly pivoted our activities from March 2020 into the first few months of the new financial year, ensuring that our research and innovation activities were directly related to the COVID response. All organisations have been, and will continue to be, re-crafted in response to the global pandemic, and of course HInM is no different. Whilst COVID-19 has really been the focus for the first few months of 2020/21 rather than the timescale covered by this document, we have included a summary of some of our activities and achievements in this report.

Key learnings during this year and the pandemic have been that becoming ever

closer to the needs of the system is key to delivering innovation at scale. Partnerships with industry are also at the heart of many of the things that we do, and digital now sits squarely at the centre of pretty much everything, to the extent where we now no longer consider it a strand of our activities, but a cross cutting capability informing and being informed by all of our endeavours.

Rowena Burns
Chair
Health Innovation Manchester

Professor Ben Bridgewater
Chief Executive Officer
Health Innovation Manchester

COVID-19 CORONAVIRUS

As we reached the end of 2019-2020 and completed our impact report, the COVID-19 coronavirus outbreak occurred.

We have pivoted our work and our resources to support the system response to the virus, including adapting many of our projects and launching new high-priority programmes.

Coordinating digital health and care activity: Supporting all health and care services to quickly change how they operate to offer a more digital-first service offer for patients.

Research: Scientists and clinicians across Greater Manchester have formed a research rapid response group to find ways to beat COVID-19, reduce the impact on GM and save lives.

Accelerating data sharing across GM: Accelerating the deployment of the GM Care Record and building in more functions that will support the COVID-19 response.

Digital primary care: We are working with our partners to support GP practices to implement a digital-first service and provide patients with digital access, triage and consultation.

Digital care homes: Providing care homes with greater access to technology, tools and patient information to ensure they are better equipped to protect and care for residents.

Mental health: Supporting GM through new digital mental health services to minimise the need for people to attend GP surgeries or hospital and identifying new products which could support the system.

Long term conditions management: Focusing on how digital applications and tools are developed and deployed to those with long term conditions.

Industry engagement: Working to identify and enable the implementation of technologies that respond to areas of highest priority action and working with the GM system to accelerate the deployment of selected industry innovations.

Supporting patient flow: The Utilisation Management Unit is supporting the urgent and emergency care COVID-19 coordination plans including understanding the flow and management of patients.

This work is continuing during 2020-2021 with our priority being to support our partner organisations, stakeholders and our staff during the unprecedented and challenging time.

We would also like to thank NHS staff, carers and other key workers for all they have done during the outbreak to keep Greater Manchester and the country going throughout.

Thank you also to our staff at Health Innovation Manchester and our partners for continuing to accelerate innovation despite the difficult and demanding situation.

ABOUT HEALTH INNOVATION MANCHESTER

Formed in
2017

One of 8
academic health science
centres (AHSC) designated
until 2025

One of 15

Academic Health Science
Networks (AHSN)
Only joined-up innovation
system featuring AHSC
AHSN and ARC

Home to



4 Universities

2.8m 
citizens live in
Greater Manchester



More than
100
partner
organisations

£6.6 billion

devolved health and social care budget since 2016 –
The NHS and councils are united to help people
to start well, live well and age well



5 Business aims

- 1 Ensure a constant innovation pipeline into health and social care.
- 2 Prioritise and monitor innovations that meet the needs of Greater Manchester.
- 3 Accelerate delivery of innovation into health, care and wellness.
- 4 Amplify existing academic and industry value propositions.
- 5 Influence national and international policy.

Diverse innovation portfolio

15 national innovation programmes

32 major GM innovation programmes



5 values

- | | | |
|---|------------------|-------------------------------------|
| 1 | Visionary | <input checked="" type="checkbox"/> |
| 2 | Citizen-focussed | <input checked="" type="checkbox"/> |
| 3 | Respect | <input checked="" type="checkbox"/> |
| 4 | Everyone Matters | <input checked="" type="checkbox"/> |
| 5 | Accountability | <input checked="" type="checkbox"/> |

As an academic health science and innovation system, Health Innovation Manchester is at the forefront of transforming the health and wellbeing of Greater Manchester's 2.8 million citizens.

Health Innovation Manchester (HInM) was formed in October 2017 by bringing together the former Greater Manchester academic health science network (GM AHSN) and Manchester academic health science centre (MAHSC) under a single umbrella.

In October 2019, the NIHR Applied Research Collaboration Greater Manchester (ARC-GM) also joined HInM, conducting pivotal research into new and better ways of promoting health, delivering care and supporting the economic sustainability of the system.

As the region's academic health science and innovation system, HInM also brings together the expertise from our NHS, social care, local government and industry partners as well as the academic and research experience from Greater Manchester's four universities, and research active Trusts and commissioners. Greater Manchester has a unique opportunity and ability to deliver innovation into frontline care at pace and scale thanks to our £6bn devolved health and social care system, exceptional digital assets and ambitions, world-class academic and research capability and thriving industry partnerships.

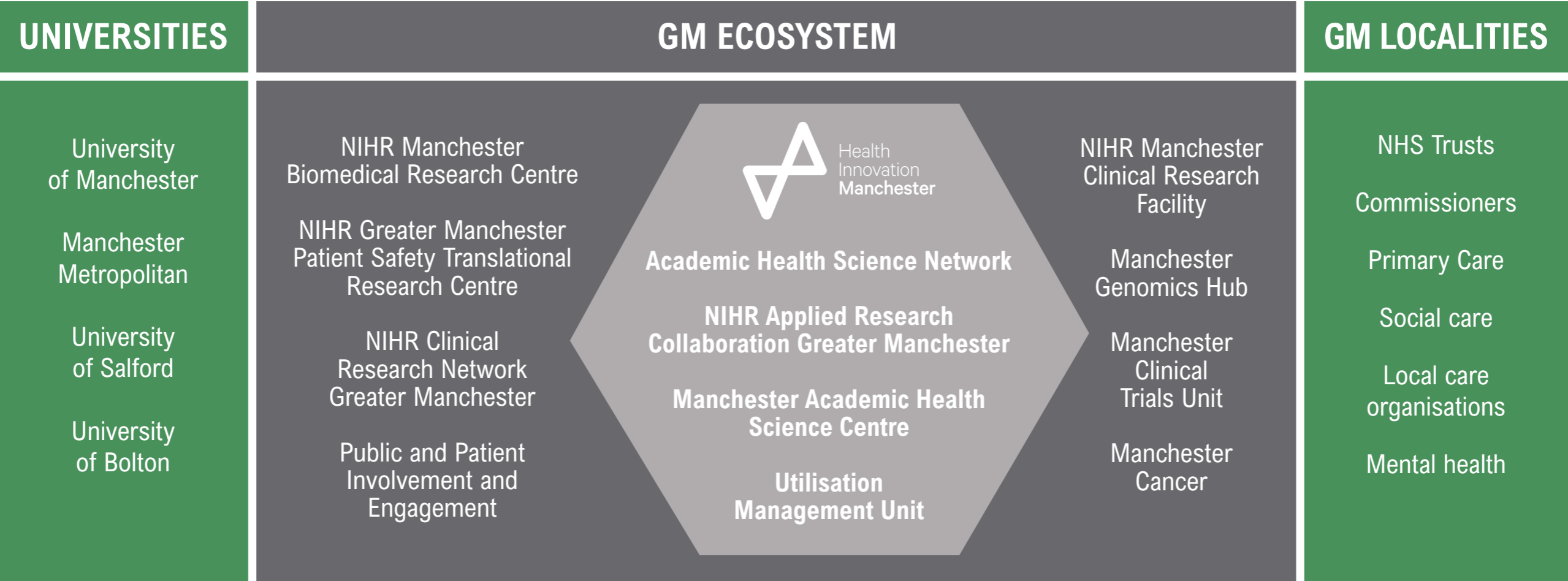
HInM works alongside the Greater Manchester Health and Social Care Partnership and Greater Manchester Combined Authority to improve services, support population health and unlock economic potential to create jobs, growth and prosperity. Our collective ambition is to make Greater Manchester one of the best places in the world to grow up, get on and grow old.

HInM has a pivotal role in bringing forward a constant flow of targeted innovations designed to address the needs of Greater Manchester's population and services and putting them through our pipeline process. New services, med-tech, medicine optimisation, digital solutions and innovative platforms are tested, developed and evaluated before we look to adopt and spread the best new solutions at pace and scale across the city-region.

We are Health Innovation Manchester.

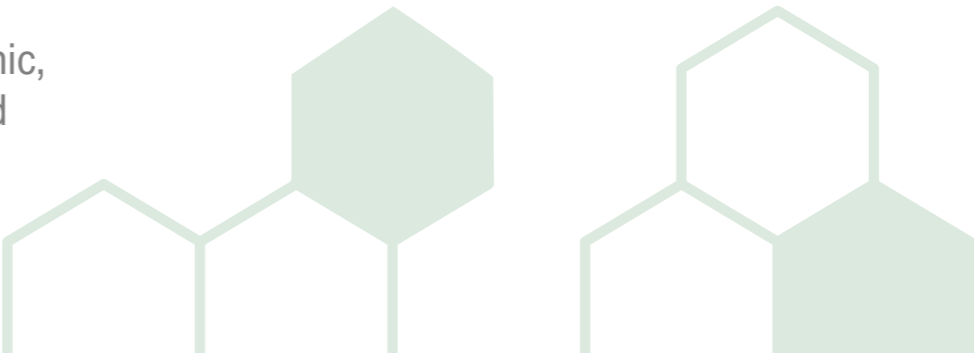


GREATER MANCHESTER'S INTEGRATED ACADEMIC HEALTH SCIENCE AND INNOVATION SYSTEM



Manchester is a leading international centre of excellence in education, research, healthcare, industry collaboration and the translation of cutting edge developments in science into care and treatment.

