iiCON
infection innovation
consortium

Infection Innovation Consortium

Saving lives by Supporting Innovation

Annual Report 2021

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Director's Foreword

Two years ago when we started to bring together a Consortium of co-located academic, industry and NHS partners to respond to the UK government Strength in Places call for a place based R&D consortium in any subject area, it was obvious to us that the North West of the UK had a high concentration of expertise in infectious disease, but this was not well integrated.

It was also evident, to those of us working in this area, that the infectious disease R&D pipeline was in poor shape and heavily reliant on bringing new products to market in way that was ineffective. These issues were apparent for drugs, antibiotics, vaccines, diagnostics and public health insecticides.

The Consortium came together to pool our expertise to develop new R&D platforms, these aimed to radically reduce the cost and improve the speed at which new products could be brought to market. The platforms addressed major roadblocks in product development, from early-stage discovery to post-licensure market placement.

Recognising the common issues faced by multiple product classes, the platforms, where possible, were designed to be disease agnostic and able to pivot rapidly to handle any infectious disease prevention or treatment product. Pre-application we tested the assumptions that these platforms would be attractive to industry ranging from very small SMEs to large multi-national companies and had an overwhelmingly positive response.

The major goals of our Consortium are ultimately to have a significant impact in reducing the transmission and health impacts of infectious disease globally, while stimulating and supporting the local economy by acting as an anchor for a growing and vibrant infection R&D ecosystem.

When we responded to the call, MERs, Zika and Bird Flu were obvious examples of recent epidemics, but COVID-19 was not on anyone's radar. By March 2020, when we heard we had been successful, the COVID pandemic had started. Our UKRI contracts were not signed until Sept 2020, but the Consortium partners, industrial and philanthropic backers sprang into action in March, getting some of the more urgent activities going for platforms that were able to pivot to handling COVID-19 related products.

The world now recognises that the premise on which we founded iiCON is correct, and when appropriate technologies are used, multi-disciplinary groups work seamlessly together, and the interface between innovators, regulators, governments and normative agencies is effective, it is possible to rapidly get vaccines, diagnostics, sanitation and hygiene products from early stage discovery to products that are in large scale use. iiCON is proud to have played a key role in bringing examples of products in all of these sectors to market within the first year of our existence.

The partners have all worked collaboratively and efficiently despite the issues of lock down that we have all had to face. As you can see from our first Annual Report we have vibrant activity across all our R&D platforms, our networks continue to grow and we have and will continue to be a major strand of the UK's pandemic resilience.

We look forward to working with many of you over the coming year to extend and consolidate R&D activity in infection in a format that will have a positive lasting impact on global, national and regional health.

iiCON Director
Professor Janet Hemingway
CBE

iiCON Overview

A leading global centre for infectious disease R&D, iiCON brings together industry, academia, and the NHS in a collaborative programme

About the Programme

Decades of under-investment in new therapeutics and diagnostics means the world is ill-equipped to respond to the burgeoning challenge posed by infectious diseases, antibiotic resistance, and emerging pandemics.

In response to this challenge, iiCON bridges the gap in the infection innovation ecosystem. A leading global centre for infectious disease R&D based within the North West of England, it brings together industry, academia, and the NHS in a collaborative effort with a clear aim: to save lives globally by accelerating the discovery and development of innovative new treatments, diagnostics, and preventative products for infectious diseases.

iiCON has an exceptional skill base, an understanding of and access to the disruptive technologies needed to bolster the Infectious Disease Therapeutics pipeline, and networks with local, national and international stakeholders.

The consortium has access to patient populations (and pathways for drug and diagnostic evaluation and implementation) in the UK and across Africa, Asia and the Americas. It also offers access to the people, skills and supply-chains to support the journey from drug discovery through to manufacturing and deployment.

A Dynamic Ecosystem

iiCON comprises leading UK organisations focused on infectious disease R&D, including Liverpool School of Tropical Medicine, Liverpool University Hospitals NHS Foundation Trust, Unilever UK, the University of Liverpool, Evotec, and Infex Therapeutics as part of a £173.5 million programme.

The combined infectious diseases, antibiotic and hygiene R&D portfolio of iiCON's six partners currently exceeds £2 billion. The expertise of each partner is highly complementary and covers the full spectrum of product discovery, development, manufacture, marketing and impact assessment – representing a concentration of expertise not replicated anywhere else in the UK.

iiCON is part of a dynamic North West eco-system, with world-leading capability across drug discovery, diagnostics and clinical trials, all the way through to biopharmaceutical manufacturing, within one of the largest biopharmaceutical manufacturing clusters in Europe.

Collaborative Innovation

Operating across ten commercially sustainable specialist research platforms, iiCON's collaborative effort is directly reducing the global burden of infectious disease with a co-ordinated initiative to address key roadblocks in global R&D pipelines and strengthen and regenerate the global anti-infectives supply chain.

The consortium proactively identifies and engages with the most innovative companies working in the sector globally. iiCON forges long-term collaborative relationships with these organisations and facilitates impactful partnerships that accelerate and enable innovative research and product development. This helps to bring the next generation of game-changing new products to market more quickly, safely, and affordably.

The iiCON Network

Overview

iiCON pays close attention to the Infection research and development (R&D) network trends globally. Monitoring the key players, tracking who is moving into the space, and where organisations are based provides vital insight into upcoming opportunities.

At a glance

iiCON has access to a diverse and expansive global network ranging from environmental management consultants in Namibia to multi-national pharmaceutical and agrochemical companies, making it well positioned for global impact in infection.

106

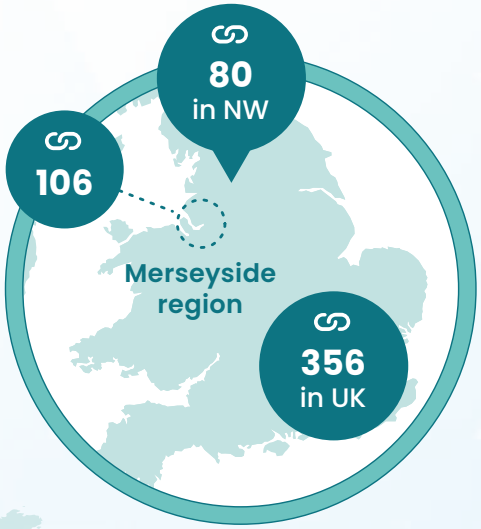
In the Merseyside region

Of the 489 companies iiCON is linked with, **106 have a presence within the Merseyside region** including international organisations such as Bristol Myers Squibb, Vestergaard, and Nippon Sheet Glass.

80

In North-West UK

The consortium is linked with a further **80 companies within North-West UK**, including stakeholders located at Sci-Tech Daresbury and Alderley Park such as the Medicines Discovery Catapult and the Science and Technology Facilities Council.



489
Links in iiCON's global network

74

Working in Infection R&D

When submitting the original Strength in Places application to UKRI, a total of 64 organisations were identified as key players in Infection R&D in the North West. Two of these original companies have since dissolved, however, iiCON has identified a further 74 companies working in Infection R&D. Following interaction with iiCON, medical supplies provider, Excalibur Healthcare Services, has also established a presence in Merseyside.

11

ERDF programme

While many of the companies in our network have a track record of working in Infection R&D, 11 SMEs within the iiCON network were introduced to this area of work through the iiCON's Formulated Materials for Infectious Disease Prevention programme funded by the European Regional Development Fund (ERDF).

170

Global connections

Beyond the North-West, iiCON is currently connected into 170 companies within the Infection R&D space including Ondine, Bayer and Syngenta. On a global scale, iiCON is linked with 129 organisations across Europe (not including the UK), Asia, Africa and the Americas. Notable companies include BASF, Against Malaria Foundation, Bill and Melinda Gates Foundation, Sanofi and Pfizer.

Overall iiCON has been successful in **establishing and strengthening links with all organisation types** playing an active role in Infection R&D.

