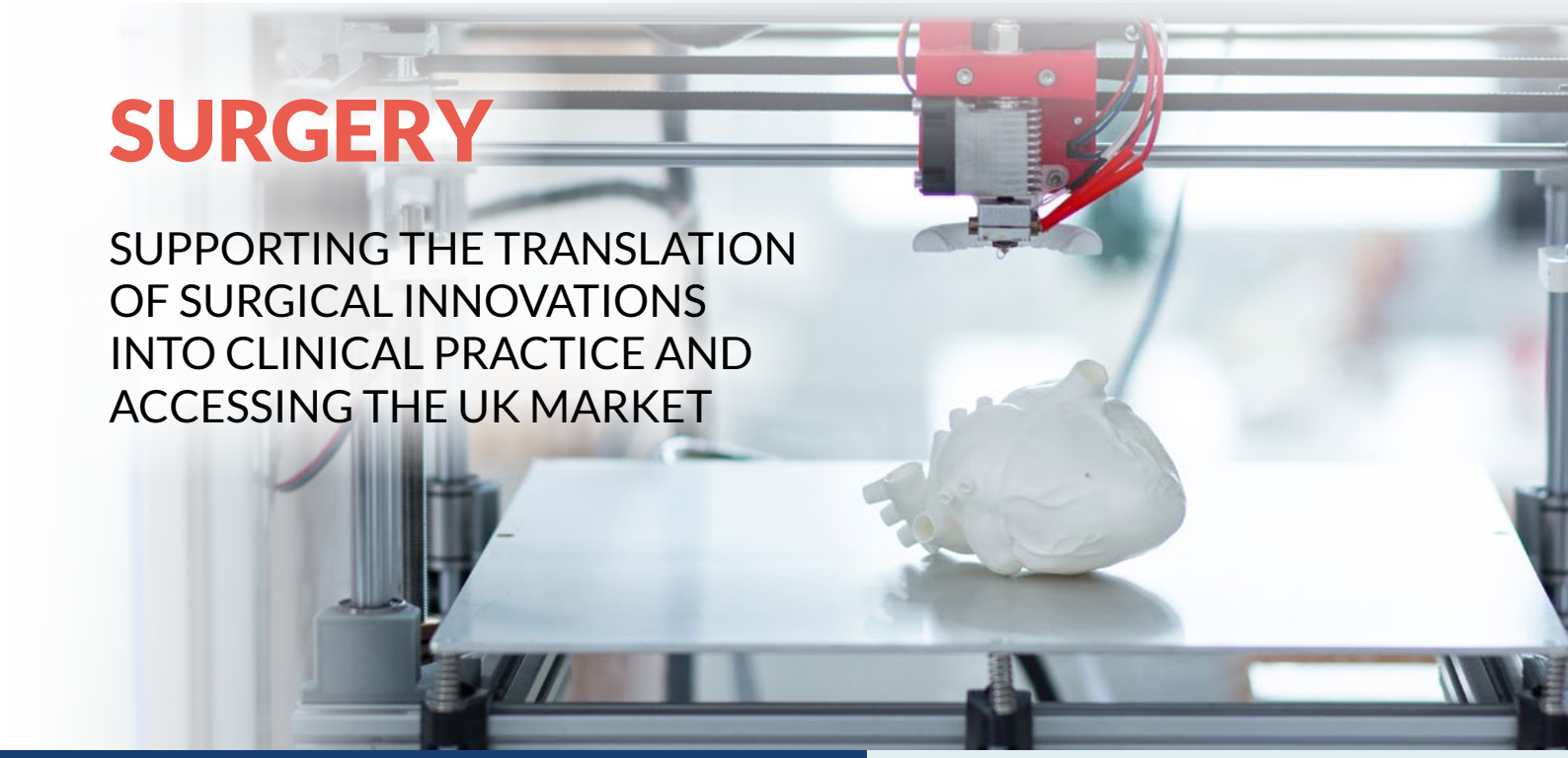
NIHR | National Institute for Health Research



# SURGERY

## SUPPORTING THE TRANSLATION OF SURGICAL INNOVATIONS INTO CLINICAL PRACTICE AND ACCESSING THE UK MARKET

## UK CONTEXT

**Surgery plays a central role in the management of many medical conditions. In cancer treatment alone, surgery treats more patients than any other modality. Around 4.7 million hospital admissions involve surgical care every year in the NHS and account for 11.2 million hospital bed-days. The NHS is keen to support the development and adoption of new surgical innovations that benefit clinical practice and patient care. These include innovations that are less invasive, aid faster recovery times and lower risk of harm.**

- More than £40 million has been committed by The Royal College of Surgeons to support over 750 individual trainee surgeons and The College has established dedicated Surgical Trials Units as well as Surgical Trials Professorships.
- Report of the Commission on the Future of Surgery by the Royal College of Surgeons, highlighted four areas of technology development that are likely to have the greatest impact on surgical care: robot-assisted surgery / minimally invasive surgery; imaging; big data / Artificial Intelligence (AI); and specialised interventions.
- The UK government's Industrial Strategy Challenge Fund puts the UK at the forefront of the artificial intelligence and data revolution.