Health Innovation Manchester brings together the region's world leading academic, research and NHS ecosystem to work together and drive health research aligned to our local priorities, set out by regional commissioners.



HEALTH AND CARE CATALYSTS

GREATER MANCHESTER PROGRAMMES

From new technology, devices and digital products to pioneering services and optimising medicines, we have a wide range of active innovation projects that are being deployed across Greater Manchester to improve the health and wellbeing of our citizens.

Health Innovation Manchester is playing a leading role in identifying and developing innovations which can be deployed at scale to the city-region and aligned to key health priorities based on strategic drivers including the NHS Long Term Plan and the GM implementation plan, alongside the GM Local Industrial Strategy.



KEY IMPACTS:

408 innovative point of care
Hepatitis C tests

8,000 rapid acute coronary
or blood tests conducted

Now rolled out to five other
emergency departments

Number of delirium cases identified
at Salford Royal increased by 650
per year with **readmissions reduced
to 13%, saving £184,000**

6,000 licences for myCOPD
self-management tool secured

Our local innovations and highlights
from projects in flight during 2019-2020
include:

Eliminating Hepatitis C by 2025

An ambitious aim to eliminate Hepatitis C in Greater Manchester by 2025 through improved point of care testing and treatment, starting within the prison system. Point of care testing has been implemented at HMP Styal prison with 408 tests completed to date and the project has been nominated for a HSJ Value award. Deployment into HMP Forest Bank began in early 2020 to rapidly test for and curatively treat Hepatitis C. The programme helps to avoid poor personal and economic consequences if people are left undiagnosed and untreated.

Quicker tests to detect heart problems in A&E

T-MACS is a digital decision-aid which calculates each patient's probability of acute coronary syndrome following a single blood test at the time of arrival at the emergency department. 8,000 tests have been conducted at Manchester Royal Infirmary since 2016. HInM has supported adoption to six sites and all remaining others are in the pipeline. Various sites outside of GM are also adopting the approach, supporting more clinicians to make decisions about the right place of care at the right time.

Early Detection for Delirium

A digital assessment tool to quickly identify those with delirium and ensure they receive the best care when they arrive at hospital. After a successful introduction at Salford Royal NHS Foundation Trust as part of the Global Digital Exemplar (GDE), it is being rolled out at Wythenshawe and Royal Bolton Hospitals. Since the Salford project launched in 2017, the number of delirium cases identified has risen by 650 per year, an increase of 34%. Readmissions for delirium patients have reduced from 15% to 13%, saving an estimated £184,000 in the first year.

Enhanced COPD care pathway

Our COPD programme has included the deployment of 6,000 myCOPD self-management licences and continued deployment of the community virtual clinic model (90 complete by end of 19/20). We have also supported adoption and spread of the COPD discharge bundle, including self-management plans and inhaler demonstrations with the aim of improving care and reducing readmissions.

STRUGGLING TO BREATHE

For Don, even a short walk down the street to see friends can leave him struggling to breathe. Don, aged 73, was diagnosed with progressive lung disease Chronic Obstructive Pulmonary Disease (COPD) two years ago. The condition means he sometimes struggles to catch his breath and often has a cough.

Don, a former steel erector and cladder from Wythenshawe, said: “I never expected to get a condition like this. I had a very active job in the building trade and was often out in the fresh air. But I have to admit that I smoke and drank heavily.”

Don now relies on inhalers and medication to support his breathing, but he has been hospitalised several times following complications from COPD. “Sometimes no matter how hard you try to fill up your lungs you can’t get your breath. And then the anxiety starts and makes it worse,” he said. “I also have to be careful with the climate as it can make it harder to breathe and the COPD can step in.”

Don added that he feels very supported by the organisations helping him to manage his COPD and believes that everyone should have support available as soon as they are diagnosed. He also thinks it would have helped his wife Carole, who sadly died in 2012 at the age of 67 after her COPD steadily worsened.

Don, who was married to Carole for 46 years, said: “We didn’t know much about COPD when Carole was diagnosed but it would have been better if she’d had more support when she was diagnosed.”



Watch Don's story

Our COPD Project

HInM is working to improve the care and treatment for the 67,000 people living with COPD in GM. Our work includes ensuring clinicians have the knowledge and skills to care for patients with COPD through virtual clinics and empowering patients to better self-manage their condition with confidence through support, learning and digital apps.



SPOTTING THE EARLY SIGNS OF DELIRIUM

Liz and Mike Brookes, from Rochdale, experienced first-hand the impact that a quick diagnosis of delirium can have on recovery. Mike, who lives with vascular dementia, experienced an episode of delirium after rupturing his gall bladder.

His wife Liz, a retired nurse, said: “I was telling people constantly that he was delirious, because it was clear to me that the mental state he was experiencing at that time was very different to how he is normally at home. But all people saw on the ward was his dementia.”

However, when Mike (77), a retired Electronics Officer in the Royal Air Force, experienced another episode of delirium while in Salford in September 2019, he was quickly diagnosed and treated thanks to the delirium early detection tool in use at Salford Royal.

Liz (64) continued: “No sooner than we arrived at Salford Royal’s A&E, the staff were on us. They looked at his age, his dementia diagnosis and the fact that he had experienced a previous episode of delirium and they assessed him for delirium. They took it all on board and he was diagnosed and treated straight away. I sat with him for four hours watching him improve dramatically.”

Mike spent four days in hospital before he was able to return home. “The delirium didn’t progress, and he came home quickly and without any impact on his cognition,” Liz continued. “The assessment and quick treatment were excellent.”



Watch Liz and Mike’s story

A digital assessment tool to quickly identify those with delirium and ensure they receive the best care when they arrive at hospital is being rolled out by HInM in Bolton and Wythenshawe after a successful introduction at Salford Royal NHS Foundation Trust.

Since the Salford project launched in 2017, the number of delirium cases identified has risen by 650 per year, an increase of 34%. Readmissions for delirium patients have reduced from 15% to 13%, **saving an estimated £184,000 in the first year.**

NATIONAL AHSN NETWORK PROGRAMMES

As an Academic Health Science Network (AHSN), Health Innovation Manchester is part of the National AHSN Network and linked into a unique collaborative of expertise and experience, shared learning, pooled intelligence, and a pipeline of emerging and proven solutions from around the country.

Through this national network, HInM is tasked with the adoption and spread of nationally-selected innovations within Greater Manchester and East Cheshire. During 2019-2020, and after two years of adoption and spread throughout our region, some of these nationally-mandated programmes have reached a conclusion, including preventing cerebral palsy in pre-term babies and detecting irregular heart rhythms. We have supported the health and care system to ensure the programmes are embedded and can sustainably continue to ensure the benefits continue within

the NHS. In the coming year we will be moving on to new programmes involving cardiovascular disease and mental health during a phased roll-out approach.

Accelerated Access Collaborative
Health Innovation Manchester is also part of the Accelerated Access Collaborative, a unique partnership between patient groups, government bodies, industry and NHS bodies, including AHSNs, working together to streamline the adoption of new innovations in healthcare. These include rapid uptake products such as UroLift and HeartFlow as well as Innovation Technology Payment products. Innovations include: Placental growth factor based testing to help diagnose suspected pre-eclampsia and High-sensitivity troponin testing to improve early detection of acute heart attacks.



ESCAPE-PAIN CLASS TRANSFORMS LIFE OF ARTHRITIS SUFFERER

Pauline Church was at an all-time low and was unable to live the life that she wanted because of her arthritis. Her constant pain made her unable to manage at home, and she believed she would have to consider full-time residential care. However, after her daughter showed her a leaflet for an ESCAPE-pain course run by Everybody Sport and Recreation Charity and supported by Health Innovation Manchester, she decided to give the classes a go.

Pauline (77) completed the course, which includes an exercise programme and tailored pain-management support, and said her life was transformed. The former nurse and charity worker said: “My pain reduced, I’m no longer reliant on my walking stick and I can walk upstairs unaided. I’m delighted with the way I feel. I’m mended.”

Her inspirational story saw her win the Customer Hero at the Everybody Leisure awards in October 2019 and she is now sharing her story at other ESCAPE-pain classes and encourages people to take part in the course.

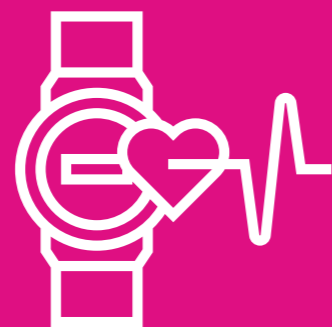


[Read Pauline's story](#)

NATIONAL PROGRAMMES

Atrial Fibrillation

Increasing the detection of irregular heart rhythm Atrial Fibrillation (AF) and optimising the use of anticoagulants of those diagnosed with AF to prevent strokes and save lives. HInM has distributed over 200 med-tech devices to support detection.



Target: 2,400 previously unknown patients diagnosed with AF
Achieved: 3,700 (2018/2019)



Emergency Laparotomy Collaborative

Improving standards of care for patients undergoing emergency laparotomy surgery.