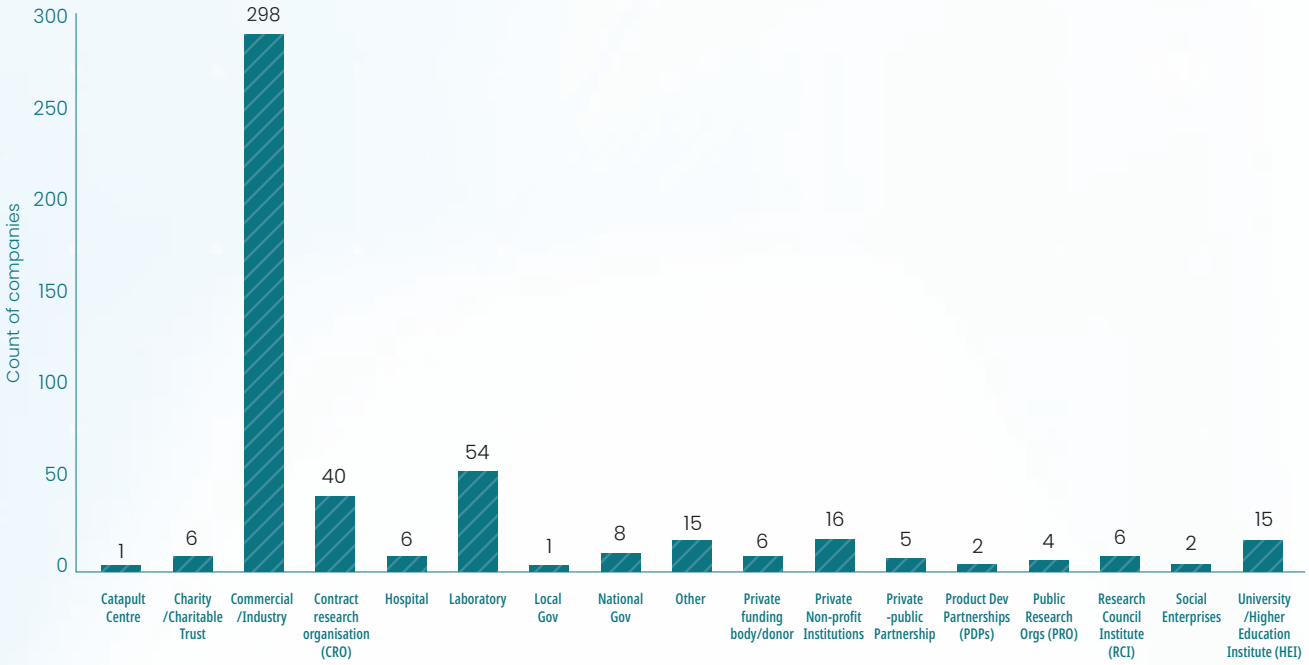
Key partners include:

298
MAJOR COMMERCIAL / INDUSTRY STAKEHOLDERS

40
CONTRACT RESEARCH ORGANISATIONS

54
LABORATORIES

iiCON Impact – Organisation Type



Strengthening Regional Capacity

NOTE: Some companies work across multiple life-science areas

£233,298

A total of **11 Merseyside based SMEs** have received support through the ERDF funded Formulated Materials for Infectious Disease Prevention programme; with an estimated value of £233,298. Many of these companies have continued their collaboration with iiCON on larger projects.

14 assists

A further **14 SME assists** have been lined up for delivery in the coming months.

£10m

iiCON is invested in supporting regional growth and strengthening capacity for Infection R&D in the North West. To enable this, **£10m** has been secured from sources including MRC and the Liverpool City Region Combined Authority.

Partners

Led by the Liverpool School of Tropical Medicine, iiCON brings together leading UK organisations focused on infectious disease R&D, including Liverpool University Hospitals NHS Foundation Trust, Unilever UK, the University of Liverpool, Evotec and Infex Therapeutics.

The combined infectious diseases, antibiotic and hygiene R&D portfolio of our six partners currently exceeds £2 billion. The expertise of each partner is highly complementary and covers the full spectrum of product discovery, development, manufacture, marketing and impact assessment – representing a concentration of expertise not replicated anywhere else in the UK.

LSTM
LIVERPOOL SCHOOL OF TROPICAL MEDICINE

LSTM

iiCON lead Liverpool School Tropical Medicine (LSTM) is a world leader in the discovery and early development of drug, diagnostic and public health insecticide therapeutics. The first institution in the world dedicated to research and teaching in the field of tropical medicine, LSTM attracts more Gates Foundation R&D funding than any other UK organisation. It has a long history of successful product development with multiple commercial partners and has spun out four companies over the last decade.

LSTM's work in combating diseases such as TB, HIV/AIDS, malaria, dengue and lymphatic filariasis is supported by a research order book of well over £210 million. It has a £600 million partnered R&D portfolio, which includes 30 industrial collaborations, one major Product Development Partnership (IVCC), and a shared Phase 1 Clinical trials unit with Liverpool University Hospital Foundation Trust and The University of Liverpool. LSTM has an extensive track record of establishing public-private partnerships and is working with major organisations in infection including the World Health Organization, the Department for International Development, and The Bill & Melinda Gates Foundation.

Its worldwide reputation and the calibre of its research outputs has secured funding to lead over 10 international consortia and product development partnerships aimed at reducing or eliminating the impact of diseases upon the world's poorest people. Its state-of-the-art facilities continue to develop new drugs, vaccines and pesticides which puts LSTM at the forefront of infectious disease research.

NHS
Liverpool University Hospitals
NHS Foundation Trust

Liverpool University Hospitals NHS Foundation Trust (LUHFT)

Liverpool University Hospitals NHS Foundation Trust (LUHFT) runs Aintree University Hospital, Broadgreen Hospital, Liverpool University Dental Hospital and the Royal Liverpool University Hospital. Bringing together a combined workforce of over 12,000 staff, the Trust serves a core population of around 630,000 people as well as providing a range of highly specialist services to a catchment area of more than two million people in the North West region and beyond. It has an annual turnover of more than £1billion.

The NIHR Royal Liverpool and Broadgreen Clinical Research Facility (CRF) opened in 2009 and is embedded within the Royal Liverpool University Hospital. It has been MHRA Phase 1 Accredited since 2013. The CRF consists of 12 beds and is primarily designed to support and conduct early phase academic and commercial clinical trials in patients and healthy volunteers across a wide variety of disease areas, including infection and most recently, COVID-19. The Liverpool Life Sciences Accelerator is a collaboration between the Trust and Liverpool School of Tropical Medicine (LSTM). This co-locates Life Sciences companies which support the NHS research agenda, with LSTM and the Trust, and provides patient access to the latest healthcare innovations.

As an iiCON partner, LUHFT facilitates collaboration and partnership working between clinical, research, and industry partners in a clinical setting. This supports the development of innovative novel therapeutics and diagnostics through access to world-class expertise and facilities, particularly high-quality first-into-human clinical trials.

Unilever

Unilever is one of the world's largest consumer goods companies, known for famous brands and driven by the purpose to make sustainable living commonplace. Unilever invests €800 million into innovation every year to enable their global team of 5,000 R&D experts to make new breakthroughs for everyday products that care for the planet and improve people's health, confidence and wellbeing.

As part of iiCON, Unilever's R&D teams study health and hygiene, and how to prevent the transmission of infectious diseases. The scientific discoveries in this space translate into new innovations in consumer products, benefitting millions of people around the world. This research collaboration between iiCON and Unilever has already yielded success in rapidly confirming the positive performance of mouthwashes against SARS-CoV-2 and sharing these results with consumers and professionals, with the ongoing research pipeline promising further discoveries.

Infex Therapeutics

Infex Therapeutics is a specialist translational development SME focused on WHO critical priority drug-resistant pathogens. Infex acquires, develops, and licenses innovative new antibiotic and antiviral programmes, with UK and international SMEs and pharma companies. Its mission is to ensure that all new, novel and needed drugs can get to market in the shortest possible time. It has agreements with UK, Swedish, US and Japanese partners to bring drug programmes into clinical trials in partnership with the NHS in Liverpool. Infex aims to capture significant long-term value from future commercial sales around the world.

Evotec

Evotec is a life science company with a unique business model to discover and develop highly effective therapeutics and make them available to the patients. The company's multimodality platform comprises a unique combination of innovative technologies, data and science for the discovery, development, and production of first-in-class and best-in-class pharmaceutical products. Evotec utilises this "Data-driven R&D Autobahn to Cures" for proprietary projects and within a network of partners including all Top 20 Pharma and over 800 biotechnology companies, academic institutions, as well as other healthcare stakeholders. Evotec has strategic activities in a broad range of currently underserved

therapeutic areas, including neurology, women's health, as well as metabolic and infectious diseases.

