



THEHILL, OXFORD HIGHLIGHTS REVIEW

2019/2020



THIS REPORT IS AVAILABLE ON OUR WEBSITE
AS A DOWNLOADABLE PDF.



RECOGNISING OUR NHS COLLEAGUES WHO LOST THEIR LIVES IN THE COURSE OF THEIR DUTIES AS A RESULT OF THE COVID-19 PANDEMIC IN 2020



EMPOWERING DIGITAL INNOVATION IN HEALTH AND CARE

THEHILL, OXFORD HIGHLIGHTS REVIEW 2019/2020

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CHAIRPERSON'S FOREWORD

The past year has been unprecedented. In the face of great challenges, patients, staff and health services have demonstrated an awe-inspiring capacity to adapt and change. At the heart of the response to the COVID-19 pandemic has been innovation – the ability to do new things in new ways.



Nick de Pennington

In its own way TheHill has responded to this need by accelerating its mission to build a community of digital health innovation in Oxford. Never before has digital innovation been more important to healthcare. Looking back to this time last year it is almost unimaginable how far we have come, from the widespread use of remote appointments, to monitoring patients in their own homes and now managing the delivery of a rapid nationwide vaccination programme.

As we enter what is hopefully the beginning of the end of the pandemic, we will need time to reflect and recover. We will all want to understand what lessons we can learn for the future. To help this we will require an objective record. Fortunately TheHill team were able to use their skills and resources to capture the outstanding response

of Oxford University Hospitals NHS Foundation Trust (OUH NHS FT) staff to the beginning of the pandemic. I'm sure this report will provide a source of inspiration for the whole health community as we start to plan for the post-COVID-19 future.

Whilst COVID-19 has dominated the headlines, the business of healthcare has continued, and so have TheHill's programmes to support and encourage innovations and innovators. Great opportunities now exist to deliver a better future. It has been wonderful to see a number of initiatives including the Market Access Accelerator, the Open API Boot Camp and Transformative Digital Skills come to fruition. Building capabilities and understanding new technologies and ways of working will be the foundation for our recovery.

I would personally like to thank all the people and organisations who have contributed to TheHill's success. The Oxford Academic Health Science Network (AHSN) have been a consistent partner with a shared vision to support innovation in healthcare. We have been fortunate to receive support from various European Union programmes and partners. Whilst the technical details of these relationships currently remain hazy, I have no doubt that the spirit of collaboration and co-operation with our friends in Europe will remain strong. Oxford University Hospitals Foundation Trust have been a generous host, and with the vision of David Walliker we look forward to being able to support an integrated innovation pathway that links the needs of patients, staff and partners. Finally my thanks go to the whole team under the leadership of Megan, TheHill's success is due to their hard work.



Dr Nick de Pennington
Digital Innovation & Population Health Lead, OUH NHS FT, and interim chair of the board

Nick is one of NHS England's Clinical Entrepreneurs and the CEO of Ufonia, a digital health start-up company developing voice-based robotic-process-automation for the management of long-term conditions.

OUR BOARD

Dr Nick De Pennington

Digital Innovation & Population Health Lead OUH NHS FT, and Interim Chair of the Board

Dr Alexander Finlayson

CEO and Head of Product at Nye Health

Dr Fred Kemp

Deputy Head of Licensing & Ventures, Life Sciences, Oxford University Innovation

Dr Ryan Pink

Senior Lecturer in Molecular Biology and Genomics, Oxford Brookes University

Kerry Rogers

Director of Corporate Affairs and Company Secretary, Oxford Health NHS Trust

Dr Richie Harrington

Public health data scientist, University of Oxford

Dr Guy Rooney

Medical Director, Oxford AHSN

Dr Siân Rees

Director of Patient & Public Involvement, Engagement & Experience, Oxford AHSN

Martyn Ward

Director of Strategy & Chief Information Officer, Oxford Health NHS Foundation Trust

Megan Morys-Carter

Director of TheHill

DIRECTOR'S MESSAGE

The founding members of TheHill, Nick, Alexander and Richie, recognised an important truth: the need for multi-disciplinary, cross-organisational work to tackle the big health and care challenges of our time. Thus TheHill is, at its heart, a community which fosters trust and understanding across sectors, develops connections and works together to further digital health and care in Oxfordshire and beyond.



the unusual circumstances this year has brought. I want to thank the team and our partners and collaborators for stepping up to the challenge of online delivery and the many and varied stresses of the year, throughout which we have delivered a successful and well-regarded programme of events and activities.

During the last year we've been fortunate to work even more closely with our colleagues at Oxford University Hospitals through our Transformative Digital Skills for Healthcare programme, needs analyses, and supporting individual innovators. I have been inspired by the fortitude, resilience and drive for improvement that we see all around us, and want to thank in particular all the frontline staff who gave us their time for Digital Skills use-ases and our Retaining Innovation report.

This year we have worked with some fantastic start-up teams.

From better communication with patients to remote monitoring to improved clinical decision-making and resource management, each of these companies are bringing together resource to solve real clinical issues and make life better for staff and patients. We see the potential of technology to empower people, save costs and drive improvements in health and care, and we're excited to be a part of this transition.

The report captures an overview of the work of TheHill team, and the community we serve. It has been an exciting, stressful, inspirational year for everyone striving to make health and care better, and we are proud to have been a part of your journey.

Megan Morys-Carter
Director, TheHill

When I joined Adele in our tiny office at the back of the John Radcliffe Hospital, little did I realise that two years on we'd be a core team of 10 with numerous associates, partners and collaborators, delivering an Accelerator, a 6-week bootcamp and a digital skills programme to participants from across Europe. TheHill team never ceases to amaze me with their creativity, dedication and passion, even in the face of

ACKNOWLEDGING OUR FUNDERS & PARTNERS

We are immensely grateful to Oxford University Hospitals Foundation Trust (OUH NHS FT), for match-funding our core grant, and hosting us at the John Radcliffe Hospital as well as providing operational IT, finance, human resources and internal communications support.

We are also grateful to have been funded by the European Regional Development Fund (ERDF) as part of the Innovation Support for Business programme (ISfB). The ISfB programme has been delivered by Oxfordshire Local Enterprise Partnership (OxLEP), with partners from the University of Oxford, Cherwell District Council, and Oxford City Council in addition to OUH NHS FT.

In addition, we have been fortunate to have had backing for our other programmes from EIT Health, a body of the European Union. They have funded our Open API Bootcamp and Transformative Digital Skills for Healthcare programmes this year, as well as our participation in the Women Entrepreneurs in Health programme and SMASH Medicine's student competition.



Our regional partnerships have contributed to the increasingly connected digital health ecosystem of Oxfordshire and the Thames Valley, with the ultimate aim of encouraging commercial and impactful technological solutions to problems in health and care. In this respect we acknowledge in particular the contributions OUH NHS FT, the University of Oxford, Oxford University Innovation, Oxford Brookes University, Oxford Academic Health Science Centre and Oxford AHSN.