Target: 100% sites adopting standards
Achieved: 100% sites, 898 emergency laparotomies Q3

ESCAPE-pain

A group rehabilitation programme for people with knee and/or hip osteoarthritis, providing self-management support in the community.



Target: 528 people take part in ESCAPE-pain programme
Achieved: 376

Transfers of Care Around Medicines (TCAM)

Patients requiring additional support taking prescribed medicines when they leave hospital are identified and offered an appointment with a community pharmacy or GP pharmacist.



Target: 430 patient medication reviews
Achieved: 2,040

Preventing Cerebral Palsy in PreTerm Labour (PReCePT)

Working with maternity units to increase the use of magnesium sulphate to protect the baby's brain and prevent cerebral palsy in preterm labour.



Target: 85% of eligible preterm mothers receive treatment
Achieved: 79% 18 cases of cerebral palsy prevented since 2016

PINCER/SMASH

Using digital tools to support pharmacists and GPs to identify patients at risk from their medications and take the right action.

Target: 309 locations active
Achieved: 132

Serenity Integrated Mentoring (SIM)

Multi-agency, integrated mental health crisis intervention teams supporting high intensity service users.



Target: 20 users
Achieved: 109 users

GREATER MANCHESTER AND EASTERN CHESHIRE PATIENT SAFETY COLLABORATIVE

The National Patient Safety Improvement Programme is led by the NHS England and NHS Improvement national patient safety team. It is delivered regionally by the 15 Patient Safety Collaboratives, including Greater Manchester and Eastern Cheshire Patient Safety Collaborative, and is the largest safety improvement initiative in the history of the NHS.

The PSC team within Health Innovation Manchester supports, connects and provides initiatives and activities to drive improvement and ensure patient safety is embedded throughout the Greater Manchester and Eastern Cheshire health and social care community. During 2019-2020, the team have focused on implementing key workstreams and projects with staff in hospitals, community settings, primary care and care homes.



Greater Manchester &
Eastern Cheshire

Patient
Safety
Collaborative

Early recognition and response to physical deterioration



Improve recognition and response to deterioration in all care settings and support the adoption of national early warning score NEWS2.

8 Trusts implementing NEWS2

Improving maternal and neonatal safety

Working to improve the safety, outcomes and experiences of women and babies using maternal and neonatal care services.

250 additional smoke-free babies born

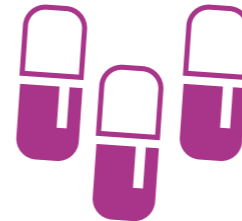
in the first year of implementation in Greater Manchester.

Reduction in smoking at time of delivery from **13% (2017) to 10.8%** (2020) across Greater Manchester and Eastern Cheshire.



Medicines Safety

Improve the safety of medication administration primarily in care homes, reducing avoidable harm and improving experience of care.



Co-produced and implemented a co-ordinated, structured engagement phase with

1,102 care homes across England equating to **43,500** care home beds.



Locally, engagement was undertaken with **56 care homes** across GMEC, covering over **2,390 care home beds**. The insights gathered will help inform the next phase of the programme.

Accelerating the adoption and spread

of evidence-based practice in maternity, respiratory and emergency departments.

7 Trusts

implementing emergency department patient safety checklist with tasks to complete for each new arrival **increase of 16%**.



6 Trusts actively engaged

in rolling out COPD Discharge Bundle to improve care and reduce hospital readmissions through patient education and support.



MIDWIFE CHAMPIONS EMPOWERED TO PREVENT CEREBRAL PALSY IN PRETERM BABIES

Midwife Champion Treena Wild has been ensuring that women in preterm labour at the Royal Oldham Hospital are given the opportunity to receive magnesium sulphate and protect their baby's brain from Cerebral Palsy.

Treena decided to become a midwife champion for the preventing cerebral palsy in preterm babies (PReCePT) programme after attending a learning event with Health Innovation Manchester and hearing about the benefits of delivering the treatment to women in preterm labour. Use of magnesium sulphate in preterm labour reduces the risk of cerebral palsy by 30% and costs just £1 per dose.

She said: "Our neonatal unit cares for some of the most vulnerable and preterm babies in the North West. After hearing about the benefits, I wanted to take the lead in our hospital and lead in looking at ways to implement PReCePT on our unit and educate others."

With the support of Health Innovation Manchester and the Patient Safety Collaborative, Treena and her colleagues began implementing the programme and introduced "grab bags" at the unit, with all the required equipment to enable midwives to be able to deliver the magnesium sulphate promptly and without any delay.

She added that they have also educated women and families about the programme. "Women are often key in receiving care and if they know about something they're more likely to ask," she said. "We've displayed large posters and have information leaflets ready to explain magnesium sulphate for neuroprotection and its benefits."



Watch Treena and other midwife champions explain their role in implementing PReCePT

18 cases of cerebral palsy prevented

since 2016 in Greater Manchester and East Cheshire.

CASE STUDY

250 SMOKE FREE BABIES BORN IN GREATER MANCHESTER

The PSC team have supported the Greater Manchester Health and Social Care Partnership on the Greater Manchester Smokefree Pregnancy Programme.

Official figures show that, whilst across the country the percentage of women smoking at the time of delivery was the same as last year, in Greater Manchester this had fallen. The decline in smoking during pregnancy has contributed to overall smoking rates across the city region falling twice as fast as the national average, to a record low of 16.2%.

Expectant parents engaged in the Smokefree Pregnancy programme, which has been introduced across the city region, are tested for carbon monoxide levels early in their pregnancy. This allows maternity staff to identify smokers and educate them

on the potential harm being done to their unborn child. Pregnant smokers are then provided with specialist support to help them quit, including free nicotine replacement therapy to help them deal with cravings. The Smokefree Pregnancy Programme has trained midwives and midwifery support workers to help expectant smokers.

Michelle from Bolton, who quit smoking with support from a specialist Maternity Support Worker at Ingleside Birth Centre, said: "I found the scheme very helpful, particularly having someone call round once a week to read my carbon monoxide levels. This gave me great motivation to stick with it. I have recommended it to everyone I know as I feel the support has been a massive help in me quitting smoking for good and not just though my pregnancy."

DIGITAL DISRUPTERS

Key data

- First HInM thought leadership event held **8 leaders** debate and discuss **digital health**
- **17 new jobs created** through companies on the GM Digital Health Accelerator Programme
- **500 patients** with pacemakers involved with Smart Hearts digital heart failure project
- **Enhanced GM Care Record**
- **Five North West companies selected** for the Digital North Accelerator
- **Four AHSNs joined together** for Digital North Accelerator

Digital technology is transforming our lives in Greater Manchester and beyond every day, supporting us to do things more quickly and easily. We now live in a world where technology is part of our daily lives, from paying bills, to online shopping, to keeping up with news – the way we do things has been completely transformed because of digital technology.

We are bringing this level of digital disruption into our public services to give patients and the public greater control over their own health and wellbeing and transform services to better meet the needs of citizens.

Through our partnership with Greater Manchester Health and Social Care Partnership (GMHSCP) and the Greater Manchester Combined Authority (GMCA), the NHS, councils and other public bodies across Greater Manchester are now working together to invest in new technologies. We're also working to unlock, integrate and share data that is held in many different systems across health, care and the wider public sector to help transform public services.

This year we have also supported the development of the Greater Manchester Digital Strategy and have appointed Guy Lucchi as our Digital Innovation Director. We also held the first of our roundtable thought leadership discussions with leaders from across health, care and industry, to debate digital health.

KEY DIGITAL PROJECTS TAKING PLACE INCLUDE:

The GM Care Record

It is imperative that clinicians and care professionals can access vital patient information to provide the best possible care and support. Greater Manchester has already invested in technology to support the sharing of patient information through Graphnet's CareCentric product. However, this vital patient data was confined within each locality of Greater Manchester with limited sharing of the data beyond locality boundaries.

Working with the GMHSCP, Graphnet and each locality of Greater Manchester, Health Innovation Manchester is leading the work to make the most of this digital resource and enhance data sharing beyond locality boundaries and across Greater Manchester.

Through rapidly accelerating the technical development and addressing the information governance issues that had been previously blocking data sharing, health and care professionals across the city-region are now able access information held within GP, hospital, mental health and social care records at the point of care via the GM Care Record.

The GM Care Record supports clinical decision making by providing access to important information on medications, test results,

allergies, care plans and social care support. This promotes enhanced quality of care and safety, avoids duplication and supports coordinated care planning across settings and geographies.

This acceleration is a major step forward in ensuring our patients are provided with the best possible care based on the most accurate and up to date information.

GM Digital Health Accelerator Programme

Completed in 2019, we supported four digital start ups across 12 months to enable these companies to engage clinical and healthcare expertise and NHS procurement support, as well as gain a better understanding of the health system and its needs, develop their business models, and refine their propositions. During the programme 17 new jobs were created, 7 new contracts were secured and £30,000 of new research funding was leveraged.

Digital North Accelerator

Health Innovation Manchester has joined with the other three Northern AHSNs, Yorkshire & Humber, Innovation Agency and North East and North Cumbria to launch the Digital North Accelerator Programme. It will deliver a range of supporting activity to facilitate adoption and spread of innovations for five companies from across the north of England. These companies are: IEG4, Doc Abode, Bruin Biometrics, Zilico and Cievert.

GM leaders and experts debate how digital can support healthcare transformation and improve outcomes

Leaders from across health, care and industry, gathered to debate digital health as part of Health Innovation Manchester's first event in the roundtable thought leadership series. A range of topics including how digital can be used to transform models of care, how to place patient experience at the heart of digital innovation and collaboration across the system were discussed.