Evotec is committed to meeting patient needs in the field of infectious diseases and with partners, is advancing a broad portfolio of programmes targeting key pathogens in the areas of virology, mycology and antibacterials. In addition to these strategic activities, Evotec provides bespoke research and development solutions in the anti-infective disease area ranging from target identification to investigational new drug ("IND") applications, with an established leading-edge platform enabling the discovery and development of new therapies and therapeutic approaches to treat and prevent serious and life-threatening infections in multiple classes of anti-infective agent including small molecules, natural products, peptides, antibodies, other biologics and vaccines.

In September 2020 Evotec joined iiCON as a co-founding member, bringing with it extensive expertise reaching far beyond conventional antimicrobial agents, into alternative modalities such as targeting virulent attributes, specific pathogen antibodies, combination therapies, antimicrobial peptides and phage technologies. In addition, Evotec adds a highly successful track record in collaborative funding applications in both Europe and US.

UNIVERSITY OF LIVERPOOL

The University of Liverpool

The University of Liverpool is one of the UK's leading research institutions and a centre of world-class teaching and learning. A member of the prestigious Russell Group of the UK's leading research universities, Liverpool has over 5,600 staff and an annual turnover of over £583.5 million.

The university is globally recognised for its research in health and life sciences, science and engineering, and humanities and social sciences. Its interdisciplinary research centres include the National Centre for Zoonosis Research and the Stephenson Institute for Renewable Energy.

As an iiCON partner, The University of Liverpool supports and enables industry innovation with state-of-the-art infrastructure and expertise for the development of new experimental models of infection, antimicrobial drug development, and construction of comprehensive pharmacokinetic-pharmacodynamic (PK-PD) packages that are required data packages for new drug registrations.

The University's Materials Innovation Factory is a joint venture co-developed with Unilever. The Open Innovation Hub for Antimicrobial Surfaces, with multiple commercial contracts, is already recognised as a major driver of surface science and biofilm technology within the UK and brings unique formulation capacity to the Consortium.

The University also supports access to advanced nanotherapeutics expertise through The Nanotherapeutics Hub (NTH) at the Centre of Excellence for Long-acting Therapeutics (CELT).

IMPACT: Enabling Innovation

iiCON is driving innovation – supporting discovery and commercial development at all stages of the innovation journey and pivoting platforms to respond to public health needs nationally and globally.

24

collaborations with industry

Pfizer · Unilever · Ministry of Defence · EXCALIBUR Healthcare Services

11

SMEs

Eleven SMEs have been supported through iiCON's ERDF Merseyside SME Support Programme.

12

Twelve products are mid-way through the development pathway.

7

Seven products have reached patients and consumers.

IMPACT: Health Impact

iiCON's work is helping to shape and informing global health policy decision making.

Shaping Global Guidelines

- MHRA approval for the use of Excalibur Healthcare Services' SARSCOV-2 Antigen Screening Test – Datasets generated by iiCON were used to obtain national operational use approval in the UK.
- iiCON partner Infex's Executive Director, Dr Peter Jackson was an expert advisor for developing guidelines to control antimicrobial resistance.
- Oxford-AstraZeneca Covishield COVID-19 human vaccine – Datasets generated by iiCON were used for international approval of the vaccine against COVID.
- Unilever gained access to the Indian market with its CPC Technology Mouthwash, which was shown to be effective in reducing the viral load of SARSCOV-2 in a study led by iiCON.
- iiCON partner Infex's Executive Director, Dr Peter Jackson was a senior advisor on the Milken Institute's FasterCures think tank report "A Global Early Warning System for Pandemics".
- Following support gained through iiCON's ERDF Merseyside SME support programme, Nano Biosols has filed for a patent for novel technology that enhances the sensitivity of lateral flow tests.

Informing WHO Malaria Prevention Policy

iiCON has conducted important research and large-scale trials into the protection offered by insecticide treated mosquito nets. This work has shaped the World Health Organisation's (WHO) recommendations for malaria prevention. The iiCON led trial found that Piperonyl Butoxide long-lasting insecticide treated nets (PBO LLINs) offered more protection against malaria than conventional non-PBO LLINs over a period of up to 25 months. Following this important work, more than 30% of the millions of treated mosquito nets distributed in Africa in 2021 were PBO nets – helping to protect communities and save lives.

IMPACT: Health Impact

iiCON has played a key role in the global COVID effort, helping to save lives across the globe through pioneering infection innovation.

Supporting industry in the global COVID effort

iiCON was the Northern Hub for the Phase III **Oxford-AstraZeneca** Covishield COVID-19 human vaccine trial and successfully recruited the largest cohort of volunteers for testing nationally.

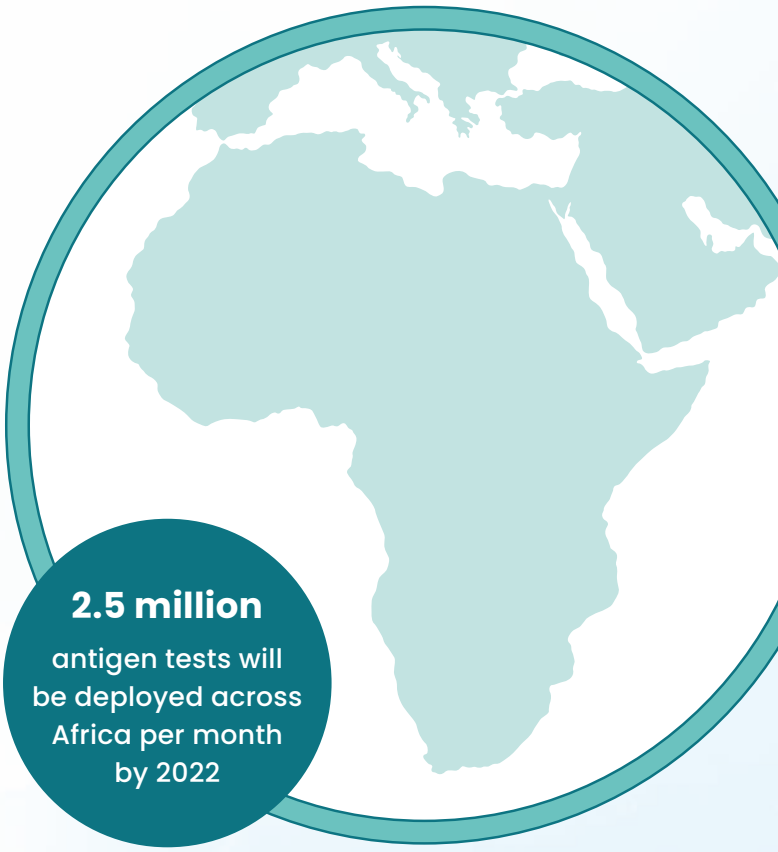
iiCON validated the first Covid-19 lateral flow test for asymptomatic, presymptomatic and symptomatic COVID-sufferers, securing Medicines & Healthcare Products Regulatory Agency approval for **Excalibur Healthcare Services'** COV-2 Antigen Screening Test.

iiCON supported the **Ministry of Defence** with rigorous testing to validate Virusend, a disinfectant that inactivates coronavirus in 60 seconds. This was used by military personnel across UK test sites.

An iiCON study by LSTM and **Unilever**, showed that mouthwash using CPC Technology could reduce the transmission of coronavirus. This fast-tracked an accessible new consumer product to market.

A new experimental model to more accurately replicate the impact of respiratory infections on the lungs and upper airways was developed with **Newcells Biotech**, supporting the BioPharma industry in pre-clinical drug discovery.

Working with iiCON's ERDF SME Support Programme, Merseyside SME **Bio Data Networks Limited** developed a new device that aims to detect outbreaks of COVID-19 and other infectious diseases across communities through a sewage monitoring system. While another Merseyside company **MAST** was supported to take its COVID-19 diagnostic test through the development pathway. This is now available on the market.



Supporting the COVID-19 effort across Africa

High-quality, cost-effective antigen tests are critical to identify infection and stop the spread of the virus.

A rapid COVID-19 antigen test, validated by researchers at LSTM through iiCON is being used to deliver large-scale testing across Africa as part of a major FIND and UNITAID programme. The test provides a high-quality, affordable solution to protect some of the world's most vulnerable communities.