THE UK'S DEDICATION TO SURGICAL INNOVATIONS LED TO THE DEVELOPMENT OF

**THE WORLD'S SMALLEST SURGICAL ROBOT: VERSIUS**

**OVER 70** UK HOSPITALS CURRENTLY USE SURGICAL ROBOTICS SYSTEMS

**£250 MILLION** INVESTED IN THE NATIONAL ARTIFICIAL INTELLIGENCE LAB TO IMPROVE DIAGNOSTICS AND SCREENING IN THE NHS

WE CAN HELP YOU:

- Access expertise and advice
- Design, set up and deliver clinical evaluation
- Access data and samples
- Access funding
- Gain market access

# ACCESS TO EXPERTISE AND ADVICE

The NIHR has a unique overview on the strengths, capabilities and interests of over 25,000 NIHR-supported researchers across our country's leading universities and NHS hospitals. We work closely with the Royal College of Surgeons, assisting companies to access their network of support. Our experts have the knowledge to help you develop your innovation at any stage of its technology readiness level, into the clinic and on towards the market.

WE CAN HELP YOU:

- Connect into the most applicable expertise across the country dedicated to early and late phase evaluation of surgical technologies.
- Gain support in developing your clinical strategy, input into the design of your innovation and in addressing clinical unmet needs.
- Connect with the wider health care system, including regulators, government departments and healthtech clusters; providing advice and support around product and business development within the UK and overseas.