INNOVATION SUPPORT FOR BUSINESS



PROGRAMME PARTNERS



EIT Health is supported by the EIT, a body of the European Union



REGIONAL CONTRIBUTIONS



The support of our partners and funders has enabled us to achieve the results we have over the past two years

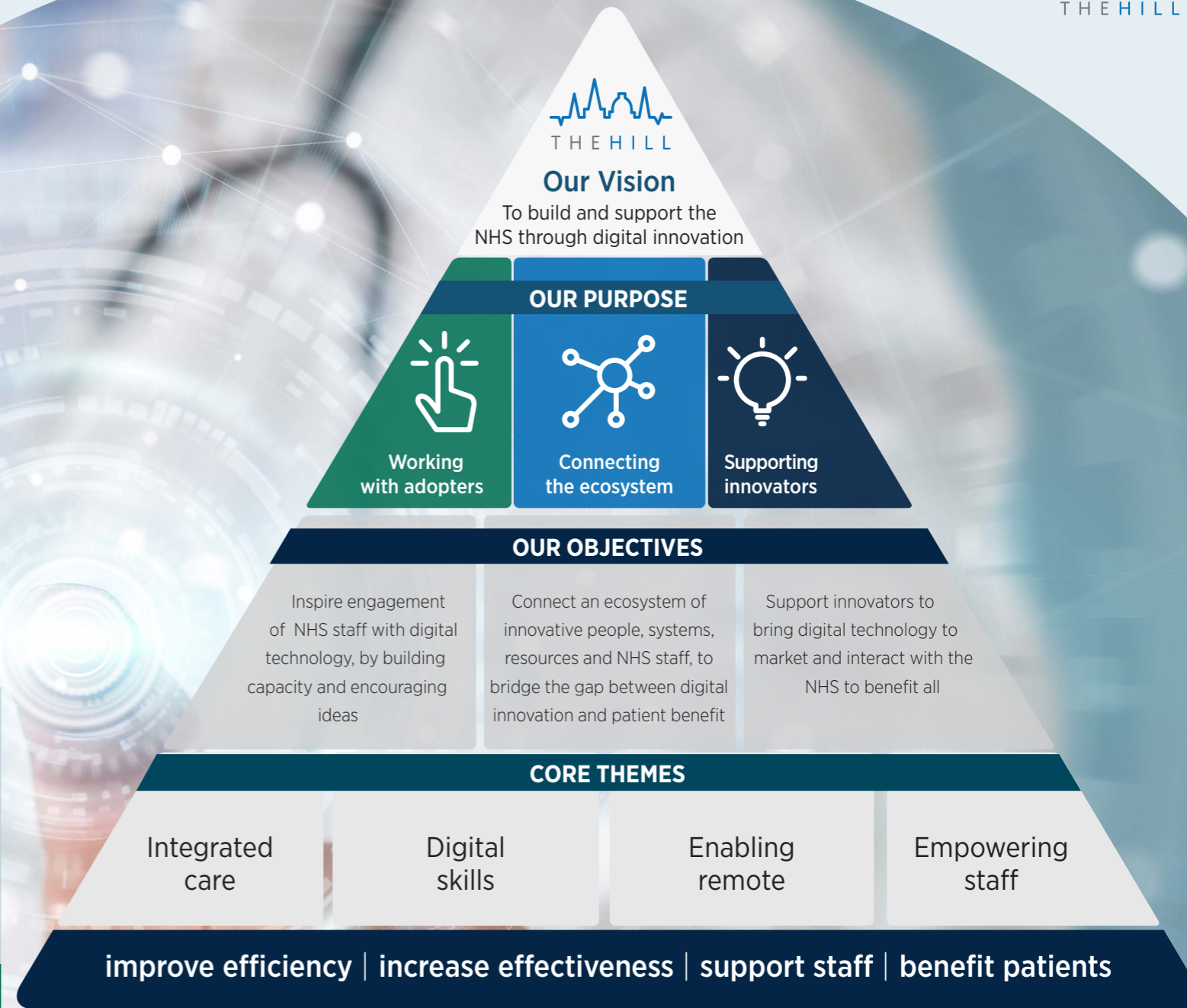
We look forward to working with you into 2021 and beyond as we begin to grapple with a post pandemic health and care era, learning from 2020 and all its challenges.



THANK YOU FOR WORKING WITH US
To empower digital innovation in health care

ABOUT THEHILL

TheHill brings digital technology and new innovations into the NHS with a focus on break-through innovation. The new approaches we support may be ideas internal to the NHS or external companies, but all of them seek to make the NHS more efficient and effective, empower staff and benefit patients.






Connecting all players and stakeholders

We bring together patients, carers, nurses, doctors, allied healthcare professionals, designers, developers, researchers, business leaders, investors – and anyone with a passion for using new technologies to improve healthcare.

Our sphere of engagement is local, regional and national

We work in Oxfordshire and across the Thames Valley with NHS Trusts, universities, digital developers, innovators and investors to promote and encourage commercial and impactful technological solutions to problems in health and care. Our work can be divided into three broad streams:

1. We encourage NHS staff to engage with digital innovation and inspire them to come up with their own solutions. We do this by building capacity within the NHS to increase skills and understanding of digital technology, and the adoption of new innovations. 
2. We connect an ecosystem of innovative people and resources, most especially entrepreneurs and NHS staff, and build the systems, partnerships and capacity to bridge the gap between digital innovation and ultimate patient benefit. 
3. We support innovators (at both early and late stage) to develop their ideas, bring their digital technologies to market and interact with the NHS for the benefit of staff and patients. 

The core values to which we work:


1. We believe that people are at the heart of successful change and effective health and care delivery and we seek to empower them through the use of new digital technology and innovation.
2. We promote a community-based model of innovation that is driven by the needs of health and care staff and of staff and their patients.
3. We value diversity and believe that innovation can come from many different places.
4. We are collaborative and seek to work in partnership with stakeholders to achieve greater impact driven by systemic change.

Our values echo those of the National Health Service

They also align with the OUH FT Strategic Framework



OUH FT Strategy 2020-2025

 Being both embedded within the OUH FT, and with linkages to organisations and networks outside of the NHS, TheHill is in a unique position to be able to leverage these connections to the advantage of both the adopters of innovation, and innovators.

OUR TEAM



<p>Megan Morys-Carter Director</p>  <p>MEGAN</p>	<p>Sara Cocomazzi Digital Skills Programme Manager</p>  <p>SARA</p>	<p>Andrea D'Andrea Marketing Officer</p>  <p>ANDREA</p>	<p>Melanie Blanksby Programme Manager</p>  <p>MELANIE</p>	<p>Marc Huglin Operations Manager</p>  <p>MARC</p>
<p>Adele Carvalho Digital Innovations Officer</p>  <p>ADELE</p>	<p>Stefania Schino Grant writer and reviewer</p>  <p>STEFANIA</p>	<p>Mirella Lingwood Programme Officer</p>  <p>MIRELLA</p>	<p>Abdul Gufar Accelerator & Digital Innovation Project Manager</p>  <p>ABDUL</p>	<p>Bonny Jennings Communication Designer</p>  <p>BONNY</p>

TEAM SKILL SET: R PROGRAMMING CLINICAL HEALTH STANDARDS INTEGRATION DESIGN PRODUCT DESIGN PRODUCT LIFECYCLE LATEX SPSS EXCEL ACCESS DATABASES MAIL CHIMP SURVEYMONKEY SAGE QUICKBOOKS QUICK FILE HRIS CORE WORDPRESS ADOBE SUITE

Over the past two years we have put together a small, but agile team, with wide health, tech and innovator networks; locally, nationally & internationally