The consortium is working with the Malawian Government and the Wellcome Trust to provide high-quality data on the COVID variants that are spreading, shaping the country's COVID-19 policy response.

Our Team

Professor Janet Hemingway
iiCON Director

CBE, FRS, DSc, PhD, BSc, NAS (Foreign Associate), FMedSci FRCP (Hon), FRES (Hon), FAAM

Founding Director of iiCON and Professor of Tropical Medicine at LSTM, Professor Hemingway was appointed the Director of LSTM in 2001 and stepped down in 2019 having overseen a period of exceptional growth of the organisation. This included the awarding of Higher Educational Institution Status & Degree Awarding powers to LSTM. She was awarded the Commander of the British Empire (CBE) for services to the Control of Tropical Disease Vectors 2012.

She is a senior technical advisor on Neglected Tropical Diseases for the Bill and Melinda Gates Foundation (BMGF) and has 40 years' experience working on the biochemistry and molecular biology of specific enzyme systems associated with xenobiotic resistance. She has been PI on projects in excess of £200 million including the BMGF funded Innovative Vector Control Consortium, the ERDF funded Formulations programme and the BMGF funded Visceral Leishmaniasis Elimination programme.

Andrea Fyfe
Executive Assistant

Executive Assistant to Professor Janet Hemingway, Andrea joined LSTM in 2017 working with Professor Hemingway in her capacity as Director of LSTM and joined iiCON in 2019.Andrea brings a wealth of experience in EA support and business administration to Janet and the wider iiCON team. She is instrumental in organising key events and high-profile visits.

PHONE: **0151 705 3128**
EMAIL: **Andrea.Fyfe@lstmed.ac.uk**
POST: **iiCON**
Liverpool Life Sciences Accelerator,
1 Daulby Street,
Liverpool
L7 8XZ

Dr Becky Jones-Phillips
Senior Business Development Manager

Becky leads commercial business development for iiCON's UKRI Strength In Places programme. She establishes new commercial and strategic relationships for translational research and in promoting the research agenda of LSTM to external audiences. With a PhD in infectious disease immunology, she has over 10 years' experience in national business development strategy and implementation in the immunodiagnostics sector. She brings significant experience and expertise in commercial negotiations and industry engagement through innovative business development strategy and dynamic market landscaping.

EMAIL: Becky.Jones-Phillips@lstmed.ac.uk

Dr Lisa Baldwin
Senior Business Development Manager

Lisa leads iiCON's ERDF-funded Merseyside SME Support Programme and supports iiCON's portfolio in diagnostics. She began her career in industry developing point of care diagnostics tests and then worked on novel antibacterial formulations. Her PhD in Immunology focused on adverse immune responses to implanted biomaterials. She was selected as a Faraday Lecturer and toured the country promoting science. She has since led the Liverpool City Region's life science sector development and has worked in academia supporting academic-industry partnerships.

EMAIL: Lisa.Baldwin@lstmed.ac.uk

Ruth Cobban
Communications Manager

An experienced communications practitioner with a background in regional news journalism, Ruth leads communications for iiCON. A former Account Director at a leading independent communications agency, she has over 10 years' strategic communications experience directing and delivering high-impact multi-platform campaigns for national brands across sectors including property, life sciences, and inward investment.

PHONE: 07814 556 567
EMAIL: Ruth.Cobban@lstmed.ac.uk

Rinki Deb
Senior Programme Manager

An experienced Senior Programme Manager with over 12 years' experience working on translational and operational research projects in public health, and product development for vector control tools, Rinki manages the iiCON portfolio and provides technical leadership to two Bill and Melinda Gates Foundation (BMGF) funded projects. She has a strong technical background in molecular biology, medical parasitology and project management and a proven track record of managing complex multi-sectoral, international partnerships. She has worked on several FCDO, Wellcome Trust and BMGF funded global public health programmes.

EMAIL: Rinki.Deb@lstmed.ac.uk

Shelley Lewis
Finance Project Manager

With over 20 years' experience in finance and project management, Shelley is iiCON's Finance Project Manager and supports the ERDF and UKRI Strength in Places programmes. Her experience includes working within Research Management Services at LSTM, providing support for submission of research funding applications to a variety of national and international funders. Prior to LSTM, she worked across several finance roles at the University of Central Lancashire (UCLan) over a number of years, monitoring and reporting of large faculty school accounts, grant awards and contracts.

EMAIL: Shelley.Lewis@lstmed.ac.uk

Trainee Programme Managers:

- **Dr Chloe Pugh**
- **Jordan Hamilton**

Our Platforms: Supporting Innovation

Operating across iiCON's ten open-access specialist research platforms, we remove barriers to market by providing companies access to world-leading research expertise, market intelligence, and cutting-edge facilities. This supports every stage of the discovery journey from discovery to adoption.

1 Discovery

Our early-stage-discovery platforms offer sophisticated expertise & facilities to support world-leading innovation. This knowledge & capability enables the discovery of innovative diagnostics & antimicrobials, bringing forward transformative novel candidates to combat global challenges including multi-drug resistance.

2 Translation

Our Translation platforms support the development of novel antimicrobials & diagnostics. Specialist support is available to progress novel therapeutics from hits to leads. Highly innovative technologies including nanotherapeutics, innovative humanised tissue & microfluidic models, including organoid systems & Organ-on-a-Chip are accessible to industry to fast-track drug discovery. New drug development pathways are being developed to support the industry effort to combat multi-drug-resistant superbugs.

3 Evaluation

World-class facilities & expertise support product evaluation & validation. Our expertise in Human Challenge trials offers industry co-located research & clinical facilities, with impactful first-in-human trials run by world-leading researchers available for all antimicrobial applications, significantly de-risking the transition into humans. Our platforms also offer validation & verification of non-invasive diagnostics & advanced surface science capability from leading research institutions.

4 Adoption

Our Adoption platforms shape & inform global health policy and support market access, helping to protect communities from diseases including Malaria. Our experts also work closely with industry & policy makers to position health interventions & products to enable maximum public health benefit.

iiCON provides access to ten commercially sustainable specialist research platforms, co-developed and operated by our industrial, academic, and clinical partners.

These specialist platforms provide industry with world-leading research capability and facilities - enabling access to resources and expertise that can transform the product discovery and development journey.

Our open-access platforms bridge the gap in the infection innovation ecosystem to support co-innovation and accelerate the product journey from concept to deployment.

Companies from early-stage start-ups to industry giants have leveraged the expertise and facilities available through the platforms in their discovery and development journeys.

We work with companies at all stages of the innovation journey – from very early-stage conceptual work, through to clinical trials, manufacturing, and market positioning, helping to fast-track new products and treatments to patients and communities.

iiCON's ten specialist platforms

1. **Platform 1:** *Natural Product Library*
2. **Platform 2:** *Hits to Leads*
3. **Platform 3:** *Organoid Models*
4. **Platform 4:** *Advanced PK-PD AMR Modelling*
5. **Platform 5:** *Human Challenge*
6. **Platform 6:** *Diagnostics*
7. **Platform 7:** *Randomised Control Trials*
8. **Platform 8:** *Mapping and Modelling*
9. **Platform 9:** *Nanotherapeutics*
10. **Platform 10:** *ERDF SME Support Programme*

PLATFORM ONE

Future-proofing innovation through a diverse Natural Product Library

> *This platform offers industry early access to one of the world's largest and most diverse, and completely novel Natural Product Libraries, developed by the Liverpool School of Tropical Medicine (LSTM).*

Designed to drive innovation and support companies of all sizes on the discovery journey, this platform offers industry early access to one of the world's largest and most diverse, and completely novel Natural Product Libraries, developed by the Liverpool School of Tropical Medicine (LSTM).

This vast, untapped pool of thousands of environmental, bacterial, and fungal isolates has the potential to shape the next generation of transformative novel antimicrobial products and therapies.

The library is designed in a modular format to improve usability and increase efficiency. This enables a targeted approach, where specific isolate groups can be screened quickly and cost-efficiently. World-class end-to-end expertise and after-care from the expert team at LSTM ensures companies are supported at every stage of the discovery journey.

Expert antimicrobial product development support, validation, and consultancy is also available to industry partners at the early stage of the product development journey.

