

Med-Tech CONNECT West Midlands (COllaborative Network to eNable and Enhance Cross-sector Transformation)

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UK RESEARCH AND INNOVATION STRENGTH IN PLACES FUND



AIM

To implement one of the key ambitions articulated in the UK's first Local Industrial Strategy, delivering innovation-led regional growth across the West Midlands region in medical technologies, covering a broad spectrum of frontier technologies from advanced therapies, digital health and diagnostics through to classical devices, based on local industry and academic innovation strengths (i.e. excluding small molecule drug development). We will achieve this through a consortium which has brought together local industry at multiple scales; civic leadership; multi-disciplinary academic and clinical expertise, infrastructure and assets; our regionally-based Catapult and medical technologies industry bodies; as well as patients and citizens - together focused on tackling industry-identified barriers to growth using co-created solutions. CONNECT will foster a distinctive regional Med-Tech cluster, nurturing the growth and diversification of a substantial existing industry base – leveraging relevant other industry strengths and supply chains in manufacturing and digital and enabling these to diversify – as well as catalysing creation of innovative new businesses.

DELIVERY PARTNERS

Universities of Birmingham, Aston, Birmingham City and Warwick; HVM-Catapult/ Manufacturing Technology Centre; Medilink; University Hospitals Birmingham

INDUSTRY SPONSORS

AcuWomen, VR, Holosphere, Hugo Technologies, Orbsen, Renishaw, The Binding Site, Dignio,

POLICY SPONSOR

West Midlands Combined Authority

SUPPORTERS

West Midlands Academic Health Science Network (representing 16 other NHS Trusts across the West Midlands); West Midlands Growth Company

ALIGNED TO THIS AIM, CONNECT HAS THREE KEY OBJECTIVES:

Productivity: Enabling well-networked, efficient and effective supply chains by integrating outstanding regional research and innovation expertise, assets (facilities/ data/ resources) and businesses within our currently-fragmented ecosystem to tackle 11 industry-led challenges via a unified 'front-door'.

Inclusivity: Leveraging strong multi-stakeholder relationships across industry, academics, clinicians, patients, citizens and policy leaders to co-create future products; develop and deliver novel multi-sector training programmes to foster talent and upskill each of these groups; and make a critical mass of local research and innovation strength accessible across a wider regional cluster.

Sustainability: Utilise a novel partnership between the region's outstanding engineering and clinical strengths with its excellent business schools and civic leadership to identify how activities and investment directly drive local growth, building a robust evidence base for future investment and policy change.

CONNECT IS SPECIFICALLY DESIGNED TO TACKLE THE WEST MIDLANDS' MED-TECH PRODUCTIVITY CHALLENGE:

Our relative abundance of Med-Tech SMEs does not translate to equivalent employment/turnover to comparative regions (e.g. Cambridge/Leeds). Current SME growth has plateaued, so in order to unlock regional potential, extensive discussions (pre-/post-seedcorn) with >100 regional companies have identified, tested and refined 11 critical challenges to Med-Tech business success/growth:

1 CLINICAL /PATIENT ENGAGEMENT

Insufficient access to NHS expertise, patients /users and "innovation-ready" datasets

2 REGULATORY BARRIERS

Complex confusing, rapidly-evolving (inter)national regulatory landscape

3 ADOPTION /IMPLIMENTATION

Adoption of products in national (NHS) and international markets

4 INNOVATION ACCESS

Timely access to innovation expertise /infrastructure /literature (academic /technological/ industrial)

5 EMERGING MARKETS

Capability /capacity to respond to emerging market opportunities e.g. digital innovation

6 PROTOTYPING

Cost-effective prototyping (availability /cost of appropriate facilities /expertise prohibitive)

7 POC MANUFACTURING

Initial small-scale manufacture of novel Med-Tech products not currently locally-available

8 SKILLS SHORTAGE

Talent pool not of sufficient scale /diversity /readiness to enable /sustain growth