Professor Ben Bridgewater, Chief Executive of Health Innovation Manchester, said: "We wanted to host the digital roundtable event to gather insights from across different stakeholders and debate the challenges and opportunities digital innovation presents for healthcare. We had a very stimulating debate which highlighted the need to place the patient experience at the heart of our digital work and the need to collaborate for a co-creation approach."



[Watch the full roundtable discussion](#)

THE SAFETY MEDICATION DASHBOARD (SMASH): PREVENTING HARM FROM MEDICATION

Health Innovation Manchester is piloting a new technology called the SMASH dashboard, developed by The University of Manchester and the NIHR Greater Manchester Patient Safety Translational Research Centre (PSTRC), to reduce medication errors in primary care. The technology uses shared care records to identify patients who are linked to one or more medication indicators that could put them at risk of harm. The data is used to send a report to GPs and pharmacists to identify patients who would benefit from a review by a trained pharmacist.

Chris Haigh, Lead Pharmacist, Medicines Optimisation at Health Innovation Manchester, is part of the team working to implement the SMASH dashboard across

the city-region and understands why the technology would make a difference in Greater Manchester. He said: “I would often see patients admitted with conditions caused by medicines they were prescribed such as kidney damage or gastric ulcers. In most cases these admissions would have been preventable, if only the medications had been reviewed or stopped earlier.

“I remember one patient who was identified through the SMASH dashboard as at risk of kidney injury and was scared to leave the house due to dizziness related to their medication. After several appointments and some changes to his medicines, he told me how he was “getting his life back” as he felt more confident in leaving the house.”

Salford is the first locality in Greater Manchester to deploy the dashboard in 43 GP Practices. This has led to a major reduction in patients who were at risk from potentially hazardous prescribing, as well as Salford having the lowest rate of patients in the gastrointestinal bleeds indicator group in England. It is expected to be rolled out across the rest of Greater Manchester by the end of 2020.



SMART HEARTS

Around 25,000 people in GM have diagnosed heart failure - just under 1% of the GM population – with over 4,300 admissions in GM in 2015/16 with a primary diagnosis of heart failure, costing £17m to GM’s healthcare economy. There is emerging evidence that many of these admissions can be avoided to deliver benefits to patients and to the healthcare economy.

Around 2,500 patients in GM have implantable devices (pacemakers or defibrillators) which already transmit data in to the cloud. HInM’s industry, academic and health and care partners are using an algorithm to detect early deterioration in heart health from data flows from approximately 500 of these patients and their devices. These insights flow in near real time into a new operating model for identifying heart failure earlier and for treating heart failure from home before the need for hospitalisation is reached.

Real world evidence and artificial intelligence (AI) is also being used to look for missed opportunities for implantable devices (for both therapeutic and diagnostic purposes) and to accelerate the deployment of devices to a wider population suitable for these treatments.

The project commenced in February 2019 and is demonstrating that data from the devices can be used to create actionable insights including:

- Modifying the pathway to identify “at risk” patients more quickly with more patients benefitting from earlier interventions
- Increased the number of actionable alerts from devices by 60%
- Identified that approximately 70% of alerts generated have a treatable medical issue including half of these having an issue beyond heart failure
- Detected undiagnosed heart failure in the community setting and routed to heart failure services

Dr. Fozia Ahmed, Consultant Cardiologist at Manchester University NHS Foundation Trust, leads the clinical side of the project. She said: “What we’re doing in Greater Manchester is pushing the boundaries. By focusing on the people, process and cultural changes, we are realising that we can optimise pathways and get treatment to the front-line faster. Digital is playing a huge part in this ambition. This work has allowed us to experiment, by disrupting pathways and thinking in a controlled way, and instigating changes which are having an immediate positive impact on patients and staff.”



Watch Dr Ahmed talk about the project

GROUNDBREAKING RESEARCHERS

Manchester is a leading international centre of excellence in education, research, healthcare, patient care, industry collaboration and the translation of cutting-edge developments in science into care and treatment.

MANCHESTER ACADEMIC HEALTH SCIENCE CENTRE

The exceptional health research, education and clinical care taking place within Greater Manchester was once again recognised as the Manchester Academic Health Science Centre (MAHSC), part of Health Innovation Manchester, was formally designated by National Institute for Health Research (NIHR), NHS England and NHS Improvement in 2020 for a further five years.

MAHSC brings together our world leading academic and NHS partners to drive health research, improve health education and transform patient care. Manchester is now one of only eight academic health science centres (AHSCs) in England – and one of

only two in the North. The successful designation demonstrates how Greater Manchester is creating one of the most advanced integrated systems in the UK for aligning academic research with local health needs to expedite the translation of discoveries into deployment at pace and scale.

Membership of MAHSC includes Manchester University NHS Foundation Trust, The Christie NHS Foundation Trust, Salford Royal NHS Foundation Trust, Greater Manchester Mental Health NHS Foundation Trust and The University of Manchester. We also work in close collaboration with Manchester's thriving scientific community and research infrastructure and Greater Manchester's other higher education institutions.

The MAHSC discovery and translation strategy is delivered by six domains, each led jointly by an academic and an NHS clinician and chaired by a CEO from our partner Trusts. Domains provide expert horizon scanning and strategic oversight that enable disruptive innovations to be tested, prioritised and presented to our Joint Commissioning and Provider Federation Boards to sign off their delivery to all GM patients.

KEY IMPACTS:

.....
One of only 8 Academic Health Science Centres

.....
6 MAHSC Research Domains

.....
£870 million Research Funding awarded to MAHSC partners since 2014

.....
25% increase in MAHSC research publications.

.....
10 new MAHSC Chairs appointed



More than 60 distinguished individuals have also been named as honorary MAHSC Chairs, with 10 new appointments in 2019-2020. These individuals from NHS and academia act as ambassadors for our academic health science system.

MAHSC DOMAINS

Cancer

Aims to support transformational change in cancer-related life sciences in order to provide outstanding healthcare, including prevention and early detection of cancer, identifying new targets and developing new treatments, delivering personalised cancer care to all.

Cardiovascular and Diabetes

Aims to eliminate the serious inequalities in cardiovascular-related outcomes that affect the Greater Manchester population. This includes supporting initiatives to better predict and prevent disease, find new diagnostic tests and therapies, and provide integrated and personalised care.



Inflammation and Repair

Including dermatology, musculoskeletal, respiratory, gastroenterology, infection, orthopaedics, trauma, renal, and regenerative medicine. The domain focuses on predicting treatment outcomes, personalising treatment, prevention and early detection.

Mental Health

Priorities based around dementia, self-harm, digital mental health. The aims include the development of a Brain Health Centre where people at risk of dementia will be invited to attend for an assessment.

Neuroscience

Focussing on local initiatives starting with a nurse-led Migraine Clinic, BRC capacity building, cross-domain and cross-university collaborative working groups.

Women and Children

Incorporates the clinical specialities of paediatrics, obstetrics, gynaecology and genomics, linking the core specialties that are relevant to promote improvements in health from birth to old age. Aims include conducting life course studies, developing genomics, and the formation of a pelvic floor mesh centre.





KEY RESEARCH PROJECTS

Rainbow Clinic (Women and Children)

A specialist service for women and their families during a subsequent pregnancy following a stillbirth or perinatal death, which is being rolled out to all nine maternity sites in Greater Manchester. It has also received interest from national and international organisations looking to adopt the specialist clinic model. It has so far supported 750 families, reduced the stillbirth rate by 34% and for every £1 invested, the Rainbow Clinic generates £6.10 of value, particularly by improving the psychological wellbeing of women and their families.

The Psoriasis Rapid Access Clinic (Inflammation and Repair)

Focuses on proactive psoriasis care, rapid personalised treatment and educating patients to empower them to take charge of their own condition. It has now recruited 40 participants for the trial. The first patient group have received their final six-month reviews, with some positive results recorded.

Lung health checks (Cancer)

Pioneering targeted therapies for non-small cell lung cancer and small-cell lung cancer which improved survival and changed practice. Manchester Lung Health Check (LHC) used low dose CT-scanning in shopping centre car parks, targeting higher risk individuals from deprived communities. A study of 1,232 participants identified one in 33 as having lung cancer; 80% early stage and with 90% offered curative treatment. LHCs are included in the NHS Long Term plan and NHS England is expanding this programme to 10 additional sites as a step towards a national screening programme.

ABC bundle for intracerebral haemorrhage (ICH) (Cardiovascular and Neuroscience)

A project where guideline-recommended interventions (rapid anticoagulant reversing, intensive blood pressure lowering and a care pathway for prompt neurosurgical referral) was scaled-up in Greater Manchester after implementation at Salford Royal reduced 30-day deaths by one-third. From August 2020 the ABC bundle will be introduced across the north of England.

RESEARCH PARTNERSHIPS ACROSS MANCHESTER



Greater Manchester is home to a thriving research infrastructure, including one of the largest research National Institute for Health Research (NIHR) portfolios in England.

NIHR Clinical Research Network Greater Manchester

The NIHR CRN GM supports the delivery of health research across Greater Manchester, East Cheshire and East Lancashire. Working with 14 NHS Trusts; 11 Clinical Commissioning Groups; more than 500 GP practices and almost three million people in delivering research which improves patients' health and NHS services.

(CRN GM) reported that a total of 47,637 people participated in 980 studies carried out across the region in 2019/20.