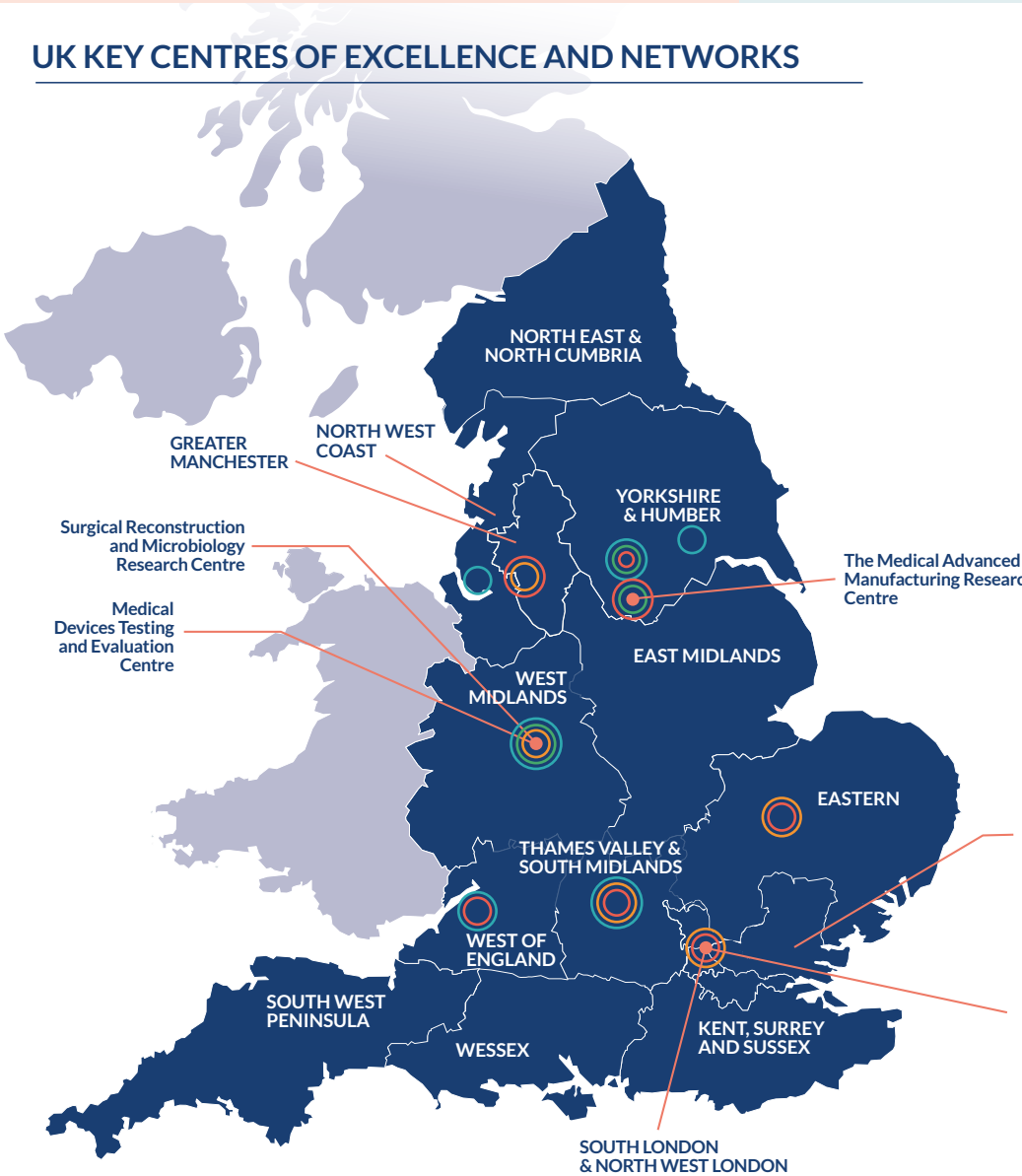
**5 AI CENTRES OF EXCELLENCE**

**ESTABLISHED ACROSS THE UK FUNDED BY NIHR - THAT HAVE THE POTENTIAL TO IMPACT SURGICAL DECISION MAKING AND THE WAY SURGEONS TREAT PATIENTS**

**THE NIHR FUNDS OVER 25 CENTRES OF EXCELLENCE ACROSS THE UK EVALUATING NEW SURGICAL INNOVATIONS**

**THE IDEAL COLLABORATION PROVIDES GUIDANCE FOR IMPROVING RESEARCH IN SURGERY, DEVICES AND NON-PHARMACOLOGICAL INTERVENTIONS**

## UK KEY CENTRES OF EXCELLENCE AND NETWORKS




## KEY OF NIHR CENTRES

**CRN | Clinical Research Network**
Composed of 15 Local Clinical Research Networks that coordinate and support the delivery of high-quality research both by geography and therapy area

Shown on the map as labelled regions

**Biomedical Research Centres**
Hospital/academia partnerships translating lab-based scientific breakthroughs into potential new treatments, diagnostics and medical technologies

**Clinical Research Facilities**
Purpose-built facilities to support life science companies throughout the research process from study design, data collection and trial management

**Medtech and In vitro Diagnostics Co-operatives**
Work with medtech, IVD and digital companies to generate evidence that's required for the adoption of the innovation by the NHS and NICE evidence-based recommendations

**RCS Surgical Trials Centres**

**Other Centres**

**LONDON**

Hamlyn Centre - Imperial College London

NIHR Advanced Surgical Technology Incubator

UK Robotics and Autonomous Systems

Royal College of Physicians

Wellcome / EPSRC Centre for Interventional and Surgical Sciences

Royal College of Surgeons

# DESIGN, SET UP AND DELIVER CLINICAL EVALUATION

Through our networks and centres we can help you set up and deliver both commercial-contract and collaborative research across the UK's NHS, social care and universities. We offer a cost-free service to connect you with the experts to support you to design, set up and deliver high quality research, including first-in-man, early phase and phase III, and achieve dissemination through high impact publications.

WE CAN HELP YOU:

- Generate the evidence required to take your innovation to market; including the application of the IDEAL framework, evidence around safety, efficacy, health economics, human factor and care pathway impact.
- Gain access to the UK's NHS hospitals and leading universities to enable you to deliver research across primary, secondary, tertiary and social care.
- Access cutting edge facilities and some of the world's most advanced clinical tools.
- Work with UK's world-leading experts, public and patient groups in designing and delivering novel and innovative trials to accelerate your research.

**499** NIHR-SUPPORTED STUDIES IN SURGERY RECRUITING OVER 49,000 PATIENTS IN 2019-20

**DEDICATED FACILITIES** SUCH AS THE MEDICAL DEVICES TESTING AND EVALUATION CENTRE SET UP TO ALLOW YOU TO PERFORM SIMULATION-BASED MEDICAL DEVICE TESTING

THE MANUFACTURE OF ACTIVE IMPLANT AND SURGICAL INSTRUMENTS FACILITY SUPPORTS THE MANUFACTURING OF MEDICAL DEVICES FOR USE IN FIRST-IN-PATIENT STUDIES IN THE UK

**THE SURGICAL TECHNOLOGY TESTBED** SUPPORTS MEDICAL TECHNOLOGY COMPANIES WITH EARLY AND LATE PHASE EVALUATION OF SURGICAL TECHNOLOGIES

**6** ROYAL COLLEGE OF SURGEONS SURGICAL TRIALS CENTRES ARE EMBEDDED WITHIN EXISTING SURGICAL CLINICAL TRIALS UNITS WHICH ENABLE SURGEONS TO ASSESS NEW SURGICAL TECHNIQUES

# ACCESS TO DATA AND SAMPLES

Our single, national healthcare system provides care from birth to old age with one unique NHS number per patient. Our ability to connect and access this data is expanding - making the UK home to some of the richest healthcare data in the world. Advances in big data, genomics and AI will enable 'precision surgery' - where treatments can be tailored to patients according to their genetic profile.