OUR ALUMNI STAFF



Rhiannon Lassiter



Nesrine Ramadan



Pritesh Mistry



Flora Hatahintwali



Nicki Bromwich



Stephen Workman

OUR SUMMER INTERNS



Shakira Mahadeva

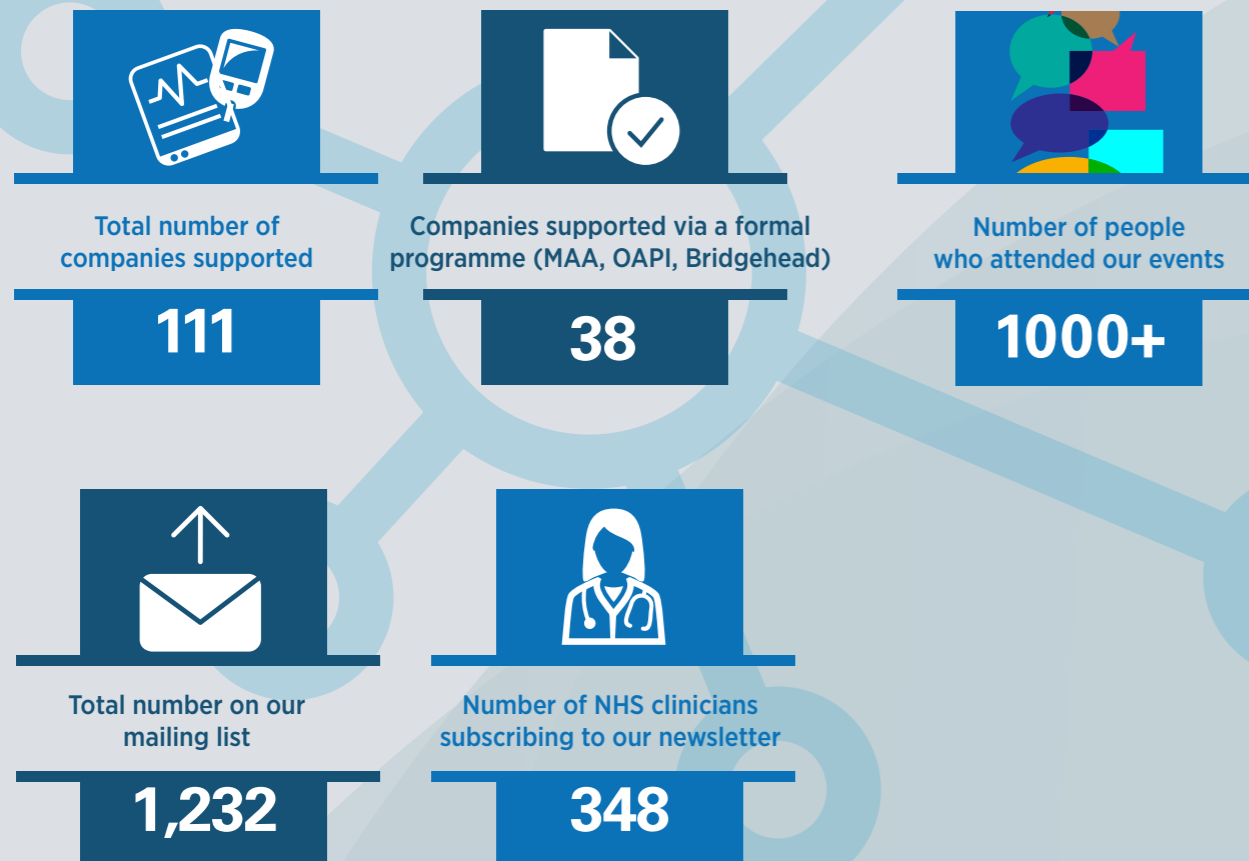


Chloe Curtis

OUR ASSOCIATES

<p>Lucy Edwards Innovation Advisor</p> 	<p>Jim Gabriel Innovation Advisor</p> 	<p>David Nurse Innovation Advisor</p> 	<p>Hadassah Buechner Grant Writer and Reviewer</p> 
<p>Hannah Briden</p> 	<p>Ti Xu Digital Innovations Specialist</p> 	<p>Andrew Ramos Digital Innovation Projects Officer</p> 	<p>Gareth Hooper Healthcare Economist</p> 

OUR NETWORK



Over the past year we've worked hard to develop our network, particularly focusing on entrepreneurs and health and care professionals. We have a good network of regional and European SMEs, but patchy coverage nationally. Over the next year we are targeting a greater diversity of health and care professionals in the region, especially OUH FT, Oxford Health NHS Foundation Trust (OUFT) and primary care, and digital health companies at a national level.



The scale and diversity of our network allows us to make the right connections for our community.

EQUALITY DIVERSITY INCLUSION

'Can technology help to narrow inequalities in healthcare?' This was the subject of a lively discussion at our latest social mixer (online) and we heard positive stories from our community about promoting equal access to health and care, reducing existing inequalities and avoiding new sources of inequity.

Our 'Women in Healthcare Innovation' event was oversubscribed and it was fantastic to work with a group of people so committed to innovation in health and care. We covered developing value propositions, the importance of networking, practiced pitching and heard stories from several inspirational role models.

Equality, diversity and inclusion (EDI) are part of TheHill's core values and continue to frame our planning and priorities. Reducing inequality, ensuring diversity and working towards inclusion are requirements for a strong and fully functional healthcare system able to deliver the best staff experiences, ensure access and quality of care to all patients, and improve the wellbeing and health of all.

We commit to continually reassessing our efforts to improve our own diversity and to support innovators and adopters from all backgrounds. We seek to promote digital innovations that reduce the gaps for, and equally benefit, all individuals and particularly those who are otherwise disadvantaged.

Women in Healthcare Innovation

Women Entrepreneurs in Health programme is an EIT Health Campus programme in which TheHill participated. It is designed to enhance the participation of women in health innovation and entrepreneurship. TheHill hosted Women in Healthcare Innovation, an on-line day of workshops and panel discussions, with entrepreneurial women experts in the Oxford healthcare innovation ecosystem, on the 7 November 2020.



Narrowing inequalities through tech

At the December social mixer Megan discussed digital inclusion and exclusion and the role of digital technologies in reducing healthcare inequalities with Terry Roberts, Chief People Officer at Oxford University Hospitals NHS Foundation Trust, and Saira Arif, Implementation Manager at ORCHA. Terry reflected on the steps the Trust is making to overcome staff-related inequalities and promote more inclusion. Saira talked about the ORCHA project and how apps for patients and staff are selected and reviewed, within the context of our topic. Also on the panel were Liberty Foreman of DynamX and Rachael Grimaldi of Cardmedic, both of these companies target accessibility and are in TheHill portfolio.

DynamX Medical

...aims to make cancer and disease screening accessible and affordable for all. They merge spectroscopy and artificial intelligence making quantitative diagnoses accurate, fast and affordable.

CardMedic®

...is a flexible digital communication tool designed to improve the transfer of vital information between frontline healthcare staff and patients, no matter the barrier - be it language differences; visual, hearing or cognitive impairment; or Personal Protective Equipment (PPE).



NHS EDI POLICY

www.england.nhs.uk/about/equality



WORKING WITH ADOPTERS

From in-person events and networking... to on-line social mixers, meetings and training Just one of the challenges of 2020. We adjusted accordingly and ran an entirely on-line TDSH programme



TRANSFORMATIVE DIGITAL SKILLS FOR HEALTHCARE

1. Technical knowledge
2. Transferable skills
3. Real-world scenarios

PARTICIPANTS' FEEDBACK

"Thank you so much for the privilege of working and learning with one of the best UX Experts in this field! I've waited a long time to be able to attend a course like this."

"I truly enjoyed it - the assignments were super interesting and motivating and the right balance of learning, fun and not too cumbersome."

"I think the use cases are an essential component of the course - it is not possible to completely understand the issues and how to actually apply the checklists etc if you don't have a use case as an example. Also going through work in the session and then doing some homework really helps to consolidate the skills....."

TDSH gives healthcare professionals the skills and knowledge to lead projects and apply digital technologies in the health and care sectors.

Digital innovations are revolutionising healthcare; professionals from across the health and care ecosystem need to be able to innovate, adapt and engage with new technologies and the changing pace of medicine. The TDSH programme was co-designed by the Fraunhofer Institute, Universitat de Barcelona, and TheHill to give people the skills and knowledge they need to lead digital transformation.