NIHR Manchester Biomedical Research Centre

The Manchester BRC connects world-leading researchers based at The University of Manchester and

three NHS Trusts in Greater Manchester, to drive health improvements and lasting change for all through creative, inclusive and proactive research that identifies and bridges gaps between new discoveries and individualised care.

Working in the research areas of cancer, inflammation, and regenerative medicine, Manchester BRC aims to transform scientific breakthroughs into life-saving treatments and care for patients.

NIHR Manchester Clinical Research Facility

The Manchester CRF comprises four dedicated and purpose-built clinical research facility brings world-class research and experimental medicines to our patients.

The units at The Christie NHS Foundation Trust, Manchester Royal Infirmary, Royal Manchester Children's Hospital and Wythenshawe Hospital provide dedicated space and a safe, quality assured environment for delivering clinical research studies supporting adult and children's studies across a diverse range of clinical areas.

NIHR Greater Manchester Patient Safety Translational Research Centre

The NIHR Greater Manchester Patient Safety Translational Research Centre works with a range of healthcare organisations, the NHS, local authority and industry partners to put new interventions into practice in routine health and social care settings, which ensures that our early translational research; developing and testing new ideas and approaches to patient safety, has regional and national impact.

The PSTRC launched the AMPLIPHY pilot at 10 branches of Lloyds Pharmacy in GM in December 2019 to support 100 people with their mental health by providing personalised pharmacist-led for people with newly-prescribed medicine.

NIHR Applied Research Collaboration Greater Manchester

The NIHR ARC Greater Manchester 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.



ARC-GM is part of Health Innovation Manchester. Its research activity is pivotal in finding new and better ways of preventing illness and delivering care, ensuring that Greater Manchester continues to be at the leading edge of health innovation, care and treatment. Find out more about the NIHR ARC on page 31 of this report.

NIHR School for Primary Care Research

The NIHR School for Primary Care Research is a partnership between nine leading academic centres for primary care research in England. The main aims are to increase the evidence base for primary care practice through high quality research and strategic leadership, and to build capacity in primary care with a well established training programme.

NIHR School for Social Care Research

The NIHR School for Social Care Research is a partnership between seven leading universities in adult social care research in England. The mission to be to develop the evidence base to inform and improve adult social care practice.

Manchester Clinical Trials Unit

The Manchester Clinical Trials Unit collaborates and conducts high-quality clinical research that leads to individual and societal benefit. The team have expertise in the design, management, analysis and delivery of multi-centre trials. These studies influence positive developments in clinical practice. Manchester CTU is registered by the UK Clinical Research Collaboration and receives funding from NIHR, CRUK, The University of Manchester and Health Innovation Manchester.

It is currently managing a portfolio of 39 trials, totalling £18m of grant funding.

Manchester Experimental Cancer Medicine Centre

Manchester ECMC is leading the way in cancer research with an unwavering focus on offering the best treatment options to patients through precision medicine. It takes into consideration the complex genetics and evolution of cancer and how this affects the way in which an individual responds to treatments. This is done through a renewed concentration on molecular profiling, biobanking, imaging, biomarker discovery and radiotherapy related research; as well as a focus on prevention and early detection.

MENTAL HEALTH RESEARCH PROJECT LISTENING EXERCISE

In Greater Manchester, we have a higher number of people who are in contact with mental health services than most other parts of the country. Yet, perceptions remain that research into mental health has not always focused on the issues that are relevant or important to local people. The leading academic and healthcare organisations are keen to change this.

Health Innovation Manchester, via the MAHSC Mental Health Domain, and the Greater Manchester Health and Social Care Partnership, are working together to better align the research priorities with the needs of the Greater Manchester population. As part of this work we consulted a wide range of stakeholders including Greater Manchester communities to help inform priority areas for future mental health research.

We received 415 responses to an online survey, held a focus group with 16 experts and embarked on community engagement with 16 community groups.

Findings from the listening exercise include; the need to move towards a more personalised approach to mental health incorporating social as well as medical interventions; further research into how social issues impact mental health; improving access to mental health research; and a need for a proactive, preventative approach to mental health. These findings will now feed into the work of the MAHSC Mental Health Domain and work across Greater Manchester.



DECIDE™ DERMATOLOGY EDUCATION PROGRAMME

A new education programme is supporting GPs in Greater Manchester to help diagnose skin conditions within the practice, reducing the need to refer as many patients for an urgent specialist dermatology assessment.

Demand on specialist dermatology services in the city-region is high, yet around a quarter of urgent referrals to dermatology services for lesions where cancer is suspected, result in being for conditions such as benign moles or a non-cancerous skin lesion.

Health Innovation Manchester has supported the roll out of the DECIDE™ Education Programme, led by Dr Mini Singh from The University of Manchester. DECIDE™ is an educational CPD programme that upskills clinicians in decision-making abilities around diagnosis and management of skin lesions.

GPs attend a one-day workshop and complete online learning to develop their decision-making skills and learn how to use a dermatoscope - handheld devices that magnify the skin multiple times and use light to allow them to see colour and structures in the skin that are not visible to the naked eye. This helps the GP to observe and diagnose some skin lesions, preventing a referral to specialist services in many cases. Where a specialist opinion is needed, the GP can refer the patient to dermatology for an urgent assessment.

Wendy Craven, Clinical Lead at NHS Bury Clinical Commissioning Group (CCG), said: “The introduction of the education programme and dermatoscopes into Bury GP practices has been well received by our clinicians, bringing an additional skillset to primary care. Many patients are now diagnosed within the practice and therefore don’t have the worry of waiting two weeks to be seen

by a specialist, freeing up dermatology services for patients that do need to be assessed by a skin specialist urgently.”

Dr Wissam El-Jouzi, a GP in Bury took part in the DECIDE™ training and says it made him feel more confident in diagnosing and managing dermatology conditions.

He said: “The event and training was very well set out and extremely useful. There were very useful lectures and topics very relevant to primary care. The workshops on practical use of the dermatoscopes really tied it all together and gave me confidence to start using the scope immediately.

“I feel more confident in diagnosing and managing dermatology conditions. I am more confident in knowing which lesions need to be referred and which can be safely managed in primary care.”

NIHR APPLIED RESEARCH COLLABORATION GREATER MANCHESTER (NIHR ARC-GM)

NIHR Applied Research Collaborations (NIHR ARCs) undertake applied health and care research that responds to, and meets, the needs of local populations and local health and care systems.

The NIHR ARC Greater Manchester became a core component of HInM in October 2019, integrating with HInM's academic health science network (AHSN) and academic health science centre (AHSC). The NIHR ARC-GM is one of 15 ARCs across England, part of a £135 million investment by the NIHR to improve health and care. It is the only example of an AHSN, AHSC and NIHR ARC operating as one integrated system.

Our NIHR ARC-GM is doing research to find new and better ways of promoting health, delivering care and strengthening the economic sustainability of the health and care system. The ARC is also working with HInM to develop our approaches to evaluation and to ensure deployment at scale is informed by implementation science.

- **One of 15** NIHR ARCs across England
- **Part of a £135 Million investment** by the NIHR
- **Co-funded** by partner organisations in GM
- **Formed in October 2019**
- **Five years** of applied research
- **5 core** research themes
- **2 cross cutting** themes
- **Only ARC** to operate together with AHSN and AHSC in **one integrated system**

The NIHR ARC-GM is doing excellent research to address key challenges for health and care in GM, whilst supporting our people and our organisations to translate research evidence into practice. The ARC is co-producing research with our GM partners to ensure we address the right questions and together produce answers that are useful, locally relevant and influence policy and practice in GM and beyond.

Our ARC-GM Public and Community Involvement and Engagement (PCIE) is part of the HInM-led, “One Manchester” approach to patient and public involvement and engagement. Our diverse PCIE panel reflects our GM communities as we strive for meaningful co-production of research and implementation.

NIHR ARC-GM is committed to building capacity to do, use and apply research. We are supporting people in our partner organisations to develop research and implementation skills and build successful clinical academic careers. We are providing learning opportunities through funded PhDs, Pre-Doctoral Fellowships, internships and short-courses.



The NIHR ARC-GM has five core research themes:

Our Digital Health theme aims to foster evidence-based digital innovation, better understand the factors that support deployment of digital health and care technologies and increase GM-research capacity in digital transformation of health and care services.

Key work includes evaluation of the roll-out of: The SMASH digital dashboard to reduce medication errors in primary care; Patient Automated Triage and Clinical Hub Scheduling (PATCHS); and further research into the Remote Monitoring in Rheumatoid Arthritis (REMORA).

Our Economic Sustainability theme

aims to describe the factors which affect people's health and use of health and care services and the optimal ways these services should respond to promote economic sustainability.

Key work includes: Economic aspects of the links between health and social care, particularly in care homes and the community, including social prescribing; Determining the best ways of allocating health and social care funding to ensure the best outcomes.

The Healthy Ageing theme works closely with the GMCA Ageing Hub Ageing in Place Programme and seeks to understand how we can help older people live healthy, happy and socially connected lives for longer.

Key work includes: Developing evidence of what works to reduce risk of poor health and wellbeing, reduce morbidity and frailty for those approaching later life between 50-69 years in Greater Manchester; Promoting health at work in later life; Addressing the health effects of social isolation.

Our Mental Health theme is developing, evaluating and implementing new initiatives to protect, sustain and improve mental health and resilience in local communities, marginalised populations and patient groups.