9 INVESTMENT

Uncoordinated approach to private sector investment

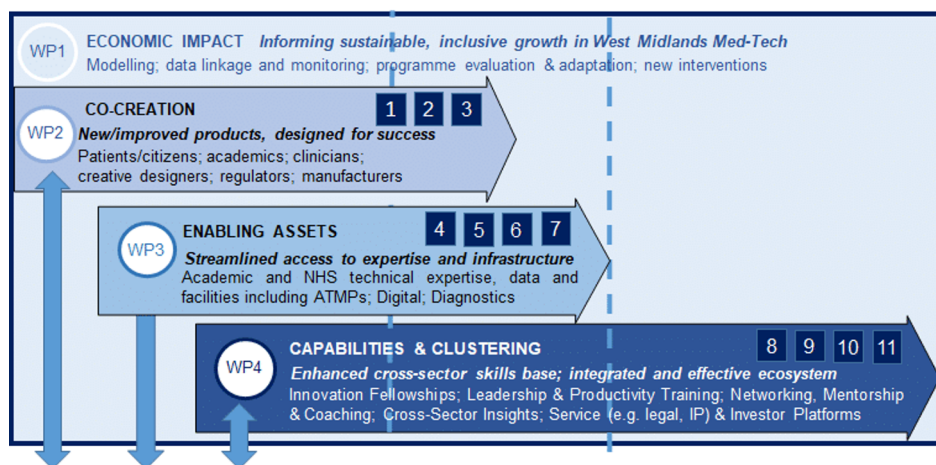
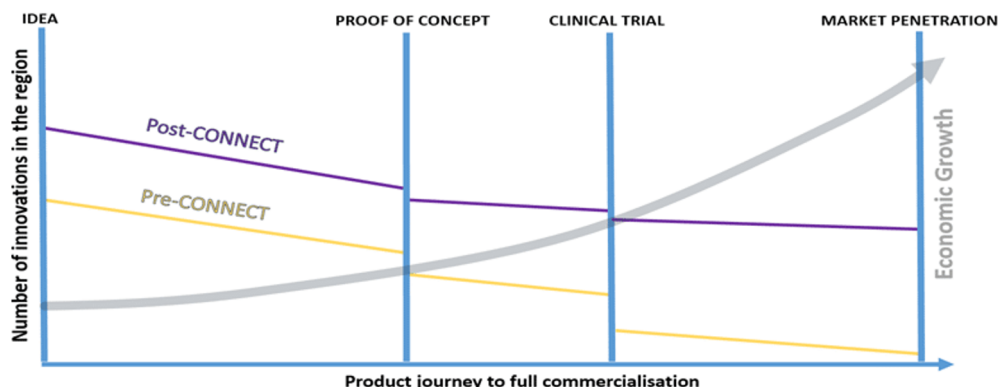
10 CO-LOCATION AND CLUSTERING

Limited co-location opportunities for critical mass of expertise /facilities to enable collaboration

11 SUPPORTING SERVICES

Lack of streamlined support identifying/ accessing service sectors e.g. legal /IP /financial advice

Tackling these barriers to growth in a coordinated, collaborative way across multiple regional stakeholders offers a critical opportunity to create an internationally-leading Med-Tech "cluster", in a market worth ~\$594.5 billion by 2024. Data demonstrate significant clustering of research expertise around Birmingham within a much more diffuse West Midlands industry base and supply chain, with significant productivity challenges: CONNECT therefore focuses on leveraging primarily Birmingham-based innovation critical mass for cross-regional inclusive growth.





LOCAL ECONOMIC IMPORTANCE

CONNECT is driven by our Local Industrial Strategy (the first UK LIS) ambition for regional growth “building an inclusive and balanced economy”. Throughout CONNECT seedcorn activities, workshops have been held with business, academic, NHS and policy representatives at all levels of seniority, facilitated by the team developing WMCA’s regional LIS implementation plan. CONNECT will drive delivery of business support and innovation cluster development, acting as key regional platform for convening partners to maximise opportunities and deliver LIS ambitions through coordinated investments in people, skills, infrastructure and cross-stakeholder co-creation of innovation.