The development of the programme was funded in 2020 by EIT Health. Our consortium brought together learning design expertise, technical knowledge and an in-depth understanding of clinical reality to create a course which is relevant, interactive and impactful. TheHill's major contributions were the

creation of the use cases and the health economics module content, the delivery of three modules and marketing for the whole programme. We also worked closely with the module leads to integrate our use cases with the academic content.

The modules, originally planned to be part online, part face-to-face, were delivered wholly through dynamic remote learning tools, with participants able to communicate with each other as well as experts and tutors through moderated discussions and live webinars. Communities of learners; where ideas, issues, experiences and solutions can be developed and exchanged, were created and continue for alumni.



TheHill partnered with Fraunhofer and the University of Barcelona, with EIT Health funding, to bring this programme to market.



Attendees to this programme came from a range of disciplines, adding to the richness of group learning and bringing diverse perspectives to team work.

WORKING WITH ADOPTERS



TheHill developed 8 & delivered the 3 most relevant modules

Applications from 18 countries

113 applications for 60 places in TheHill led modules



M5 Usability and User Experience (UX) of Medical Devices



M6 Machine Learning



M8 Health Economics

- Delivered October and December 2020
- Synchronous sessions delivered over Zoom.

Use cases

We developed nine use cases across eight modules, with a strong emphasis on storytelling to bring the course content to life. Each use case takes the reader through a five-step story set within the 'hospital of the near-future', describing the challenges, opportunities and lessons learnt by implementing a chosen digital health technology.

The narratives of the use cases build on the expertise and experience shared by clinicians at OUH FT and within the wider UK NHS shed light on the key challenges of clinical practice and provide a visionary look into future opportunities.

We would like to thank the 36 healthcare professionals who participated in interviews and discussions as part of the use case development.

M5 | Usability and User Experience (UX) of Medical Devices



Looking ahead

The TDSH programme will continue to develop in 2021 with module topics and delivery methods tailored to meet the needs of the OUH FT community and beyond, in line with participant feedback and emphasising the relevance and impact that comes from the use case model.



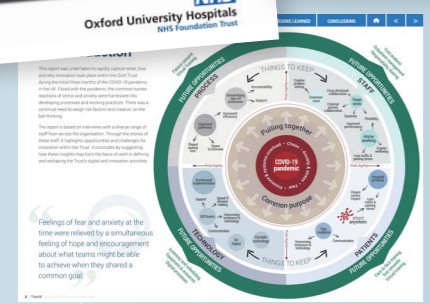
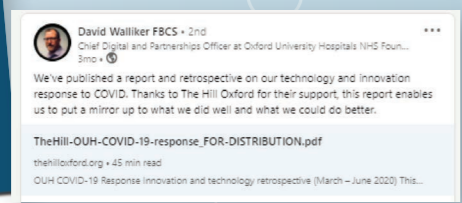
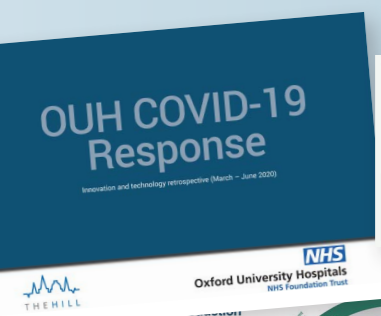


OUH COVID-19 Response Innovation & technology retrospective

TheHill worked with OUH NHS FT to identify the innovative practices which emerged in hospitals during the 'first wave of the COVID-19 pandemic. We were commissioned to capture how and why this innovation took place within the OUH NHS FT during the initial three months. The result was the 'OUH COVID-19 Response: Innovation and technology retrospective (March – June 2020)'.

'Six months ago, none of us could have predicted the transformation we have all experienced as a result of COVID-19. The OUH NHS FT community met the extraordinary challenges of the pandemic with inspiring commitment and energy.'

David Walliker, Chief Digital and Partnerships Officer



David Walliker explains, in his foreword to the report, the need for the review, and how it was achieved: *'Faced with the pandemic, the common human reactions of stress and anxiety were harnessed to develop processes and working practices. There was a continual need to weigh risk factors and creative, on-the-ball thinking.'*

The report collates the insights and opinions of staff across the Trust, using anonymised quotes throughout. Interviews were conducted during June 2020, with the objective of gaining input from all divisions and staff groups. It is a preliminary review, with a limited time-frame for preparation, so the

interviewees necessarily represent a snapshot of the organisation rather than a comprehensive survey. All Divisional Directors and Directors of Operations facilitated introductions across their teams, and under-represented groups were approached directly to ensure a breadth of viewpoints were heard. The report concludes by reflecting on some of the lessons learned, and how these can be used to inform a redefinition of the Trust's digital and innovation activities.

'... This report was commissioned in order to record [the] important, but transient, first phase of our pandemic response. It listened directly to frontline staff from

across the organisation, and focused on capturing their personal stories.... Overwhelmingly the report describes an organisation filled with committed, caring individuals. In the face of a compelling need they were able to deliver powerful change. The organisation and its members innovated and we must retain that energy as we move into perhaps more challenging times ahead.'

The publication of the OUH COVID-19 Response: Innovation and technology retrospective (March – June 2020) report identified specific areas requiring attention, that are intended to build on the work begun with the compilation of the report.

THEHILL CONTINUES TO SUPPORT OUH NHS FT WITH THESE ACTIVITIES

- Co-designing innovation pathways
- Sharing best practice through learning sets and workshops
- Capturing current ideas and innovations



We have worked closely with teams across OUH NHS FT to further the understanding of current innovation pathways, identify potential improvements to processes and to capture and communicate ideas of immediate relevance. This work will continue in 2021.

WORKING WITH ADOPTERS

LEARNING SETS



SHAKIRA

CHLOE

The OUH COVID-19 Response: Innovation and technology retrospective initiated several follow-on projects. One of these, 'showcase best practice', identified a need to support staff to learn from one another, in addition to formal training. In response, TheHill organised a

Learning Set, where staff were able to share experiences and ideas on the topic of Remote Working. Participants shared their experiences, specifically on how best to use remote collaboration technologies, conduct virtual (and hybrid virtual/face-to-face) team meetings, and integrate an on- and off-site team. The workshop aimed to bring members of the OUH NHS FT

together to share best practice across the organisation, gather new perspectives and collate suggestions from colleagues and others in their team. In particular, we sought the inclusion of junior colleagues and those in nursing and AHP roles, increasing the diversity of the opinions and knowledge shared.

We offer clinicians and health and care staff the opportunity to engage with us through a variety of events including needs based workshops. We aim to engage more of our community of clinicians, allied health professionals (AHPs), nurses, managers, entrepreneurs, developers, investors, support services, through regular networking events and targeted campaigns and activities. In 2021 we will be formalising the clinical part of our network through the Clinical Ambassadors programme and a series of Meet the Clinician events.

The Clinical Ambassadors programme aims to build a network of clinicians and healthcare professionals keen to foster change and innovation within the NHS. These individuals will support our core work of getting digital health technologies and innovation into the NHS, to overcome challenges and improve delivery across a range of different medical specialities.

The programme will develop a community of digital champions within the NHS to drive adoption and positive change. We will build the capacity and skills of individuals, link adopters to relevant providers of technology solutions, and further develop our vibrant community of innovation enthusiasts.

CLINICAL AMBASSADORS PROGRAMME

The diverse backgrounds, expertise and interests of our Ambassadors will enable an efficient and effective co-design process across the innovation development and adoption cycle, going from the definition of the problem to the most appropriate solution.