Key work includes: Training service users in research; exploring the physical health effects of the admission of young people to Child and Adolescent Mental Health facilities, and deepening our understanding of parity of esteem between physical and mental health.

Our Organising Care theme aims to inform the planning and delivery of health and care services which are effective, efficient and equitable.

Key work includes: The development of a tool to map the primary care workforce; an evaluation of a hospital-based independent domestic abuse service and the evaluation of digital innovations in care homes.

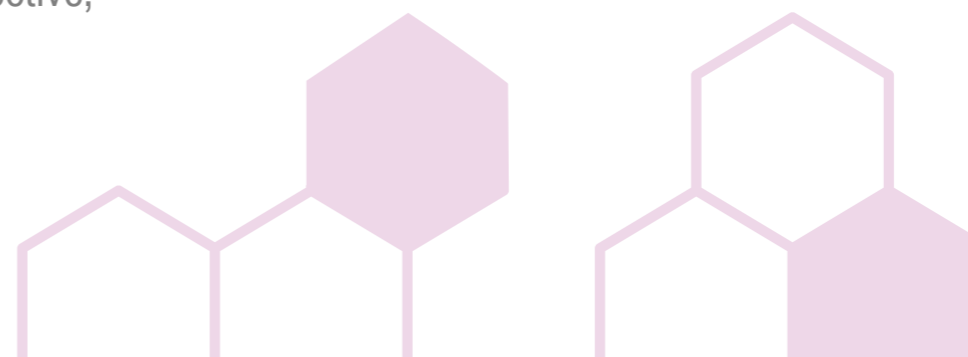
And two cross-cutting themes:

Our Evaluation theme works across all our themes to help ensure we use rigorous approaches to evaluation. We have a particular commitment to ensuring all our ARC research involves populations with the most need and we work closely with HInM to support evaluation in the innovation pipeline.

Key work includes Cities Changing Diabetes.

Our Implementation Science theme

also works across all our core research themes and closely with HInM to ensure implementation science informs how we deploy and evaluate innovations.



INDUSTRY PARTNERS

44 - number of companies took part in a STEP INto Health course, designed to **help companies improve their access to the NHS**

.....

Over 200 SMEs contacted HINM requesting support to develop and introduce their innovations into the NHS

.....

77 new jobs created including **37 at APIS**, part of the groundbreaking partnership with QIAGEN

.....

£2.68 million leveraged funding through SME development programme

.....

£324,000 distributed to **6 projects** through the 2019/2020 Momentum Fund

.....

Manchester named **21st city** within **Cities Changing Diabetes** programme

.....

14 health-tech entrepreneurs supported as part of the **Greater Manchester Future of Health Challenge**

.....

€100,000 total funding secured by two HInM-supported SMEs at the (EIT) Health Headstart Awards

.....

The GM Digital Health accelerator programme concluded and Digital North, in partnership with 4 Northern AHSNS, was initiated.



From ground-breaking global partnerships to supporting new innovative SMEs, our industry work spreads across the full spectrum of the life science industry.

The benefits of devolution, combined with the strength of our commercial life sciences sector and assets in health tech, data analysis and healthcare put us in a fantastic position to accelerate innovation that will improve health outcomes for our citizens.

Informed by the Greater Manchester Local Industry Strategy, we can leverage our world class strengths in advanced materials and health innovation to support the creation fully integrated, digital health and care system, using preventative and assistive health tech; helping people stay productive for longer.

Global Partnerships

Our international partnerships have continued to grow during 2019-2020, bringing companies to Greater Manchester and supporting the development of the local economy. Following the announcement in 2018 of a ground-breaking partnership with global diagnostics company QIAGEN to

create a world-leading precision health campus, a new company has now been created and has begun work at Citylabs 1.0. With 37 new jobs created, APIS, has begun work developing biomarkers for the prediction, prevention, and diagnosis of disease.

Manchester has also been named the 21st city within the international Cities Changing Diabetes programme, in partnership with Health Innovation Manchester. Launched in 2014 by Novo Nordisk, University College London and the Steno Diabetes Center, Cities Changing Diabetes aims to innovate new approaches to prevention and management of type 2 diabetes. It means Manchester, which is only the second UK city to join the programme, will be able to share innovation and best practice on an international scale.

Greater Manchester has also been part of an innovative collaboration with Novartis UK to improve health and unlock the region's economic potential. Projects have included the creation of a new Trafford Macular Treatment Centre to improve access to optical screening and treatment within the community for patients with age-related macular degeneration.





Support for local SMEs and Innovators

Health Innovation Manchester also partnered with Novartis, alongside MediaCityUK, Push Doctor and Google on the Greater Manchester Future of Health Challenge, a 12-week accelerator programme providing unique opportunities for 14 health-tech entrepreneurs to work alongside the health and care sector and industry.

Through our Momentum Fund we have distributed £324,000 of funding to six projects and companies with innovative products or services designed to improve the health of our citizens. This year the funding call was split into two focus areas – Urgent & Emergency Care and Cardiometabolic. Innovations to receive funding include artificial Intelligence to support patients to manage their diabetes and an online system to match clinician availability to patient needs in real-time.

We also provided intensive support to 21 SMEs through our Greater Manchester European Regional Development Fund (ERDF) programme. To date a total of 98 SMEs have been supported and 20 jobs created in Greater Manchester. We have also supported 112 companies across 11 cohorts

with completing our STEP INTO Healthcare programme which educates and trains SMEs on understanding the NHS landscape and the GM healthcare ecosystem, untangling the process of procurement in the NHS and on pitching their innovation to the NHS target market.

During this year we have also provided intensive support to 16 SMEs and supported the creation of six jobs through our Cheshire and Warrington Fund (ERDF) programme. During the course of this programme over the past few years we have now supported 40 SMEs and supported the creation of 28 jobs in Cheshire East. This work has also secured an extension until 2023 with partners Innovation Agency and the University of Chester.

Two of our North West companies were also successful in securing €50,000 each through the final round of the European Institute of Technology's (EIT) Health Headstart Awards. Xploro, a digital therapeutics platform developed in Manchester, and Triple Tread®, a high performance tricycle manufacturer based in Congleton, were named winners at the conference in Dublin. Another Cheshire-based SME, Bruin Biometrics (BBI) Europe Limited, were winners for the Product of the Year at the annual Bionow awards.

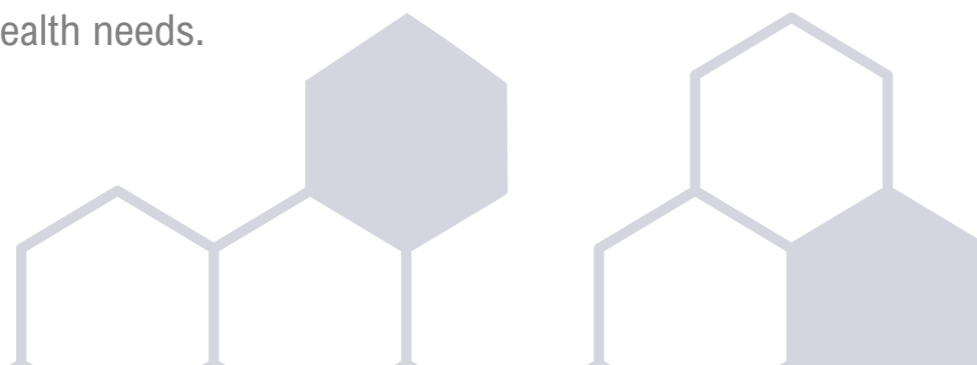
National Industry Programmes

Through our work as an AHSN we are also part of the Innovation Exchange, an AHSN-coordinated and Office of Life Sciences-commissioned approach to identify, select and support the adoption of innovations which have the potential to transform the lives of patients and support growth of the businesses we work with. It enables us to identify common challenges and quickly bring people and organisations together to develop, test and spread proven innovation. This has seen us support 200 companies through our Innovation Nexus, providing bespoke advice about working with the NHS.

We also support two national programmes working with industry and companies to support the adoption and spread of innovations into the health and care sector:

NHS Innovation Accelerator (NIA) - A national accelerator which supports committed individuals ('Fellows') to scale high impact, evidence-based innovations across the NHS and wider healthcare system. An NHS England initiative delivered in partnership with AHSNs.

SBRI Healthcare - Funded by NHS England and run by AHSNs, SBRI Healthcare supports companies to develop of innovative solutions for identified health needs.



CITIES CHANGING DIABETES

Greater Manchester has joined cities including Copenhagen, Rome and Shanghai as part of the Cities Changing Diabetes partnership to reduce the prevalence of type 2 diabetes in the city region. Manchester, in partnership with Health Innovation Manchester, has been named the twenty-first global city to join the partnership.

Launched in 2014 by Novo Nordisk, University College London and the Steno Diabetes Center, Cities Changing Diabetes aims to innovate new approaches to prevention and management of type 2 diabetes.

The programme supports communities to understand their unique set of diabetes challenges, identify areas and populations at greatest risk, and design targeted interventions that can put change in motion.

Manchester is only the second UK city, after Leicester, to be part of Cities Changing Diabetes, and it follows diabetes prevalence in the city region doubling in the past 20 years.

Currently 7.2% (90% Type2, 10% Type1) of the population live with the condition, greater than the UK national average of 6%. It is estimated to rise to 10.1% by 2045, however by reducing obesity this could hold back the rise of type 2 diabetes in Greater Manchester.

