Manchester City Council
Report for Resolution

Report to: Economy Scrutiny Committee – 27 January 2016

Subject: Science and Health Innovation

Report of: Strategic Director (Strategic Development)

Summary

This report provides an overview of the importance of science to the Manchester economy. It also provides information on work to establish a streamlined Health Innovation pathway, creating jobs and growth and improving the health of people in Manchester. This was previously the subject of a workshop session for the Committee in August 2014.

This brief report provides the context for the subsequent agenda items related to the European City of Science and Corridor Manchester.

Recommendations

1. To note the importance of science, and its exploitation, to the growth of the Manchester economy. This is reflected in the Manchester Strategy and Greater Manchester Strategy.

2. To note the particular strengths in fundamental science related to advanced materials, life science and health innovation and the opportunities that arise for Manchester from these.

3. To note also the progress that has been made in establishing Health Innovation Manchester as a critical piece of infrastructure to support Health and Social Care Devolution by creating jobs and improving patient health.

4. To invite the Committee to comment on the report and presentation.

Wards Affected: All

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Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

1. Introduction

1.1 The Manchester Strategy makes clear the importance of drawing on the city's science strengths in creating a competitive, dynamic and sustainable economy. This includes both our research and innovation assets but also industrial base. It requires Manchester to commercialise the world class research that we have to create benefits for people who live and work in the city.

1.2 This ambition also sits at the heart of the Greater Manchester Strategy and the vision that 'by 2020 Greater Manchester will be renowned as a successful commercial science and technology city'. Science and innovation is critically important in driving up the productivity of the city region and ensuring Greater Manchester's long term competitiveness. Many of the key assets necessary to achieve this vision are located in Manchester, clustered in large part around Corridor Manchester.

1.3 This short report provides an introduction to the Science themed meeting of the Committee.

2. Science and Manchester

2.1 Manchester has a rich history of innovation and exploiting science and technology to deliver commercial success, from the splitting of the atom to the creation of the first modern computer.

2.2 As Manchester has reshaped its economy after the industrial decline of traditional industries it has sought to build on its distinctive assets. This included the strength of its science research base and the science, technology and innovation assets, both academic, public and private sector, in Manchester and the wider area. Science and innovation is critically important in increasing productivity and securing our long term competitiveness.

2.3 Across the city region it is estimated that over 60,000 people are employed in science and technology. It is estimated that in 2014 £4.2bn GVA was generated in Greater Manchester through science and technology and there were 8,100 science and technology companies. Many of the jobs and companies are in Manchester given the density of activity in the city and specifically in Corridor Manchester. In addition there are many related jobs across all business sectors – for instance digital, manufacturing, legal and financial – that support the commercialisation of Manchester's science base.

2.4 A presentation later in the meeting about Corridor Manchester, and the Strategic Vision for the area, brings out in more detail the ambition, assets and opportunity for Manchester.

2.5 Over the last 2 years a stronger relationship has developed with Cheshire East reflecting the important science base in the district and in particular the economic opportunity presented by Alderly Park, which is now owned by Manchester Science Partnerships.

2.6 The City Council has played a key role in shaping and delivering the science eco-system in the city. For example the Council is a major partner in Manchester Science Partnerships, the Chief Executive is the Chair of Manchester Health Science Centre and the Council provided the leadership to develop Health Innovation Manchester to further strengthen the eco-system to the benefit of the economy and the health of people in Manchester.

2.7 The Council also provides a major input to the Corridor Manchester partnership which provides a focus for science and innovation activity in the city, with 60,000 jobs at the moment and a further 11,000 forecast over the next 10 years. The Council has developed strong working relationships with the University of Manchester and other partners and developed new investment models and capacity to support growth of the sector. This includes CityLabs, our support for the new Life Science Enterprise Zone and the successful bid for a £40m Life Science Investment Fund.