MEET THE CLINICIAN DAYS

Meet the Clinician: Cancer is scheduled to take place on 26th January 2021.

Meet the Clinician: Mental health will take place on 11 March 2021.

One of the keys to a successful innovation ecosystem is the facilitation of connectivity, and part of that is connecting potential adopters and providers of technology. Meet the Clinician days are intended to introduce clinicians to innovations in their area of work, and to connect innovators with clinicians who work in their product or idea space. The aim is to support clinicians and innovators to better understand their needs and find innovative solutions to their problems. This is the beginning of a process to encourage co-design of health solutions amongst engineers, developers, clinicians, healthcare professionals and patients.

CONNECTING THE ECOSYSTEM



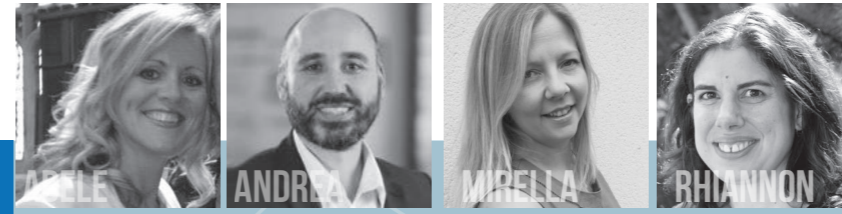
Successful innovation ecosystems across the world are marked by their degree of connectivity and exchange of ideas, people and resources. TheHill was originally founded to create connections between the diverse participants of the digital health ecosystem in Oxfordshire and that fundamental *raison d'être* remains.

We connect individuals by providing networking events, facilitating introductions and giving people the opportunity to develop a shared language and interest. We connect organisations through partnerships, joint grant proposals and the support of other networks and community projects such as Living Oxford.

We have worked hard this year to establish connections and communication with a range of individuals and functions within OUH NHS FT, itself a complex organisational ecosystem, and one essential to the success of digital health innovation in Oxfordshire.



CONNECTING THE ECOSYSTEM

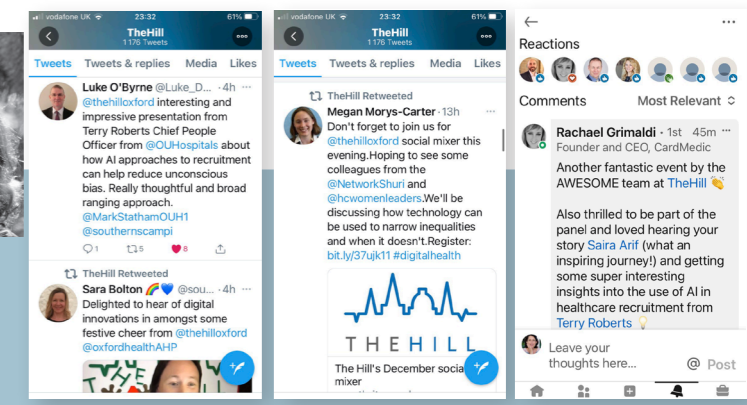


THEHILL EVENTS 2020

EVENTS THEHILL EVENTS 2019

FEBRUARY	103 participants	TheHill Relaunch Social Mixer
APRIL	24 participants	User Centred Design Workshop
APRIL	71 participants	TheHill Social Mixer
MAY	22 participants	How to produce your first health economic evaluation workshop

JUNE	76 participants	TheHill Social Mixer with Oxford Startups
SEPTEMBER	54 participants	TheHill Social Mixer Venturefest
SEPTEMBER	48 participants	TheHill NHS Market Access Accelerator Social Mixer
NOVEMBER	186 participants	TheHill Social Mixer and EIT Health Bootcamp Roadshow



FEBRUARY	9 participants	Future Digital Skills for Health and Care: focus groups
FEBRUARY	120 participants	TheHill's networking social mixer
FEBRUARY	31 participants	Research collaborations for healthcare innovation speakers and networking
APRIL	18 participants	Community Video Calls
APRIL	93 participants	TheHill's Twitter Mixer, in collaboration with the Bio Escalator

JUNE	39 participants	Interoperability Workshop
AUGUST	24 participants	TheHill's NHS Market Access Accelerator - Procurement: a CCG Perspective
SEPTEMBER	47 participants	Parsimonious standards for extraordinary outcomes: universal, regulated API
OCTOBER	76 participants	TheHill Virtual Social Mixer - digital innovation during a pandemic
OCTOBER	28 participants	Health Economics in Digital Health
NOVEMBER	46 participants	Women in Healthcare Innovation Workshop
DECEMBER	48 participants	TheHill Virtual Social Mixer - Digital Inclusion & Exclusion: how technology can help to narrow inequalities





INTEGRATED CARE NETWORKS



CONNECTING THE ECOSYSTEM

Only by working together across a broad spectrum of health and care providers can the NHS and supporting services deliver efficient and effective care to patients. This is increasingly recognised, but challenging to achieve. We catalyse the evolution of integrated care by:

1. Connecting an extensive network of individuals from many different parts of our regional health and care system.
2. Working with each of our partners to understand their needs.
3. Identifying, from our strategic perspective, where needs overlap and collaborations could be formed.
4. Initiating and facilitating the development of collaborative projects by connecting people with shared interests, forming and/or leading consortia and bidding for funding at a national and international level.

Some of this work is done at our regular digital health ecosystem meetings, bringing together representatives from key organisations across the region.

In addition TheHill assists companies to apply for grant funding, writing proposals, creating partnerships which can be difficult and time-consuming for organisations to do alone.

Even if grant applications are not successful they play a significant role in building connections between different sections of the ecosystem. These connections can lead to improved entrepreneurial ideas, teams of collaborators and financial support through other avenues. An example of this is the Strengthening Places Fund application, which although not successful, brought together a cross-organisational team, some of whom continue to collaborate.



INTERNET OF THINGS AND ECOSYSTEM MAPPING

As part of our objective this year to develop our network and broaden our community, as well as build on our services to innovators and adopters, TheHill partnered with the Department of Primary Care, University of Oxford, on a PITCH-IN project.

TheHill is particularly interested in identifying gaps in the support network of ecosystem and to work to develop programmes, workshops and events to address those gaps, which companies are not presently supported by the TheHill and what opportunities and potential connections between companies exist in the ecosystem.

The project focusses on Internet of Things (IoT) technologies, seeking to understand the support they need, and to apply the academic framework NASSS to evaluate the barriers to adoption.

Early in 2021, we will conclude the project and also extend the IoT mapping to include all digital health companies and that work will be published as part of our efforts to identify and build the Oxfordshire digital health ecosystem.