CONNECT HAS FOUR MAIN WORK PACKAGES (WPS)

WP1: Economic Growth will model, measure and evaluate CONNECT activities within the context of a regional framework for economic growth, informing new interventions that allow targeted, well-evidenced policy/investment in supporting the West Midlands Med-Tech within /beyond SIPP

WP2: Co-Creation will drive efficient design/development/adoption of regional Med-Tech innovation by working with patients, citizens, regulators, policy makers and supply chains to ensure existing and novel Med-Tech products meet stakeholder needs and regulatory requirements

WP3: Enabling Assets will deliver an effective, sustainable ‘front-door’ to the region’s outstanding academic, clinical and industry assets, supplementing these in targeted areas (prototyping, manufacturing, NHS industry-ready “data safe haven”) unlocking business growth

WP4: Capabilities & Clustering will nurture our regional skills pool, networks and leadership capabilities across industry, academia and NHS, while promoting cross-sector insights, streamlined service access and coordinated programmes for private investment

TOTAL UKRI FUNDING REQUEST

£32.6 million

MATCHED FUNDING

£21.2 million
in kind and cash

LEVERAGED FUNDING

£100 million



EXPECTED ECONOMIC IMPACT ESTIMATES FOR CONNECT BASED ON PLANNED ACTIVITIES/ OUTPUTS HAVE BEEN DEVELOPED CONSERVATIVELY, WITHOUT MONETISING ALL POTENTIAL BENEFITS. UPPER-LEVEL PREDICTED BENEFITS INCLUDE:

- Additional GVA generation of **£78.5 million**, plus additional **£33.5 million** GVA created through matched funding
- Creation of **348 direct jobs** and **870 indirectly**, safeguarding an additional **250 regional jobs**
- Additional regional investment (incl. FDI) of **£98 million**
- Net GVA to region of **£80 million**



CONNECT's design has been highly influenced by the success of our ERDF-supported MD-TEC (Medical Devices Testing & Evaluation Centre) programme, a collaboration between University Hospitals Birmingham NHS Foundation Trust, the University of Birmingham and Aston University which has worked with ~100 companies, primarily within the Greater Birmingham & Solihull Local Enterprise Partnership (GBSLEP) area. We have supplemented this knowledge base with surveys and dozens of interviews ourselves and through partners Medilink; the evidence portfolio underpinning the West Midlands Local Industrial Strategy; and deep-dive market analysis through Hatch-Regeneris to establish clear rationales for interventions.

CONNECT aims to bridge the gap between current regional industry capabilities with the scale of innovation opportunity. OLS S&O data indicates that of the 487 West Midlands-based Med-Tech companies, only 98 are R&D-active. There are major relative business strengths in areas such as in-vitro diagnostics, wound care and orthopaedics, while significant academic/ clinical opportunity lies in areas such as advanced therapies (Midlands-Wales Advanced Therapies Treatment Centre; Trials Acceleration Programme), health data (Health Data Research UK Midlands Site and two Digital Innovation Hubs) and diagnostics (largest UK Genomics Laboratory Hub and Genomic Medicine Centre, plus novel approaches such as UK Quantum Technology Hub and West Midlands 5G "testbed" status). By bridging these research, development and innovation strengths and opportunities across the industry/ academic/ clinical spectrum, CONNECT will:

- Nurture those businesses already innovation-active;
- Support and expand the sector by working with current non-innovation-active companies while leveraging and linking innovation and expertise in other strong regional sectors such as manufacturing supply chains and digital SMEs;
- Create new businesses by exploring the potential of new technologies such as quantum and blockchain in novel Med-Tech applications.

GROWTH /PRODUCTIVITY AMBITIONS

CONNECT, led by City-REDI in partnership with WMCA, undertook a thorough analysis of growth ambitions within the LIS context. Current West Midlands Life Sciences sector (Med-Tech being the dominant component) contribution is 4.9% of UK businesses, £7.5 billion GVA and 315,000 jobs, with ambitions for sectoral increase by £4 billion GVA and 67.5k jobs by 2030. West Midlands represents the largest growth in businesses of all combined authority areas at +53.6% 2011–16. However, challenges remain to achieve GVA growth: specifically, scientific R&D GVA (WM 0.9%; UK 5.8%) and jobs (WM 0.6%; UK 3.1%) lag UK levels.

GVA multiplier-effect research developed by City-REDI highlights R&D investment has highest GVA returns (across all sectors) of all possible interventions. Analysis within our LIS framework shows that potential return for Med-Tech investment is significant, with GVA generated by top 50 sector businesses increasing by 25.8% over 12 months (2016/17) with £172k average GVA/employee, compared to £53k average for the WMCA region, demonstrating critical potential of R&D investment in Med-Tech for regional economic growth.