2.8 The Committee has separately considered the skills required for the city's growth overall so this is not covered in this report. However, it is clearly critically important for the city that there are the right skills available to grow the business base and support both fundamental research and the commercialisation of scientific discovery. The Council will continue to work to ensure that residents can access the jobs that are created at all levels and benefit from the growth generated through science and innovation.

2.9 Manchester is the European Capital of Science in 2016 and is hosting the prestigious European Science Open Forum in the Summer. This will provide an important platform for international collaboration and crucially the opportunity for young people in particular to access science, building on the work of MOSI, schools, the Universities and other institutions in the city. A more detailed presentation will be made at the meeting of the Committee.

3. Science Strengths

3.1 In 2013 Greater Manchester produced a Smart Specialisation Strategy. This structured process identified where Manchester had the greatest potential to succeed. The work was peer reviewed and given official recognition by the European Commission while being praised for its clarity coherence and focus on innovative practice.

3.2 This identified research strengths including:

- Advanced materials including graphene
- Health innovation including data intensive healthcare
- Energy including nuclear technology
- Biotechnology
- Chip design and high performance computing
- The built environment
- Interactive technology and robotics and
- Acoustic technology.

3.3 It also showed that Manchester is genuinely world-leading in the fields of advanced material and nanotechnology, life sciences and big data.

3.4 Beyond pure research the leading areas of science and technology specialism are advanced materials, health innovation, precision medicine, synthetic biology, cancer research and regenerative medicine. There is also a dynamic and growing commercial digital technology base in Manchester.

3.5 Since the Smart Specialisation work was produced significant new science related developments and investment has been secured in Manchester. These are focussed around Manchester's particular strengths and specialisms enabling Manchester to realise more fully its potential. It has a particular emphasis on commercialisation so that Manchester maximises the economic benefit of its research.

3.6 The investment is detailed in the Corridor Manchester Strategic Vision and includes the Sir Henry Royce Institute for Advanced Materials, National Graphene Institute, Graphene Engineering Innovation Centre, the Square Kilometre Array at Jodrell Bank, Manchester Science Partnerships expansion including at Citylabs and the investment at Alderly Park. A new Life Sciences Enterprise Zone has been created to support further development of these businesses in Manchester.

3.7 The Government have launched a process to support economic areas to develop Science and Innovation Audits. These will be locally lead and are designed to strengthen the understanding of the opportunities in each area to use science and innovation to drive economic growth. The intention is that they will provide the evidence base for further investment.

4. Health Innovation

4.1 Manchester has developed a strong health innovation eco-system bringing together health care research, academia and industry. For instance Manchester has the only Academic Health Science Centre outside the South East which brings together the University and research intense Hospital Trusts. It also has a well developed Academic Health Science Network that focuses on encouraging implementation of new innovation into practice by health providers. There is a very sizeable life science industry base in Manchester and the neighbouring areas.

4.2 A workshop involving MAHSC, GM AHSN, other partners and members of Economy Scrutiny Committee was held in August 2014 following presentations at a meeting of the Committee. This explored the priorities and opportunities and the potential for strengthening and joining up the eco-system more effectively to benefit the city.

4.3 Speeding up the health innovation pathway was one of the early implementation priorities identified as part of the Health and Social Care devolution programme. Health Innovation Manchester was launched in September 2015 to streamline the pathway from discovery science, through

development of new approaches and treatments and ultimately delivery. The twin benefits of economic growth and improved health of residents will be driven through this new approach which has the potential to be groundbreaking in global terms.

4.4 A presentation is attached as an annex and will be made at the meeting by the Chief Executive of GMAHSN, Mike Burrows, enabling the committee to see how this work is progressing since the launch and to discuss issues they would like to explore.

5. Recommendations

5.1 The recommendations are contained at the front of the report.


Health
Innovation
Manchester
Health Innovation Manchester
Discovering. Developing. Delivering.