TheHill sourced innovations as case studies for the project, and lead on the ecosystem mapping component. This component seeks to report on:

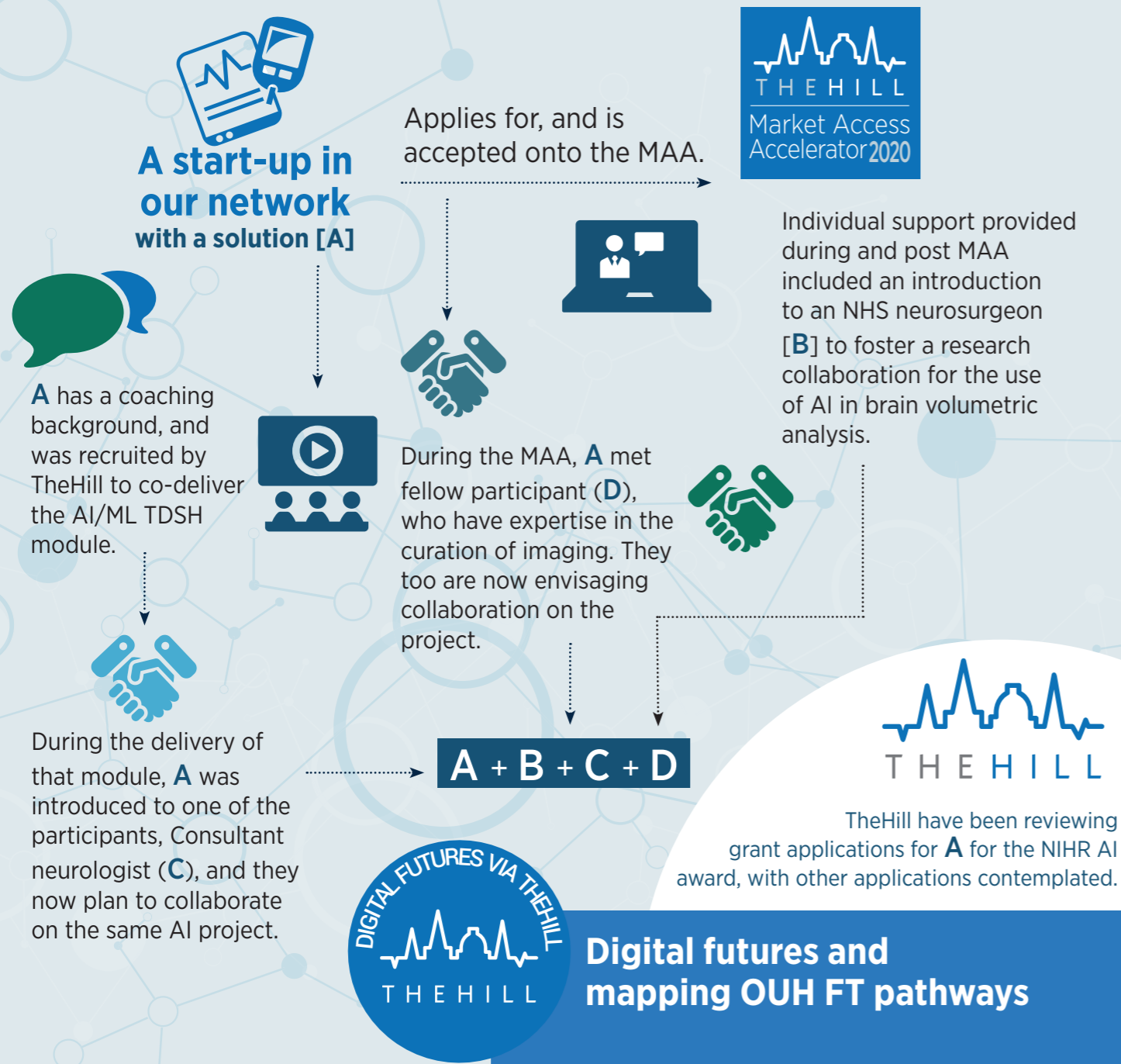
1. What IoT related companies and projects exist within Oxfordshire; including exploring their connections to Oxfordshire ecosystem, structural components, other companies, and how they have found integrating or working with the NHS.
2. The structure of the IoT innovation ecosystem of Oxfordshire; what makes it supportive or inhibits its growth, what support is provided to innovators and how this could be improved.



We have made great progress by increasing our network of contacts to over 600 within the NHS and over 1,200 external.

Practical examples

Developer/clinician/grant application



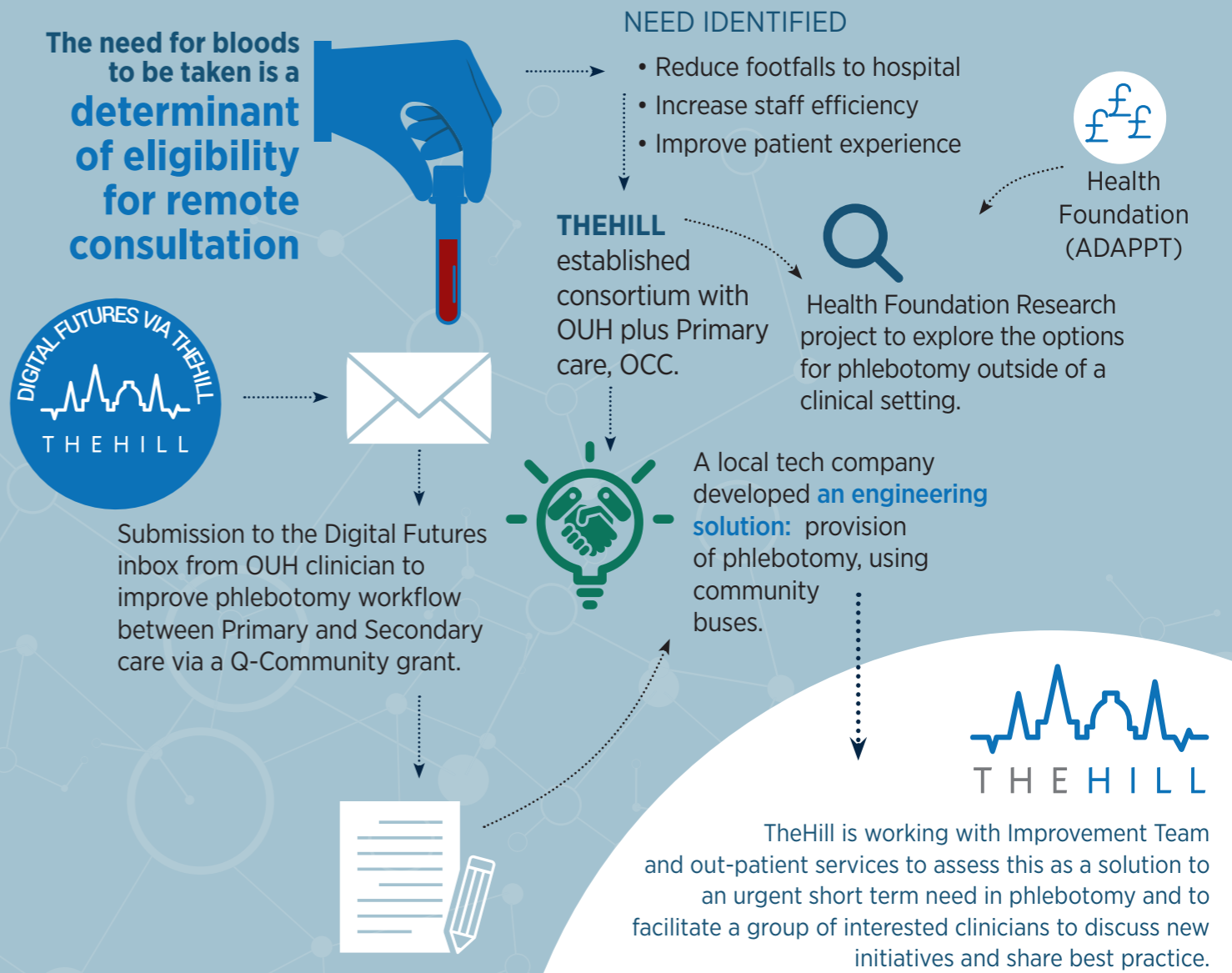
Digital futures and mapping OUH FT pathways

The publication of the 'Innovation and Technology Retrospective' drove several follow-on activities. One of these described the need for a straightforward mechanism to capture ideas that any OUH FT staff have for innovation in the Trust. David Walliker created the digitalfutures@ouh.nhs.uk email as a way of capturing these ideas - it was advertised in the OUH FT Staff Bulletin in July 2020.