WE CAN HELP YOU:

- Access providers of broad and deep datasets from across primary and secondary care.
- Access data on large and diverse populations covering the complete life course.
- Connect into our leading researchers and centres to access specific datasets and highly characterised clinical samples.
- Connect into partner organisations, including biobanks and specialist centres to support you in developing your innovations.
- Access additional multiple clinical trial cohorts, outcomes data and informative biorepositories for translational research.

GENOMICS ENGLAND: 100,000 GENOME PROJECT – SEQUENCING 100,000 WHOLE GENOMES FROM NHS PATIENTS WITH RARE DISEASES AND THEIR FAMILIES, AS WELL AS PATIENTS WITH COMMON CANCERS

**UK BIOBANK: 100,000 PARTICIPANTS** WILL UNDERGO MULTI-MODAL IMAGING SCANS TO BE COMBINED WITH EXISTING DATA

**CLINICAL PRACTICE RESEARCH DATALINK** ACCESS TO PRIMARY CARE DATA FROM 50 MILLION PATIENTS, LINKED TO OTHER DATASETS TO PROVIDE A LONGITUDINAL, REPRESENTATIVE UK POPULATION HEALTH DATASET

**HEALTH DATA RESEARCH UK AND NHS DIGITAL** ENABLE DISCOVERY AND ACCESS TO MANY UK HEALTH DATASETS

# SUPPORT IN GAINING ACCESS TO FUNDING

Gain access to a variety of funding programmes from the NIHR and our partners to help support the translation and evaluation of your innovation within the clinic supported by connections to expertise in appropriate study design and methodology.

WE CAN HELP YOU:

- Access NIHR funding to support your development programmes from proof of concept through to real world evidence generation.
- Identify partner funding programmes to support basic research and business grants.
- Connect with leading researchers and centres to partner with you in your funding applications.
- Link into the UK's world-leading investment community.

## 10 NIHR FUNDING PROGRAMMES

**THAT CAN SUPPORT SURGERY RESEARCH, TO WHICH COMPANIES CAN APPLY AS LEAD OR CO-APPLICANTS**

**OVER £40 MILLION** HAS BEEN INVESTED BY THE NIHR FUNDING PROGRAMMES IN SURGERY RELATED PROJECTS IN 2018-19

## £140 MILLION

**AWARDED THROUGH THE AI IN HEALTH & CARE AWARD TO SUPPORT COMPANIES ACCELERATE THE TESTING AND EVALUATION OF THE MOST PROMISING AI TECHNOLOGIES**

**OVER £25 MILLION** HAS BEEN INVESTED BY UKRI ON SURGERY RESEARCH, TRAINING AND STUDENTSHIP IN 2018-19

# MARKET ACCESS

The UK recognises the goals and opportunities of market access, ensuring the best innovations get adopted and disseminated across the health system.

WE CAN HELP YOU:

- Link into organisations that can support you in developing your value proposition and help you access NHS procurement at a regional and national level.
- Connect into organisations that can guide you through the evidence requirements for adoption, and the process of procurement and reimbursement.
- Connect into organisations that can support you grow your business within the UK.

**NICE'S OFFICE FOR MARKET ACCESS SUPPORTS COMPANIES THROUGH IDEATION, REIMBURSEMENT AND ADOPTION IN THE UK**

## SINGLE ROUTE INTO THE NATIONAL MARKET:

**NHS SUPPLY CHAIN NEW ROBOTIC FRAMEWORK GIVES A COMPLIANT ROUTE TO MARKET FOR ROBOTS USED IN SURGICAL PROCEDURE**

**THE UK'S ACADEMIC HEALTH SCIENCE NETWORK HAS SUPPORTED 2605 COMPANIES WITH 164 OF THESE ENTERING INTO LONG TERM STRATEGIC PARTNERSHIPS IN 2018-2019**

**How to work with us**

If you are looking to access any of the support listed above, please contact us:

**+44 (0)20 3794 7380 | nocri@nihr.ac.uk | @NIHR_Industry | www.nihr.ac.uk/industry**