Health Innovation Manchester

Our Vision

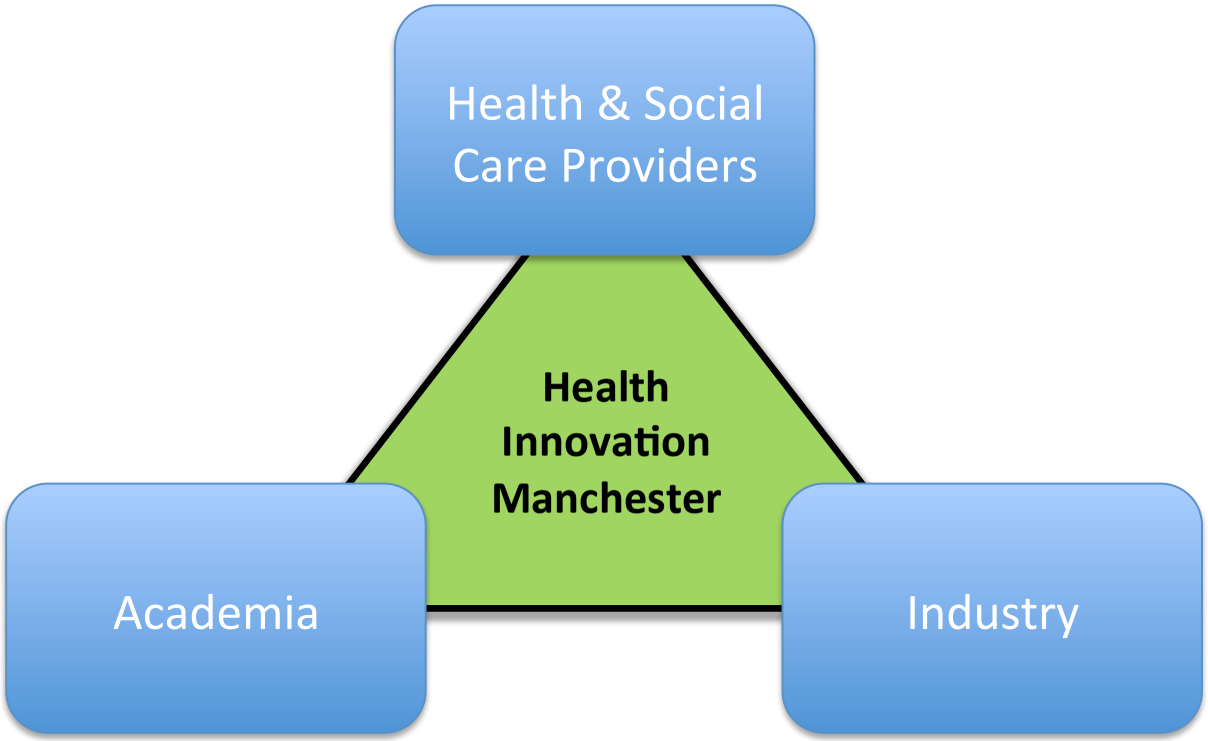
To transform the health of our population by driving research and innovation into daily practice

Our Purpose (What we intend to do)

Driven by the health needs of our population and working in partnership we will mobilise a system wide approach to the discovery, development and delivery of innovation across Greater Manchester for the benefit of all

Discovering. Developing. Delivering.

Close collaboration across H&SC providers, Academia and Industry is key to delivering our vision