Digital solutions for COVID-19 Recovery – your ideas wanted
 Digital solutions form a key element of Resuming clinical activity which was paused during the first Response phase of the COVID-19 pandemic, Retaining new ways of working such as virtual consultations with patients, and Reshaping services moving forward. We therefore want to hear from you. If you have ideas, please send them to digitalfutures@ouh.nhs.uk so they can be included in organisational thinking.

LISTEN > ENGAGE > SHARE > Please share this bulletin with colleagues who may not have access to email.

Bloods in the community



TheHill was asked to receive and collate these ideas, which are automatically forwarded to connect@thehilloxford.org. Each submission has been followed up for further information, progressed using the existing innovation pathways where appropriate, and also used as examples to help shape revisions to those pathways.

While many people have ideas for innovation, existing pathways for these to be progressed are not always understood. Together with NHS colleagues, we are now starting to co-design processes that match the right innovations with identified needs, and assisting them ready their business strategies and products to link them to the right partners.

Given the tension between institutional pressures to deliver both operationally, and in research and development, there is a space for TheHill to assist clinicians and innovators from within and from outside the NHS to navigate the processes, while at the same time working to streamline the pathways.

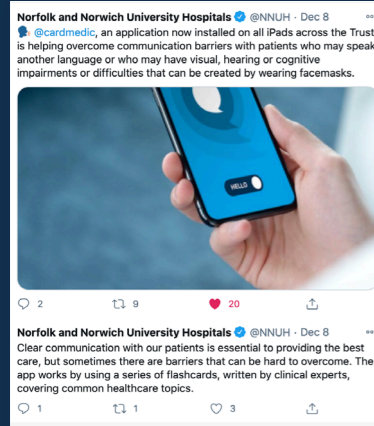
During the course of 2020 we have significantly increased the breadth and depth of our network within OUH. We are working closely with colleagues within the QI hub, Improvement Team, R&D, Commercial, IM&T, and Procurement.



SUPPORTING INNOVATORS



NHS MARKET ACCESS ACCELERATOR



The Market Access Accelerator (MAA) is TheHill's flagship innovator support programme. Started in 2019 as a one-week intensive bootcamp on accessing the NHS, the 2020 programme was a fully-fledged accelerator programme run over five months, for 18 companies over two cohorts (early and late stage).

The NHS Market access accelerator 2019 & 2020 were part of the European Regional development fund 'Oxfordshire Innovation Support for Business' programme.



The early stage cohort developed their value propositions and business models, whilst the later stage focussed on NHS introductions, sales strategies and investment. Both cohorts got a deep dive into the workings of the NHS, including reimbursement pathways, evidence requirements, piloting strategies and insights into the needs of clinicians and managers. Eight companies were presented at our investor pitch day and many are in current conversations with the NHS. Although the MAA focuses on technologies of relevance to the NHS, many of the concepts are widely applicable, in private healthcare, adult social care and direct to consumer.

MAA 2020 evaluation feedback



TheHill provides MAA participant entrepreneurs with six months of support and a springboard to connect with, and be part of the digital health ecosystem in Oxford.

Objectives and achievements

Companies in the programme significantly improved their market prospects and developed their business models, raised money through grants and investments, and increased their networks within the health and care sector. Participants also gained access to TheHill's wider portfolio, including 'meet the clinician' round-tables and networking events. Most of the companies continue to grow with an increase in headcount, further investment and scaling up of activities. The digital health companies we support can bring genuine value, efficiency and improved patient

outcomes, and we aim to give them the best possible chance of successfully connecting with the National Health Service. The 2020 cohort have been spurred into action by the urgent care paradigm created by the pandemic, responding to the critical needs of our NHS by creating new data measurement and logistical monitoring services to enable hospital staff to better care for patients. Others have continued to push forward innovations that will transform health and care despite difficult working circumstances and an uncertain environment.

GOING FORWARD

The Accelerator is now an established programme with fantastic feedback from participants and has been effective in developing their businesses. TheHill's position embedded within the NHS brings a unique perspective which, coupled with our extensive network and enterprise education expertise, is ideally placed to accelerate businesses for the benefit of NHS staff and patients, and provide a springboard for international expansion.

The ERDF funding has allowed us to develop a strong programme and has put us in an excellent position to expand activities. For 2021 we are seeking commercial sponsors to support the delivery of the programme, and have to date secured two sponsorship deals, with several more in the pipeline. Sponsors benefit from a package of benefits including the opportunity to partner with us on relevant sessions, make an offer to our MAA alumni and be featured on our communication channels.

Further details can be found in our sponsorship brochure.

Our participants continued to develop their start-ups, improve their value propositions, taking strides in technical development and winning grants.



11 MILLION in investment secured by MAA 2020 companies	41 POSITIONS of employment created	2 RESEARCH collaborations initiated	4 NEW innovations launched
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"The team at TheHill brought together an amazing array of experts to help us better understand what to do next to further develop and validate our technology to take it to market. The programme saved us months of work and lots of money - a hugely valuable experience."

Ravi Janapureddy, RCube Health Ltd

"The MAA exceeded expectation as excellent mentorship, good speakers, good move to online delivery despite COVID-19 challenges, good list of investors joining the demo day and nice introductions"

Rachael Grimaldi, Card Medic Limited



Innovation Support for Business

TheHill is delighted to have been funded by the European Regional Development Fund as part of OxLEP's Innovation Support for Business programme.

Innovation Support for Business (ISfB) is a three-year £5.2m programme which was funded by European Regional Development Fund (ERDF) to support innovative Oxfordshire entrepreneurs and businesses by:

- Assisting in developing and commercialising innovations.
- Enhancing research and innovation infrastructure in Oxfordshire.
- Promoting business investment in research and innovation.
- Developing links between businesses and researchers.

Over the past two years, partners from the University of Oxford, Cherwell District Council, Oxford City Council and Oxford University Hospitals NHS Foundation Trust (ourselves) have worked with OxLEP to deliver the programme. That partner involvement finishes at the end of 2020 although businesses can still access some support through the central team at OxLEP.

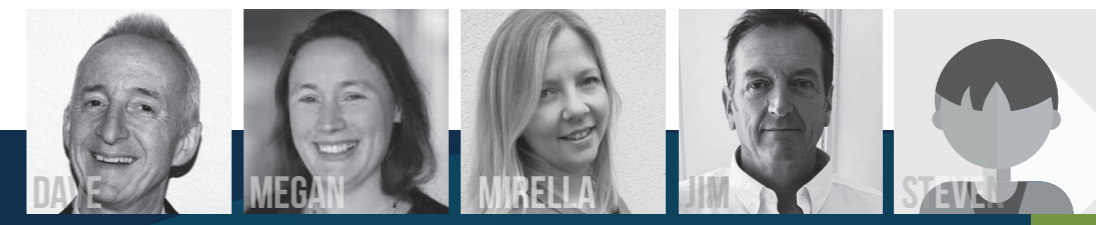
TheHill contributed to the programme by specifically supporting digital health companies in the Oxfordshire ecosystem. Over the course of the programme we supported 79 companies, delivering 1:1 support, introductions into the NHS, networking events, masterclasses, matchmaking with research organisations and support for writing grant applications in addition to our core Market Access Accelerator programme.

We have been delighted to work with a fantastic set of partners to support regional businesses and make a difference to Oxfordshire's and the UK's economy. As the programme draws to a close we would like to thank all of our many collaborators and contributors.