Platform Lead

Dr Adam Roberts
Reader, Antimicrobial Chemotherapy and Resistance, Liverpool School of Tropical Medicine

PLATFORM TWO

Tomorrow's treatments: Accelerating early-stage drug discovery

> *The new therapeutics being progressed address dangerous multi-drug-resistant infections that are a key threat to global health.*

Accelerating the development of new, innovative antibiotics that can combat deadly resistant infections, iiCON supports SMEs through the early-stage drug discovery pathway to progress candidates from Hits to Leads (H2L) through this platform led by Infex Therapeutics.

The platform provides a subsidised, cost-effective mechanism to progress novel programmes for some of the world's most dangerous infectious diseases, including Gram-negative WHO critical-priority pathogens, and viruses such as Sars-COV2 through the Hit to Lead development phase.

The generation of high-quality data needed to progress from Hit to Lead is vital for companies to demonstrate the potential of their key anti-infective drug programmes. However, due to the high risk of failure of early-stage programmes, it is often very difficult for SMEs to secure the necessary funding to provide such data.

If the platform programme is technically successful, it will provide partner SMEs with one or more validated lead series of compounds that will enable them to obtain further funding to progress their projects to the next stage: Lead Optimisation. At this stage, there are opportunities to secure non-dilutive grant funding, obtain other private investment, for example via venture funds, or enter deals to partner or license their molecules. Infex Therapeutics can also offer a potential route for SMEs to co-develop or license, subject to further agreement.

Case study

Bringing forward novel therapies for deadly resistant infections

iiCON partner Infex Therapeutics is progressing two novel therapeutics to tackle dangerous multi-drug resistant infections into clinical trials over the next 12 months as part of a programme supported by iiCON.

Based at Alderley Park, Infex translates research into novel therapies. The organisation acquires, develops and licenses innovative drugs to treat pandemic infections. It has developed a broad portfolio of new therapies to meet the rising burden of critical priority infectious diseases.

The company's immune-infection RESP-X programme, which targets serious recurrent respiratory infections in patients with damaged lung functions, is expected to enter clinical trials in November 2021. Infex also plans to bring its resistance bypass therapy MET-X, which is currently undergoing manufacture, to clinical trials stage in late 2022 following toxicology screening and stability testing.

> *Infex Therapeutics is working at the cutting-edge of drug discovery and development. We're incredibly excited to see the outstanding progress they are making in the journey to develop these important novel therapies in response to the global antimicrobial resistance (AMR) challenge.*
>
> **Professor Janet Hemingway**

Working in partnership with fellow iiCON member, the Liverpool University Hospitals NHS Foundation Trust, Infex will leverage the clinical trials expertise at the NIHR Liverpool and Broadgreen Clinical Research Facility based at the Royal Liverpool University Hospital, where both therapies will be tested.

The two new medicines that Infex Therapeutics are progressing address dangerous multi-drug-resistant infections that are a key threat to global health. iiCON has supported Infex Therapeutics to accelerate these novel therapies to clinical trial stage – helping to expedite the journey of these much-needed new treatments to market.

Professor Janet Hemingway, iiCON Director, said: *"Infex Therapeutics is working at the cutting-edge of drug discovery and development. We're incredibly excited to see the outstanding progress they are making in the journey to develop these important novel therapies in response to the global antimicrobial resistance (AMR) challenge.*

"Supporting impactful co-innovation and collaboration between the NHS, industry, and academia is at the core of iiCON's mission. Nurturing and enabling the innovation emerging from industry is key to our commitment to revitalise and strengthen the pipeline of new treatments for infectious diseases."

Platform Lead

Dr Derek Lindsay
Chief Operating Officer,
Infex Therapeutics

PLATFORM THREE

Pioneering technologies to fast-track and de-risk advanced drug development

This highly innovative platform led by the Liverpool School of Tropical Medicine offers industry access to pioneering technologies which support the development of game-changing novel therapeutics.

A range of sophisticated technologies including innovative humanised tissue & microfluidic models, are available to industry to fast-track drug discovery. Any infection can be rapidly screened, and our repository of human tissue models enables more precise assessment of therapeutic impact and efficacy – helping to de-risk development and support innovation.

Organ-on-a-Chip (OOC) technology is transforming industry's approach to drug development and precision medicine. In a pioneering development in infection R&D, iiCON provides access to OOC technology that enables companies to bypass in-vivo studies and connect multiple organs, creating holistic models that enable faster, more accurate drug development.

> *Our repository of human tissue models enables more precise assessment of therapeutic impact and efficacy – helping to de-risk development and support innovation.*

iiCON's platform is establishing human 2D cell systems and 3D human spheroids/organoids infected with clinically relevant human pathogens. The screening platform will be capable of supporting pre-clinical investigation of human pathogens (including coinfections such as HIV/TB) within a human host environment. This will significantly improve translation of pre-clinical studies to clinical disease – creating a much-needed platform for the screening of virulent -intracellular pathogens.

This expedites the drug development journey and significantly de-risks late-stage clinical efficacy failures - creating a bridge to Controlled Human Infection Models and/or Phase I and Phase II clinical trials, accelerating product registration and commercialisation and introducing new drugs to market.

Case study

iiCON partnership develops new organoid infection model

A new experimental model that more accurately replicates the impact of respiratory infections on the lungs and upper airways has been developed through an industry academic partnership supported by iiCON.

Through iiCON-supported innovation brokerage, a new collaborative partnership was formed between investigators based at LSTM and Newcells Biotech, a Newcastle based provider of in vitro models supporting the BioPharma industry in pre-clinical drug discovery.

> *This study is a brilliant example of the co-innovation and collaboration that iiCON embeds to support the creation of new drugs, vaccines, and diagnostics that will help to tackle future pandemics, combat resistant infections, and ultimately, lessen the global burden of disease.*
>
> **Professor Janet Hemingway**

The partnership established and validated an experimental lung and upper airways organoid SARS-Cov-2 infection model. The model replicates the physiology of respiratory infections, including coronavirus, more closely and is part of a broader diverse range of research and innovation initiatives led by iiCON.

Professor Giancarlo Biagini, iiCON Platform Lead and Head of the Department of Tropical Disease Biology at LSTM, co-developed the SARS-CoV-2-lung organoid infection model with colleagues at LSTM including Dr Grant Hughes.

The model will provide a more accurate and physiologically relevant picture of the impact of coronavirus and other upper respiratory infections than current in-vitro screening.

Current management of COVID-19 is supportive, and respiratory failure from acute respiratory distress syndrome is the leading cause of mortality. In view of this, there is an urgent and currently unmet need for model systems that can function as high-throughput preclinical tools for the development of novel, effective therapies for COVID-19 and other respiratory infections.

Platform Lead

Professor Giancarlo Biagini
Head of the Department of
Tropical Disease Biology,
Liverpool School of Tropical Medicine

PLATFORM FOUR

Bolstering industry innovation with new models to combat AMR

> *This work supports the discovery and development of novel therapeutics to tackle the world's most critical, multi-drug-resistant infections.*

This platform in molecular pharmacology and pharmacokinetics-pharmacodynamics (PK-PD) led by the University of Liverpool provides new drug development models and approaches to help industry overcome barriers posed by antimicrobial resistance. It supports the discovery and development of novel therapeutics to tackle the world's most critical, multi-drug-resistant infections.

The multi-drug-resistant superbug Acinetobacter baumannii is categorised by the World Health Organisation (WHO) as a critical priority pathogen that is a key threat to human health at a global scale. New drugs are urgently required; however, robust tools to assess these compounds at the early therapeutic lead stage are poorly developed.

To support industrial innovation, we are extending a suite of model systems that enable new therapeutic solutions for Acinetobacter baumannii. These include new model systems of hospital acquired pneumonia, which continues to be associated with unacceptably high mortality.

Platform Lead

Professor William Hope OBE
(FRACP, FRCPA, PhD)
Dame Sally Davies Chair of AMR Research - Director, Centre of Excellence in Infectious Diseases Research - Co-Lead, NIHR Infectious Diseases National Specialty Group University of Liverpool

PLATFORM FIVE

Super-charging industry innovation with agile end-to-end clinical trials

This platform provides single-point-access to an advanced clinical trials package that offers first-into-human testing across a full range of antimicrobial products and treatments – from hygiene and sanitation products, diagnostics, AI wearables and devices, to new therapeutics, and vaccines.