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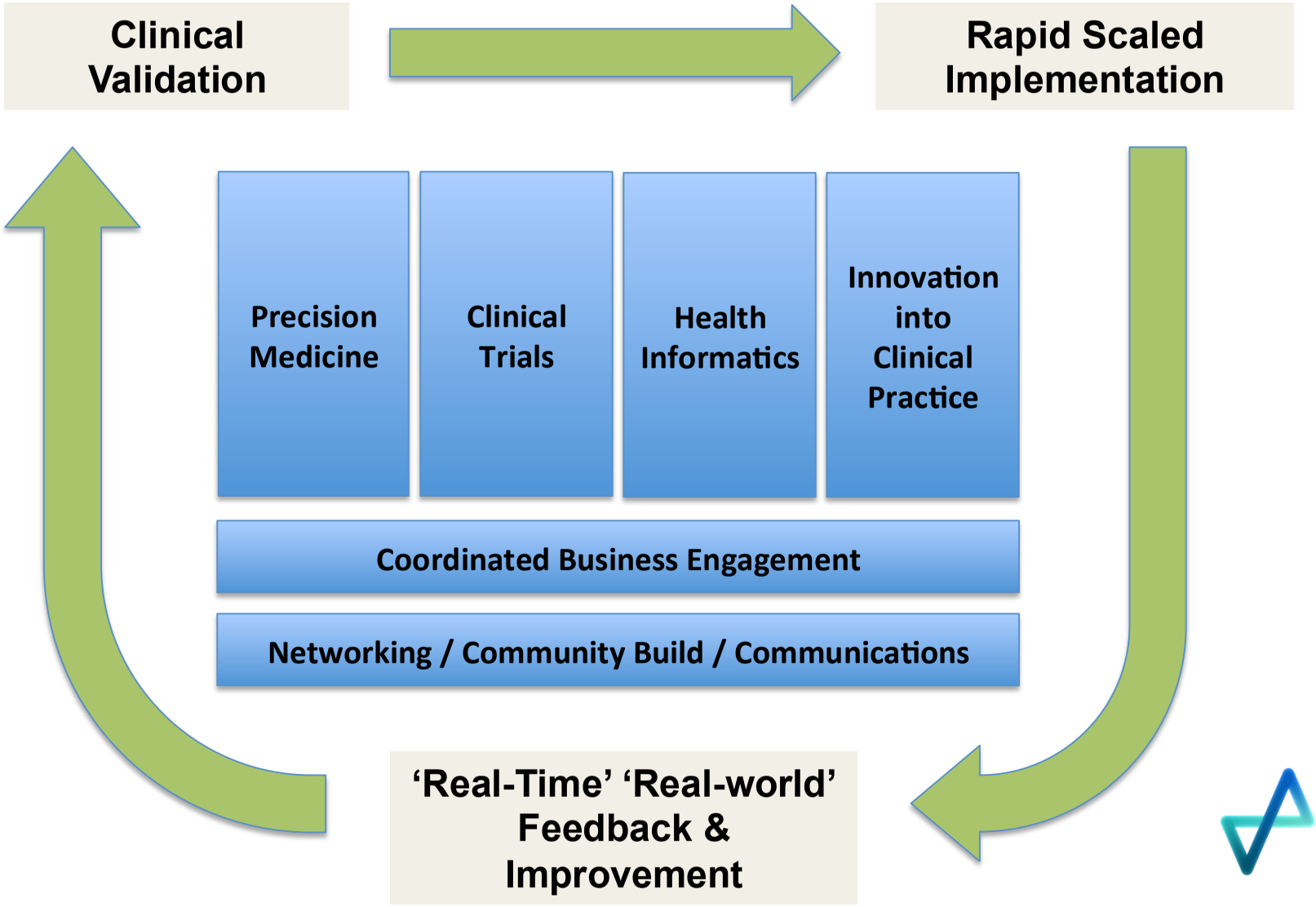
Initial Priorities for Health Innovation Manchester