If Greater Manchester reduced obesity by 25% by 2045, it could prevent over 45,000 cases of type 2 diabetes and save £177 million in healthcare expenditure.

As part of the Cities Changing Diabetes programme and in collaboration with the Evaluation Theme of ARC-GM, we are undertaking research to understand the scale of diabetes within the city-region and a mapping of all the current research and innovations taking place within the city to tackle diabetes and improving physical mobility of those with diabetes.

It will also feature a community engagement project, working with local minority ethnic groups where high levels of obesity and diabetes are more common, to ensure services reflect the needs and preferences of all Greater Manchester residents.

PREVENTING FALLS WITH SAFE STEPS

Every minute in the UK, six elderly patients fall and 40% of hospital admissions from care and residential homes are related to falls. Falls are not a natural part of ageing, national data suggests that between 25 to 30 percent of falls could be prevented.

Safe Steps, one of the innovations which took part in the Greater Manchester Digital Health Accelerator in 2018-2019 with Health Innovation Manchester, is a digital falls risk assessment tool, designed to reduce the number of falls in care homes.

Through a successful proof of concept process in more than 100 care homes, including within Bolton and Tameside, Safe Steps has seen a 28% reduction in falls and 20% reduction in hospital admissions. It is used regularly by approximately 400 health and care staff and has been used to conduct over 10,200 risk assessments for more than 3,000 people.

Tameside and Glossop Integrated Care NHS FT is also working with Safe Steps as part of a pilot at the Stamford Unit at Tameside Hospital. All patients admitted to the unit have a risk assessment on the Safe Steps app, which then devises a care plan individualised for the patient. The care plan gives the clinical team actions, these could be to refer the patient to the long-term conditions team or the patient might need a physio assessment. The app keeps track of what actions are outstanding for that patient, which also assists the clinical team.

Chief Executive of Tameside and Glossop Integrated Care NHS FT, Karen James said: "Safe Steps is currently in use across 100 care homes across Bolton and the Wirral but it's never been used in a hospital setting before, so we are the first to use this app. It has been really successful in Bolton and the Wirral and has reduced their falls by 28% and minor slips and trips by 61%. We are adapting it to make it fit for purpose for here rather than care homes.

"Early signs of the pilot are promising and we are really excited to be working to develop this app for the people of Tameside and Glossop and further afield."



A VISION FOR GREATER MANCHESTER – TRANSFORMING HEALTH THROUGH INDUSTRY COLLABORATION WITH NOVARTIS

Greater Manchester’s devolved powers, combined with a first-of-its-kind ‘Memorandum of Understanding’ (MoU) between Health Innovation Manchester (HInM) and the pharmaceutical industry, has created a unique health ecosystem reliant on strong partnerships, close collaboration and shared learnings.

Greater Manchester has provided a valuable environment for collaboration – inviting innovative companies, such as Novartis UK, to collaborate with local health services to improve health, create a sustainable healthcare system, address challenges within the system and unlock the region’s economic potential.

Since 2015, Novartis UK have collaborated with local health services in Greater Manchester including digital accelerators, service transformation partnership and knowledge transfer exchanges.

The Greater Manchester Future of Health Challenge

A 12-week accelerator programme providing unique opportunities for 14 health-tech entrepreneurs to work alongside the health and care sector in Greater Manchester and companies such as Novartis UK, Push Doctor, MediaCityUK and Google, to create and accelerate pioneering digital and data technology that will help improve people’s lives through purpose-driven innovation.

Manchester Royal Eye Hospital Collaboration

Trafford Macular Treatment Centre opened its doors at the beginning of November at Trafford General Hospital, part of Manchester University Hospital NHS Foundation Trust. The purpose-built specialist centre replaces the mobile macular unit and provides regular follow up and treatment for age-related macular degeneration (AMD). It allows patients to benefit from appropriate care, timely appointments and appointments closer to home.

Christie Hospital Breast Analytics Partnership

Over the course of 20 months, Novartis UK has collaborated with the Christie Hospital, Manchester, and technology firm, IQVIA, using data analysis technology to gain greater understanding of access to local services for patients with secondary breast cancer. This has led to the development of a Consultant-led Pharmacist-delivered new clinic service.

“There is a lot to be learnt from the work being done in Greater Manchester. It clearly illustrates what is achievable when the NHS and companies work together, and create an environment that allows businesses to innovate and solve some of the most challenging healthcare issues in today’s society.”

Haseeb Ahmad, Managing Director and Country President, Novartis UK



PATIENT AND PUBLIC INVOLVEMENT

Health Innovation Manchester ensures that the voices and experiences of patients and members of the public run throughout our work. The public experience plays a vital part at every stage of our project and programme development and we are committed to engaging with our diverse communities within Greater Manchester to ensure they have a voice.

This year, we have reflected on how we have engaged with our public contributors in the past, celebrating our successes but also recognising where we could improve.

As a result, we have refreshed our offer and expanded our Public Experience Group into a Public and Communities Involvement and Engagement Panel. This panel, which meets quarterly, features 16 public contributors from a variety of backgrounds and experiences and will help to shape the work of Health Innovation Manchester.

New technology is one approach helping us to remove barriers and better connect with the citizens and communities within Greater Manchester. It is supporting us to hear more voices by allowing contributors to virtually attend meetings through video conferencing and provide feedback digitally. Public involvement runs throughout our innovation pipeline to ensure that the decision making around the Health Innovation Manchester portfolio is grounded in both the lived experience and the insights of local people.

Working together across our health and research system has also been key to our PPIE development this year with Health Innovation Manchester creating the One Manchester PPIE forum. This regular meeting brings together PPIE leads from our partner organisations, including NHS Trusts, Universities, research bodies, Greater Manchester Health and Social Care Partnership, the voluntary sector and other existing public experience groups, to share learning, maximise collaboration and form new cross-sector PPIE opportunities. We work closely with the ARC-GM and have a joint strategy for the engagement of patients, the public and communities.

During 2019-2020 we have:

- **Built the foundations** of a One Manchester strategic approach to PPIE with our partners
- Engaged with more than **100 public contributors**
- Held **10 discussion groups** on a range of topics including Hepatitis C, Mental Health and Dementia
- **Worked in partnership with 40+ organisations** and groups on PPIE
- Created **5 patient case studies**
- **2 public members** contributed to the shortlisting and judging of the Momentum Fund applications

KEY PROJECTS

Mental Health Listening Exercise

Public members and those with lived experience of mental health helped co-design our approach to the listening exercise, including shaping the questions to be asked and reviewed and developing summary documents for the survey. Contributors also shaped the design and delivery of a discussion group made up of 16 patients, mental health practitioners and front-line staff. We also engaged with 16 organisations and community groups, including an over 65s group and staff at a specialist unit for those with mental health issues, and a public member was also involved in this work. The project resulted in more than 415 responses online, face-to-face and telephone interviews.

Hepatitis C

As part of the programme to eliminate Hepatitis C in Greater Manchester by 2025 and the rapid test and treat project within prisons, we have conducted public involvement workshops in HMP Styal Prison with women who have experienced the new pathway. The women shared their thoughts and this feedback has helped to inform the next phase of the work in prisons at HMP Forest Bank. One woman said: “The treatment helps. I feel safer now knowing that I am getting better. I don’t want to put myself at risk again. No way. I’ve wrote home and told my family I will be clear. Thank you.”

SMASH

SMASH is a digital audit tool which can support GPs to identify patients that might be at risk as a consequence of the medication they are prescribed. As this project involves a new use of existing data, we are creating a virtual panel of 20 public contributors that can help us answer key questions to guide our work.

UTILISATION MANAGEMENT

The Utilisation Management Unit works in partnership with NHS organisations and other health and care settings.

Part of the NHS since 2003 and now working as part of Health Innovation Manchester, the team have an established reputation as pioneers in the field of clinically-led analytics; with a proud track record of delivering bespoke analytics and evidence-based strategies to aid place-based service and pathway improvement.

During 2019-2020 the UM Unit has focused on reshaping and redefining its offer to the NHS, recognising the changing landscape which health and care systems are operating within. Patients are living longer, their expectations have changed and the NHS need to manage capacity across all areas with increasing demand on resources.

The UM Unit offers a bespoke approach to each project, developing an in-depth understanding of every organisation's specific needs and creating recommendations to ensure cost-effective and sustainable improvement through a blend of three key specialisms.

- **Bespoke Analytics** - Supporting service improvement through bespoke, clinically-led data analysis and predictive analytics to improve current and future insight into patient flow, care pathways and capacity and demand.
- **Clinical Pathway Reviews** - Supporting improvement through pathway reviews to increase the efficiency and effectiveness of service delivery.
- **System Improvement** - Supporting local services, organisations and systems to identify key challenges and take action to overcome them.