Leveraging the world-leading expertise of Liverpool School of Tropical Medicine (LSTM) and Liverpool University Hospitals NHS Foundation Trust's MHRA Phase 1 Accredited Clinical Research Unit (CRU), this all-in-one solution covers each stage of the trial journey from study protocol design to downstream analysis. This removes the need for companies to call on the expertise of multiple partners or Contract Research Organisations.

iiCON's platform provides access to the expert team at the Accelerator Research Clinic (ARC) led by Professor Daniela Ferreira. The state-of-the-art research facility has 18 beds co-located with adjacent laboratories allowing for high clinical and research standards and enabling rapid processing of samples due to clinic and laboratory proximity and the clinic's expert and experienced team.

> *iiCON's platform provides access to the expert team at the Accelerator Research Clinic (ARC) led by Professor Daniela Ferreira*

Companies undertaking clinical trials also benefit from access to facilities including the largest complement of containment level 3 (CL3) laboratories in the North West and access to a comprehensive BioBank.

Case study

Revolutionising Clinical Trials

The Human Challenge Model enables companies to carry out small scale clinical trials with between 100-300 participants to test the performance and efficacy of their product at a relatively early stage. This model provides companies with high-quality insight on their product's performance and offers the opportunity to assess whether the product needs further development or is ready to advance to large-scale clinical trials. This allows for product testing and evaluation much more quickly and cost effectively than the ordinary product development pathway.

> *This ability to provide single point access to expertise at every stage of the trial journey has significant commercial impact for industry. Uniquely, iiCON has the expertise and facilities available to shape the trial protocol design, secure ethical and regulatory approvals, deliver full clinical trials, and then conduct comprehensive downstream analysis of the trial results. We're not aware of any other facility globally that is able to offer this range of capability and end-to-end expertise.*
>
> **Professor Daniela Ferreira**

Testing the efficacy of a drug early in the development pipeline using human challenge models provides reassurance to developers and make it less likely the product will fail in the later stages of development, particularly the large Phase III trials. This reduces overall costs in the product development phase and companies can test multiple candidates and combinations, conducting tests with a hundred participants at a fraction of the cost of larger Phase III trials.

Human Challenge trials are also an important tool in the context of anti-microbial resistance – where more targeted treatments are needed. Having access to rapid testing to refine and shape therapeutics to enhance precision and impact is crucial to combat resistance and avoid over-prescribing of antibiotics. Specialist Human Challenge trials currently taking place, for example, are able to measure the concentration of drug activity in the lungs of patients to quantify optimal dosage and avoid unnecessary medication. The ARC is currently utilising the Human Challenge Facility to conduct Covid-vaccine trials for Oxford AstraZeneca and is working with Pfizer on a five-year clinical trials programme to develop and test pneumococcal vaccines.

The flexible model can also be used to test preventative anti-bacterial and anti-microbial products. For example, the Human Challenge Model was used last year in a collaborative study by Unilever and LSTM's Clinical Sciences team, led by Professor Daniela Ferreira, Head of the Clinical Sciences Department at LSTM. The study provided new data on the use of antibacterial and sanitation products reduce the transfer of pathogens from hands to the body via the face and respiratory tract.

Platform Lead

Professor Daniela Ferreira,
Head of Clinical Sciences Department, Professor of respiratory infection and vaccines immunology at Liverpool School of Tropical Medicine

PLATFORM SIX

Developing innovative diagnostics and exploring anti-infective surfaces

This platform combines the expertise of three regional centres of excellence. It provides industry access to LSTM's broad-based global expertise in diagnostics, break-through sensor technologies developed by Liverpool John Moore's University's BEST Research Institute, alongside world-leading surface analysis capability through the University of Liverpool's Surface Science Research Centre.

Sensor technology with advanced AI analysis is being used to help develop point of use non-invasive diagnostics. These range from the measurement of parasites in peripheral blood to quantification of insecticide concentrations on a range of surfaces. The technology is designed to support the real-world development and evaluation of impactful non-invasive diagnostics to quality assure and monitor infectious disease prevention and treatment in order to better protect communities.

Our programme also helps to develop, evaluate and validate more standard point of care and PCR based diagnostics. Our team offers industry access to world-leading expertise and facilities that support every stage of the product journey, from early-stage concept, through evaluation and regulatory approval, to adoption through our FIND and WHO accredited facility. We work with industry to assess analytical sensitivity and efficacy in real-world settings, providing valuable insights to accelerate optimal diagnostic deployment. Industry partners benefit from a broad diagnostic focus and expertise across a range of platforms including lateral-flow, antibody, antigen, and molecular testing.

World-leading surface design and analysis, through the University of Liverpool's Surface Science Research Centre, is enabling anti-infective and vector control surfaces to be evaluated, optimised and upscaled via knowledge-based engineering. This Interdisciplinary Research Centre features sophisticated surface sensitive spectroscopic and imaging techniques. These allow surfaces to be mapped at the nanoscale level and enables the interaction between technology and biological systems to be studied with precision., Our expertise is available to support industry in leveraging this technology to bring forward innovation in the anti-infective surfaces space.

Platform Leads

Professor Andy Shaw is Head of the Built Environment and Sustainable Technology Research Institute (BEST) in the Faculty of Engineering and Technology at Liverpool John Moores University. He also leads the RF and Microwave (RFM) research theme within the institute.

Dr Ana Isabel Cubas Atienzar is a Post-Doctoral Research Associate at Liverpool School of Tropical Medicine.

Professor Rasmita Raval is a Professor in Chemistry and Director of the Surface Science Research Centre at the University of Liverpool. She is also the Director of 'The Open Innovation Hub for Antimicrobial Surfaces' and is one of the four co-directors of the UK 'National Biofilms Innovation Centre'.

PLATFORM SEVEN

Informing global health policy decision making

> *iiCON has conducted important research and large-scale trials into the protection offered by insecticide treated mosquito nets. This work has shaped the World Health Organisation's (WHO) recommendations for malaria prevention.*

In many low- and middle-income country settings, even after vector control products have regulatory approval, they need to be on a WHO recommended list before donors will make large scale purchases. This often requires large scale epidemiological impact trials, ideally in contrasting transmission settings, that are beyond the budgets of the manufacturers. This can lead to long delays in roll out of potentially-effective new products.

iiCON is pioneering model systems to embed cluster-randomised control trials into large-scale operational programmes, through which it can be demonstrated whether the products are as good as or better than the current recommended products. By reducing the cost and complexity of these operationally-embedded trials and providing key data-led-insight to a broad range of organisations including non-governmental organisations, governments, and non-profit organisations, iiCON provides expertise to support and inform global health policy decisions.

Led by an expert team at Liverpool School of Tropical Medicine, this platform provides robust data to inform global health policy and supports and enables market access, helping to protect communities from diseases including malaria.

This work is already helping to protect communities and save lives by advancing innovative interventions.

Case study

Combatting Malaria in Vulnerable Communities

Mosquito nets are a key weapon in the battle to protect communities from malaria. iiCON has conducted important research and large-scale trials into the protection offered by insecticide treated mosquito nets. This work has shaped the World Health Organisation's (WHO) recommendations for malaria prevention.

The iiCON-led trial found that Piperonyl Butoxide long-lasting insecticide treated nets (PBO LLINs) offered more protection against malaria than conventional non-PBO LLINs over a period of up to 25 months.

The PBO-net trial in Uganda was scrutinised by the WHO Vector Control Advisory Group, resulting in a recommendation for WHO Prequalification to change policy advice for PBO-nets.

Following this important work, 33% of the millions of treated mosquito nets distributed in Africa in 2021 were PBO nets – helping to protect communities and save lives.