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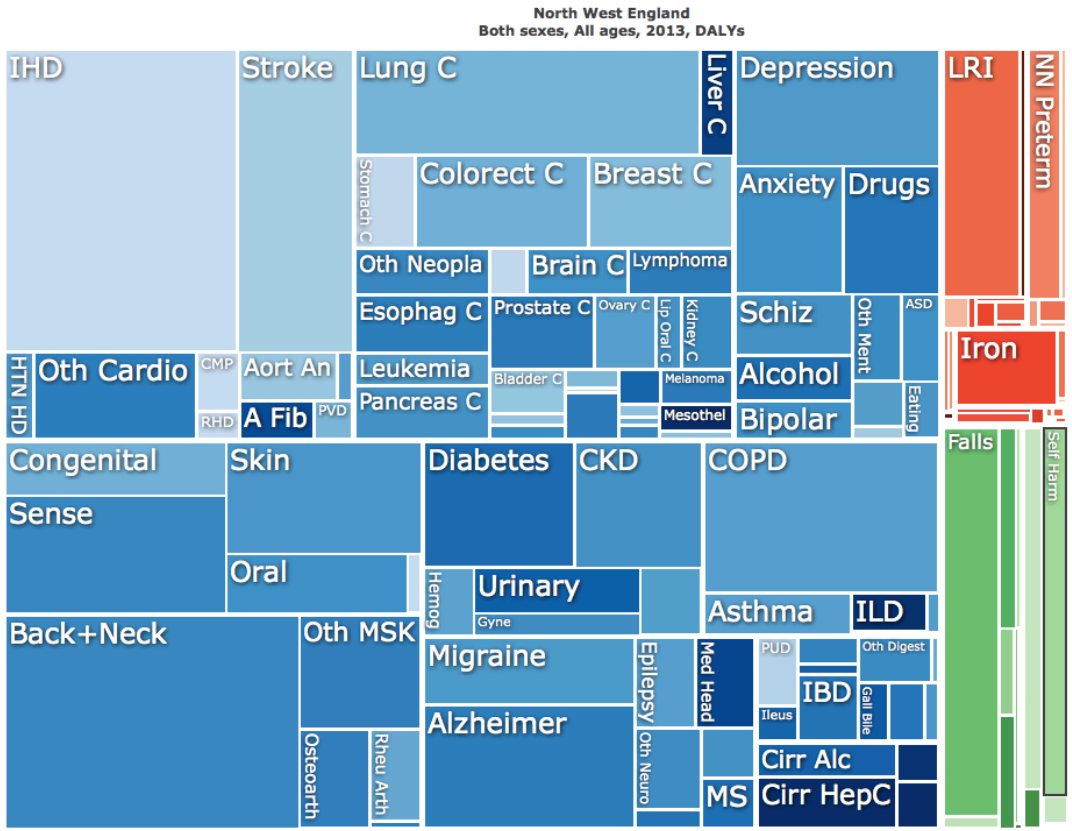
Specific Disease Priorities: Example data on NW England Burden of Disease (DALY) from PHE / Gates Collaboration



2013 rank

1 Ischemic heart disease
2 Low back pain
3 Lung cancer
4 COPD
5 Alzheimer disease
6 Falls
7 Lower respiratory infect
8 Neck pain
9 Ischemic stroke
10 Diabetes
11 Major depression
12 Other hearing loss
13 Colorectal cancer
14 Hemorrhagic stroke
15 Migraine
16 Other cardiovascular
17 Other musculoskeletal
18 Anxiety disorders
19 Breast cancer
20 Self-harm
21 Neonatal preterm birth
22 Iron-deficiency anemia
23 Other CKD
24 Esophageal cancer

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Future innovation pipeline directed to GM needs

Driven by the health needs of our population *and working in partnership we will mobilise a system wide approach to the discovery, development and delivery of innovation across Greater Manchester for the benefit of all*

	Discover	**Develop**	**Deliver**
	5+ years delivery timeframe ***Gaps in research drive discovery activity within GM***	**2-5 years delivery timeframe** ***Becomes the focus for local testing and guides clinical research***	**0-2 years delivery timeframe** ***Drives short term implementation short list***
Disease priority 1	**PROJECT**	**PROJECT**	
Disease priority 2		**PROJECT**	**PROJECT**
Disease priority 3	**PROJECT**	**PROJECT**	**PROJECT**
etc etc			

Key enabling capabilities / Priority workstreams

- Clinical trials
- Innovation to practice
- Informatics
- Precision Medicine
- Ecosystem, communications and business development

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