NHS

Utilisation Management Unit

This year we have delivered:

- **15 Clinical pathways reviews** across GM and other areas in the UK.
- **Two** 100% challenge events.
- **Direct support in 10 separate localities** with urgent and emergency care transformation and improvement for example reviewing and supporting the development of streaming pathways to same day emergency care.
- **Tailored professional development training** to 25 nursing staff in one Trust covering the operational and leadership elements required for improved quality and safety relating to ward-based patient flow.
- **Opportunistic coaching** with a wide range of health professional and challenging current culture around patient flow.
- **Co-designed operational and clinical dashboards** for service teams in a tertiary centre.
- **Supported the Momentum Funding Call for Urgent and Emergency Care Innovations** designed to develop and evaluate appropriate solutions, whether medtech, digital, or service redesign to create real impact.
- **Sponsored** the Urgent and Emergency Care: Facilitating Patient Flow conference, which offered examples of practical improvements in whole system flow, ranging from application of real time technologies to reducing unwarranted variation in practice.
- **Hosted two AHSN National Patient Flow/ Digital Innovation learning events** to share best practice and consider all the elements required to enhance patient flow; people, process, culture and technology.
- **Developed a GM Patient Flow Network** for Patient Flow Leads/Teams in acute Trusts, soon to be extended to patient flow colleagues in Cheshire and Mersey and South Cumbria and Lancashire.
- **Acted as a “critical friend”** in localities by holding a mirror up to urgent and emergency care systems, providing supportive independent challenge and therefore developing insight.
- **Dr Paula Bennett, Associate Director of Clinical Development** at Health Innovation Manchester and the Utilisation Management Unit, joined the Florence Nightingale Foundation Alumni Community.

CASE STUDY

SUPPORTING URGENT AND EMERGENCY CARE IN GREATER MANCHESTER

This year the UM unit has continued to provide Daily Pressure Reports, analysing GM's urgent and emergency care performance. These reach over 350 inboxes every day in Greater Manchester. The reports have also been refreshed to include 7-day predictions and machine learning thresholds for metrics most likely to affect four-hour performance. Weekly and monthly system-level urgent care dashboards, commissioned by GMHSCP, also reach over 75 leaders.

The UM unit supported urgent and emergency care peer reviews across all 10 localities in GM and has directly supported to clinical teams across several localities to improve ward-based flow including weekend discharges.

Fortnightly winter predictions, incorporating analysis of seasonal patterns and trends to predict demand measures through the winter period from November 2019 to February 2020, have also been used to support system calls all localities in GM.

“It’s the one performance report I always read, every day.”

Head of Commissioning in a GM locality



CASE STUDY

ASSESSING PALLIATIVE CARE NEEDS FOR ST ANN'S HOSPICE

St Ann's Hospice, a charity providing care and support to patients living with or affected by life-limiting illnesses from across Greater Manchester, commissioned the UM Unit to review and update a Palliative and End of Life Care Needs Assessment. It aimed to update their existing palliative care needs assessment, understand and evaluate the internal activity levels across inpatient, outpatient and home-based services, and predict future requirements for hospice level care over the next 10-15 years.

Using a variety of data sources, as well as data from the hospice themselves, the Utilisation Management Unit compared recent data within the

original palliative care needs assessment and demonstrated data change over the past 13 years.

The work found that, based on current service provision, a significant increase in bed-based services will be required by 2041 in order to meet predicted demand. It is also likely that patients with non-cancer diagnoses will increasingly need hospice care in the future.

The results of the review allowed the hospice to better plan for the future. This includes how the provision of outpatient and community services can supplement the increasing palliative and end of life care needs of the local population and how needs will change as the population increases and becomes older.

“This work has been so helpful for our planning, I’m telling everyone. We will be sharing the insights with GM and the other hospices in GM.”

Rachel McMillan
Deputy CEO St Ann's Hospice

BED MODELLING AT SOUTHERN HEALTH AND SOCIAL CARE TRUST

Statistics published by the Northern Ireland Department of Health show demands on hospital beds are increasing. Southern Health and Social Care Trust commissioned the UM Unit to undertake data analysis of the predicted capacity and demand requirements at their two hospital sites up to 2024.

The UM Unit used information and data from the previous five years and projected future population changes in order to assess the number of beds required at each hospital to meet the increasing demand.

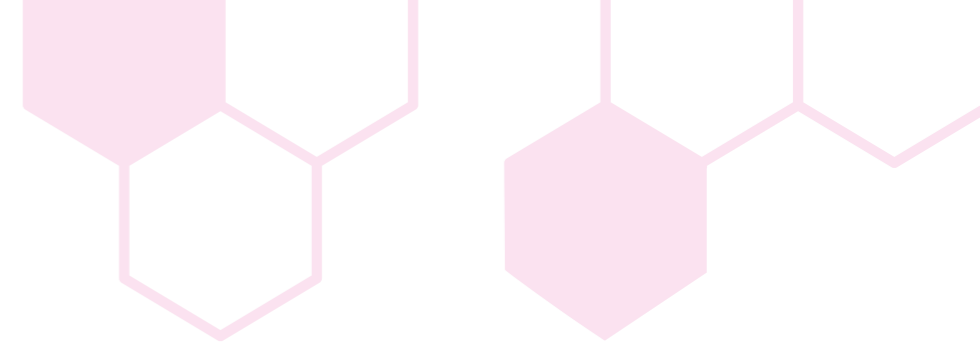
Analysis of projected occupied bed demand shows that both hospital sites will have fewer beds than needed to meet requirements by 2024.

In both cases, the greatest deficit in available beds is in General Medicine. The study also found that there is significant variation across month and day of week.

Through the use of a data visualisation tool, the Trust can understand the impact of population changes at a Trust, hospital site, speciality and subspecialty level, including non-acute/rehabilitation bed capacity.

The ability for managers and lead clinicians to truly understand the projected demand increases over the next five years enables transformation plans to be developed to address future capacity needs.





GOVERNANCE

This year we have enhanced and improved our operating model in order to better deliver our key aims and objectives. During this year we have seen changes to our Board membership and we have continued to develop our innovation pathway, with a series of key decision-making gates created and overseen by the HInM executive team, to provide greater scrutiny of projects and ensure alignment to GM’s strategic priorities.

Programmes and projects have also been given executive-level sponsorship and a core team meets regularly to consider new proposals and discuss formal decision-making gateways. We have developed a method and visualisation tool for our innovation portfolio in partnership with academics, our industry support function and our programme management office. This new digital dashboard allows us to view our work through different lens and gives a complete picture of the work taking place from discovery through development and deployment.

During 2020-2021, we will be leading the rolling out this pipeline approach across the AHSN Network, including the mechanisms by which proposals are identified, assessed, prioritised, and supported through to deployment and adoption at scale.

INTEGRATED PORTFOLIO



 = Decision-making gateway

OUR BOARD

- **Rowena Burns**
Chair of Health Innovation Manchester
- **Professor Ben Bridgewater**
Chief Executive
Health Innovation Manchester
- **Amanda Risino**
Chief Operating Officer
of Health Innovation Manchester
- **Professor Peter Clayton**
Chief Academic Officer
Health Innovation Manchester
- **Sir Howard Bernstein**
Strategic Advisor
- **Dr Helen Routh**
Strategic Advisor
- **Richard Topliss**
Chair of The Growth Company
- **Eamonn Boylan**
Chief Executive
Greater Manchester Combined Authority
- **Sir Mike Deegan**
Chief Executive
Manchester University NHS Foundation Trust
- **Raj Jain**
Chief Executive
Northern Care Alliance NHS Group
- **Professor Graham Lord**
Vice President
The University of Manchester and Dean
of Faculty of Biology, Medicine and Health
- **Professor Malcolm Press**
Vice-Chancellor
Manchester Metropolitan University
- **Sarah Price**
Interim Chief Officer
Greater Manchester Health and
Social Care Partnership
- **Joanne Roney**
Chief Executive
Manchester City Council
- **Professor Dame Nancy Rothwell**
President and Vice Chancellor
The University of Manchester
- **Dr Jeffrey Schryer**
Chair
NHS Bury Clinical Commissioning
Group (CCG)
- **Lord Peter Smith**
Greater Manchester Combined Authority
Leader with responsibility for Healthy
Lives & Quality Care
- **Roger Spencer**
Chief Executive
The Christie NHS Foundation Trust
- **John Stageman OBE**
Chairman
Bionow

We would like to thank Jon Rouse and Anthony Hassall for their time on the Board and wish them well in the future.

Our Executive Team

- **Professor Ben Bridgewater**
Chief Executive
- **Professor Peter Clayton**
Chief Academic Officer
- **Amanda Risino**
Chief Operating Officer
- **Dr Tracey Vell**
Clinical Director
- **Professor Ian Bruce**
Academic Director
- **Guy Lucchi**
Digital Innovation Director
- **Laura Rooney**
Director of Corporate Affairs and Strategy

Our Innovation Prioritisation and Monitoring Committee (IPMC) which is a key subgroup of the HInM Board and contains representation from all the relevant sectors across GM. Through IPMC we match innovations to the needs of our population.

We also have established the Research and Education Committee, a subgroup of the Health Innovation Manchester Board, which includes senior leadership from across higher education and research infrastructure. Together we are global leaders for health and social care education.

The committee has been set up to:

- Provide the strategic leadership of research and its translation, ensuring that Greater Manchester positions itself successfully to attract major research and innovation funding.
- Ensure there is a constant pipeline of translational research feeding out innovation programmes and subsequent deployment across Greater Manchester.



FINANCE

2019-20 Results	2019-20	2018-19
	£'000	£'000
Income	10,510	10,197
Expenditure		
Health and Implementation	2,978	2,611
Informatics	351	422
Industry and Wealth	1,477	1,665
Utilisation Management	863	791
Research and Development	1,399	489
Research Domains	774	774
Corporate (Incl. Board and Reserves)	2,665	3,445
Total expenditure	10,509	10,196
Net surplus	1	1

Our financial duty is to break even year on year.
 Figures include the activity of NIHR ARC-GM from 1 October 2019.

Thanks to all our national commissioners, Greater Manchester Trusts, local commissioners and universities for their support this year.





Discover



Develop



Deploy