Platform Lead

Dr David Weetman
Reader, Liverpool School of Tropical Medicine

PLATFORM EIGHT

Guiding industry intervention and product placement

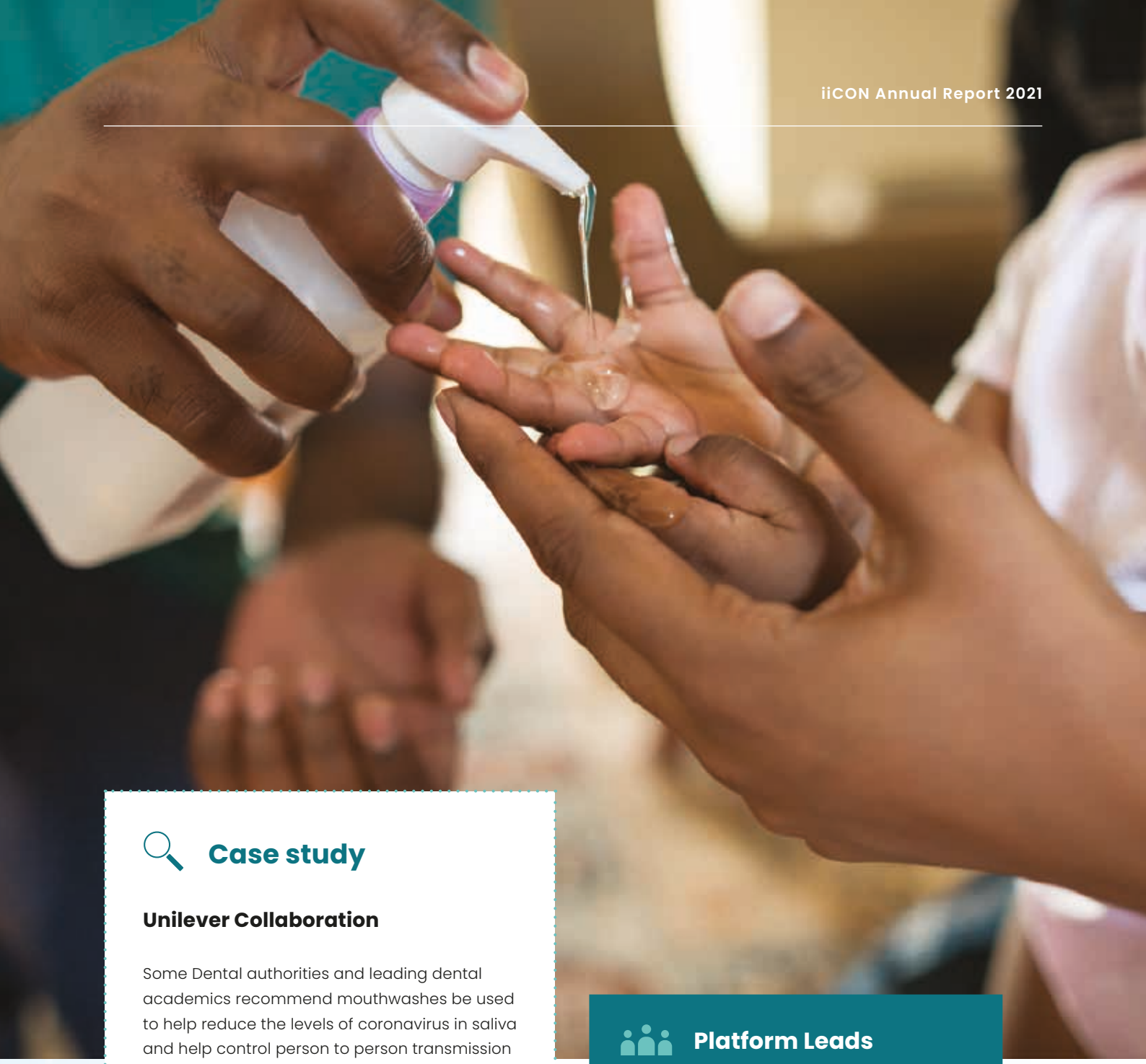
Supporting innovation and product development, this platform provides the expert insight required to optimally position health interventions. Industry partners are able to leverage Liverpool School of Tropical Medicine's world-leading expertise in mapping and modelling of the transmission and dissemination of pathogens at a micro and macro level.

> *Industry partners are able to leverage world-leading expertise in mapping and modelling of the transmission and dissemination of pathogens at a micro and macro level*

This platform offers the facilities and expertise to map and model transmission on a wide range of physiological surfaces, including utilising an in vitro humanised skin model system. This provides a biologically relevant model to address transmission to and from skin without the requirement of a human challenge system.

At the macro-scale, we are looking at the movement of pathogens in different environments. This allows us to experimentally track and support modelling of environmental shedding of bacteria and viruses and track movement through water, air or waste water systems, alongside person-to-person transmission, in a diverse range of socio-economic settings. This enables effective positioning of a broad range of health interventions including clinical, hygiene, and diagnostic products - guiding and equipping industry partners with the understanding needed to shape and position interventions to ensure optimum benefit to patient and communities.

This platform includes activity repurposing current drugs for a range of different health needs. This includes a new indication for a current drug, for use as an innovative treatment for snakebites. If successful this will be the world's first small-molecule ambulatory antivenom treatment, which has the potential to transform the patient journey and save many lives globally.



Case study

Unilever Collaboration

Some Dental authorities and leading dental academics recommend mouthwashes be used to help reduce the levels of coronavirus in saliva and help control person to person transmission of the virus.

As a result, LSTM collaborated with fellow iiCON partner, Unilever, one of the world's largest manufacturers of oral hygiene products, to rapidly assess the performance of mouthwashes against SARS-CoV-2.

This work demonstrated the efficacy of the CPC (cetylpyridiumchloride) technology Unilever uses in its mouthwashes and provided essential data for regulatory approval and claims in key markets such as India, Italy, Indonesia, Vietnam, Russia.

Platform Leads

Professor Nicholas Feasey is an Infectious Diseases physician and Professor of Clinical Microbiology at the Liverpool School of Tropical Medicine.

Dr Grant Hughes is a Reader and Wolfson Fellow at Liverpool School of Tropical Medicine.

Professor Nicholas Casewell is Director of the Centre for Snakebite Research & Interventions and Chair in Tropical Disease Biology at Liverpool School of Tropical Medicine.

PLATFORM NINE

Leveraging Nanotherapeutics expertise to support product development

As a result of significant public research and development investment, many promising prototypes for nanomedicine applications in the areas of therapeutics, diagnostics and regenerative medicine are reaching clinical trials and are entering the regulatory approval pathway.

There is a growing requirement by regulators and developers, to de-risk translation by better understanding the critical determinants of efficacy and safety. Nanotechnology offers great promise for treatment and diagnostics but is constrained by expertise required for robust characterisation needed for progression towards clinical trials.

Led by The Nanotherapeutics Hub located at the University of Liverpool, this platform provides industry partners access to the Hub's expertise and its network of UK partner organisations to support the development of innovative new antimicrobials, and vaccines, leveraging nanotechnology.

As an iiCON platform, we bring expertise in the field of nanotherapeutics which encompasses applications in infectious disease, cancer, immune modulation and regenerative medicine. The benefits, and promise, of nanotechnology are clear however, robust characterisation of their interactions with biological systems is vital to their translation to clinical use.

Using our expertise, we are determining critical quality attributes for nanotherapeutics to assist in future rational design of advanced materials. This is supported by our partnership with the National Measurement Laboratory and our links into national, and international, activities.

Dr Neill Liptrott

Platform Lead

Dr Neill Liptrott is a Lecturer of Pharmacology at the University of Liverpool and Coordinator of The Nanotherapeutics Hub at The University of Liverpool.

PLATFORM TEN

Merseyside SME Support Programme

iiCON's Merseyside SME support programme is funded by the European Regional Development Fund and designed to support regional innovation and invigorate the product development pipeline.

Delivered in partnership by Liverpool School of Tropical Medicine and the University of Liverpool, this platform helps Merseyside SMEs overcome roadblocks to product development in the formulation of infectious disease products by providing access to state-of-the-art equipment and world-leading expertise.

iiCON's platform provides SMEs access to world-class expertise and facilities across three key focus areas to support product development: Screening for AMR Emergence; Novel Surfaces and Materials; and Diagnostic Evaluation.

Facilities and expertise available include AMR testing platforms combined with a microbiology suite in the Materials Innovation Factory supported by Unilever at the University of Liverpool; a surface chemistry suite at the Open Innovation Hub for Anti-Microbial Surfaces at the University of Liverpool; and a Diagnostics and Engineering suite to enable diagnostic development and evaluation– supported with expertise from the Liverpool School of Tropical Medicine and University of Liverpool.

Case study 1

Merseyside start-up progressing pandemic early warning system

Supported by iiCON, Merseyside start-up Bio Data Networks Limited (BDN) is developing a set of promising new devices that will act as a surveillance tool to provide early warning of outbreaks of infectious diseases.

Regular sampling and analysis of sewage can enable the early detection of infectious disease or resistance markers within a population. This type of monitoring is particularly key in instances like the COVID pandemic where some individuals can be asymptomatic.

In order to enable BDN to further develop and test its exciting new products, iiCON connected the company to the expertise within the Antimicrobial Chemotherapy and Resistance Group at LSTM. A comprehensive series of experiments in real-world scenarios were designed and conducted by the Antimicrobial Chemotherapy and Resistance Group at LSTM.

This initial study has led to an additional funding application to further develop the system for detection and surveillance of SARS-CoV2 within sewage systems.

> *BDN's device is an exciting example of innovation in this space and has the potential to act as an impactful early warning system for COVID and future pandemics. Connecting through iiCON into the outstanding expertise at LSTM has enabled BDN to test its device under challenging conditions and secure the evidence of efficacy needed to progress their product forward to the next phase.*
>
> **Dr Lisa Baldwin**

Case study 2

Liverpool SME developing ‘game-changing’ lateral flow test technology

Nano Biosols, a Merseyside SME, has filed a patent for novel technology it has developed to enhance the sensitivity of lateral flow tests - enabling their use across a much broader range of diseases.

Lateral flow tests have been routinely used during the pandemic to detect infection. However, although lateral flow tests are a relatively cheap, user-friendly, and effective testing method, they are generally not as sensitive as the gold standard PCR test for detecting active infection. Nano Biosols’ novel gold nanoparticle technology can improve the sensitivity and readability of lateral flow tests in cases where detection lines are only faintly displayed.

Through iiCON’s Merseyside SME support programme, Nano Biosols worked with iiCON and partners LSTM to undertake initial testing and evaluation of its novel technology. The diagnostics team at LSTM was able to evaluate lateral flow test performance with and without the addition of the Nano Biosols reagent and showed improved detection limits and readability of tests.

Platform Lead

Dr Lisa Baldwin
Senior Business Development Manager

Future Proofing

Investment & Job Creation

91 secured contracts valued at **£48M**

176 **high value jobs** created in the North West

44 industry projects totalling **£11.2M**

387 **total jobs** created to date

Capacity Development – future-proofing the Infection R&D landscape

iiCON has secured over £10 million in grant funding for capacity development. This significant investment in resources, skills development, and training will play an important role in future-proofing the North West's position as the world-leading centre for infection R&D.

It will bolster the delivery of translation research activity with real world impact and support the development of the global health leaders of the future - expanding regional capacity by building on the existing expertise within LSTM and iiCON's core partners.

Capital Contracts

iiCON has secured capital investment of over **£19.5 million** in its first year. Other capital projects being delivered under the programme include a major University of Liverpool laboratory refurbishment to progress the Advanced PK-PD AMR work package being delivered under Platform Four.

Other investments of note include **£2 million** received from the Liverpool City Region Combined Authority to develop a Capacity Development Centre in Pembroke House, Liverpool. Additional matched funding has been provided from LSTM and the centre is due to open ahead of LSTM's 125th anniversary in 2023.

Pembroke House: A new centre for infection innovation & training in the North West

A rich eco-system where collaborative innovation will thrive

Pembroke House is a new multi-functional, collaborative centre led by LSTM and iiCON where industry, education and communities work together.

The centre will develop the next generation of global health leaders with a unique globally-connected digital learning environment, and future-proof the region as a world-leading centre for infection innovation, research, and learning.

Pembroke House will support knowledge exchange between a diverse international community of research, industry, and education partners. State-of-the-art technology and infrastructure will enable world-class training, knowledge sharing and collaboration, fast-tracking translational science and innovative interventions for human health.

Leverage and Scale of programme

£18.6 million
Core funding secured through UKRI's flagship Strength in Places Fund (SIPF)

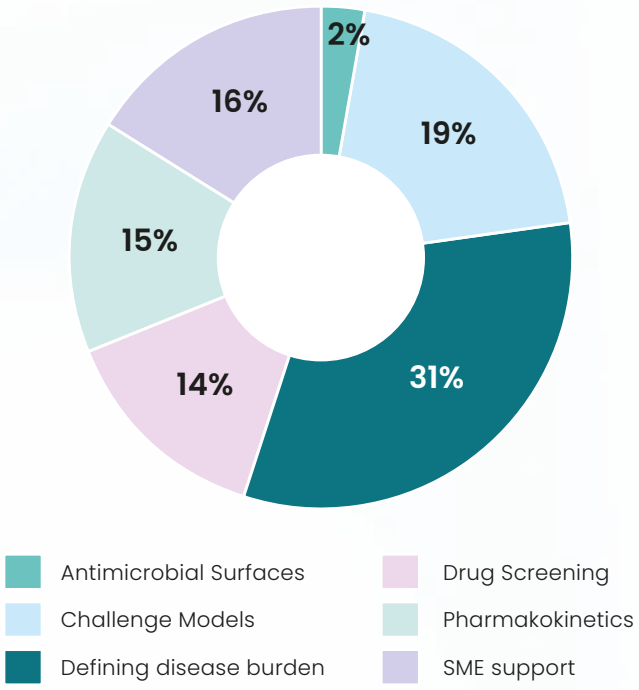
£154.9 million
Leverage secured in Year One

£173.5 million
Total programme

Funds Secured

Year 0	Total to date
	£53,113, 275
	Industry
£22,176,302	Local Authority
Industry	Other
Philanthropic	Philanthropic
UK GOV	UK GOV
US GOV	University

Key Workstream Investment



Core funding: UKRI Strength in Places Fund

iiCON's core £18.6 million government funding was provided through UK Research and Innovation's flagship Strength in Places Fund. The Strength in Places Fund (SIPF) is a competitive funding scheme that takes a place-based approach to research and innovation funding, to support significant local economic growth. SIPF helps areas of the UK to build on existing strengths in research and innovation to deliver benefits for their local economy. It aims to support innovation-led regional growth and enhance local collaborations involving research and innovation.

The European Regional Development Fund (ERDF)

iiCON secured £3.3 million from the ERDF to support its Merseyside SME Support Programme and leveraged a further £3.3 million to create a £6.6 million programme. The ERDF aims to strengthen economic, social and territorial cohesion in the European Union by correcting imbalances between its regions. In 2021-2027 it will enable investments in a smarter, greener, more connected and more social Europe that is closer to its citizens.

Closing Comments

> *Partnership and co-innovation are absolutely critical if we are to meet the global challenge posed by infectious diseases and emerging pandemics.*

iiCON has had an incredible first year. As lead partner, we're delighted with the programme's impact in enabling collaboration and driving forward world-changing innovation in infection research and development that will ultimately help to save and improve the lives of millions of people.

Partnership and co-innovation are absolutely critical if we are to meet the global challenge posed by infectious diseases and emerging pandemics. The consortium's growth speaks to the scale of the need – it has never been more important that the global community works together to support innovation, strengthen our anti-infectives pipeline, and bolster our response to emerging pandemics and resistant infections.

Over the last 12 months, iiCON has firmly established itself as a leading global centre for infection innovation and this is just the beginning of the journey. iiCON has a vital role to play in supporting the discovery and development of the game-changing products and treatments of tomorrow, and we're incredibly excited about what the future holds for the consortium.

Professor David Lalloo
Director,
Liverpool School of Tropical Medicine

iiCON
infection innovation
consortium

iiCON

A Global Centre of Infection R&D
Saving Lives by Supporting Innovation

iiCON is a world-leading collaborative infectious disease R&D programme established in 2020. It brings together industry, academia, and the NHS in a concerted effort with a clear aim: to combat the growing global threat posed by infectious diseases and save lives through collaborative innovation.

The consortium is revolutionising the discovery, development, and rapid deployment of new antimicrobial products, diagnostics, and therapeutics – bringing these to patients and communities more quickly, safely, and affordably.

To find out more about more about iiCON or explore opportunities to collaborate, please contact us at:
iicon@lstmed.ac.uk

UK Research and Innovation

NORTHERN POWERHOUSE

European Union
European Regional Development Fund

iiCON – Infection Innovation Consortium

Liverpool Life Sciences Accelerator
1 Daulby Street
Liverpool
L7 8XZ

@iiCONNW

Infection Innovation Consortium

www.infectioninnovation.com