		TARGET	ACHIEVED
New enterprises supported			
Employment increased			
Research collaborations			
Products new to market			
Products new to the firm			



SUPPORTING INNOVATORS



Open API Bootcamp

Cross Market Integration for Digital Health

- 38 COMPANIES applied for 2020 programme
- 14 COUNTRIES represented in the applications
- 15 COMPANIES shortlisted by selection panel
- 10 COMPANIES selected for Bootcamp

OPEN API BOOTCAMP

TheHill's Open API Bootcamp introduced participants to the challenge of expansion across territories and integration with electronic patient records (EPRs) to simplify workflow and make adoption more likely. The technical training focussed on the Fast Healthcare Interoperability Resources (FHIR) standard Application Programming Interface (API), the international standard to integrate with major providers of EPR systems.

With a cohort of teams at various stages of development, the programme was designed to cover topics from basic business and entrepreneurship skills, through to understanding the technical integration challenges and approaches of working within other territories. Participating companies were

differentiated by their technologies and target markets, covering a broad spectrum of health and care delivery. This facilitated an extensive exchange of ideas, with the potential for future collaborations and the creation of a strong cohort of peers to support the teams as they develop their businesses.

STRUCTURED AROUND 3 CORE STREAMS

- Integration with existing technology and systems (technical training and healthcare insights).
- International expansion (deep dive into the UK's NHS and the health systems of Sweden and Ireland).
- Business development and modeling (getting the value proposition right and how to adapt this to different healthcare models across Europe).

A 6-week training programme supporting early stage start-ups and SMEs focused on digital health tackling.

3 KEY CHALLENGES...

<p>Customer acceptance</p>	<p>Integration with existing technology and systems</p>	<p>International expansion</p>
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Splendid experience and plenty of learning. The best of class !!
LinkedIn. Azhar Md B3 Digital Solutions

"I would definitely recommend the process, it gives a good rounded view of building out your company business plan, but then also gives technical guidance around working with APIs and how you can leverage them in your business"

David Grimaldi, CardMedic

The Bootcamp was designed and project managed by TheHill Oxford, with curriculum jointly developed and delivered by the three EIT Health funded partners TheHill, Innovation Skane and Trinity College Dublin; and two industry partners, InterSystems Corporation and Cerner Corporation.





A snapshot of some of our 2020 supported companies

SUPPORTING INNOVATORS

IMPACT STORY

CardMedic®

CardMedic is a free flexible digital communication tool designed to improve the transfer of vital information between frontline healthcare staff and patients, no matter the barrier – be it language differences, visual, hearing or cognitive impairment, or personal protective equipment. It encompasses an A-Z collection of communication flashcards covering common healthcare topics, written by clinical experts.

The Journey with TheHill
CardMedic® took part in Market Access Accelerator (MAA) Programme 2020. CEO Dr Rachael Grimaldi explains the involvement with TheHill helped them define the value proposition of the business as well as the company structure.

CardMedic® were invited to take part in TheHill investment day, having pitched their pitch and financial model. Following this, they began discussions with a number of potential investors and have been able to pursue relationships with various trusts. They are also progressing with technical developments of their product.

"I have been so impressed with the whole team, every member of TheHill has gone over and beyond what they needed to do to support us."
Dr Rachael Grimaldi, CardMedic

Concept to launch in 72 hours
£50,000 Innovate UK funding awarded
Government backing
Clinical endorsements
Patient safety approved
NHS Digital Data and Security Protection Toolkit approval
International press coverage

www.thehilloxford.org www.cardmedic.com

IMPACT STORY

Medwise

Medwise helps clinicians find answers to their clinical questions. Information in a time of Covid

Enabling communication between clinicians and patients when talking doesn't necessarily do the trick

Over 100m patients in the UK and US have underlying communication needs. There is an astounding £25bn deficit in service provision, exacerbating health inequalities and risking patient safety, experience and quality of care.

CardMedic® is a website and app designed to improve communication between frontline healthcare staff and patients no matter the barrier, whether it's visual, hearing or cognitive impairment, foreign language or PPE (Personal Protective Equipment).

CardMedic® is a unique solution in the digital communication tools market. Written by a network of clinical experts, it replicates conversations around common healthcare topics in a simple A-Z format to guide the clinical interaction. The tech is currently being trialed in health care settings.

Dr Rachael Grimaldi is an anaesthetist with the NHS. When the pandemic started to escalate, she was visiting family in the United States. Her immediate instinct was to return to the frontlines. The challenge of being with her three children, all under four, was compounded by how difficult this had become as borders across the world closed. It was only months later, and after some cancelled flights, that they finally arrived home in late July.

With daily updates from friends and colleagues, she was desperate to help. Knowing about a COVID-19 patient support app, which in turn led to the formation of CardMedic®. They pushed back from terrified when an intensive care unit in a secondary hospital called about the barrier of their personal protective equipment. The global societal need for clear communication had been severely disrupted and existing methods of sending messages on paper or whiteboards isn't a practical and scalable solution for use during the pandemic. Having the need to solving this massive hurdle, led Dr Grimaldi to think of digital solutions.

Asking these sorts of questions led her to create a directory of flashcards on common topics. They are phrased as if the clinician is talking to the patient, covering patient points and asking basic, mostly yes or no questions.

Team information
Dr Rachael Grimaldi
Founder and CEO, CardMedic® NHS Anaesthetist, Associate Medical Director and Research Group Lead, Brighton Maritime. Multiple previous national and international awards for patient safety initiatives.

David Lane
CEO, CardMedic®. Experienced in HealthTech space having developed several award-winning enterprise apps. Background in computer science and AI.

Alex Grimaldi
CEO, CardMedic®. Senior Financial Manager leading all aspects of financial operations and asset management, including oversight and development of strategic finance and investment data.

Tim Grimaldi
Founder and COO, CardMedic®. Director of award winning e-commerce business, having developed a multi-million pound global network. Over 15 years' experience in digital technology, business development and marketing.

COVID-19 Adoption technology

Helping clinicians make better clinical decisions by using AI software to search through exponentially increasing sources of information

Even before COVID-19 spread around the world, pushing health care even in the most advanced systems to the limit, the increase knowledge and information was challenging at best. As clinicians, scientists and researchers rush to understand COVID, there has been an explosion of information but in varying quality.

According to LitCovid, as of 24 November '20, there had been 73,936 COVID-19 related publications, with the number of new publications doubling every 1.4 weeks. In the UK, a variety of organisations continue to published COVID-19 guidelines, constantly revising and updating them making it difficult for clinicians to keep up with the latest information while caring for their patients. Medwise.ai is working hard to help clinicians navigate and find the answers they need instantly from the exponentially increasing sources of information.

Team information
Dr Keith Tsui
CEO and Co-Founder is a medical doctor with an MPH in Bioscience Enterprise from Cambridge. Dr Tsui also worked as a management consultant at Capgemini to improve the productivity of NHS hospitals. Before founding Medwise, he was a clinical product manager at Medipaq (now Huma), a remote patient monitoring device co-developing with Apple and Samsung. He has worked with Apple and Samsung. He has worked with Johnson and Johnson and Smith and Nephew.

Dr Daniel Dunn
CEO and Co-Founder. Dr Dunn holds a PhD in Natural Language Processing and Information Retrieval from the University of Edinburgh. The focus of his PhD thesis overlaps with the problems they are solving at Medwise. He has experience as a software engineer at Google and as an applied scientist at Amazon. Dr Dunn is responsible for research, development and engineering of the Medwise product.

COVID-19 Adoption technology

During our Hill involvement it has been extremely helpful to understand where our product could fit and develop the business model and financials... we have some interest from investors and are following up these leads.
Dr Keith Tsui, Medwise.ai

medwise.ai

IMPACT STORY

Albus Health

Albus Health is an Oxford University spin-out company who have developed a small non-contact laptop device that automatically monitors a range of symptoms and metrics at home, without the patient having to do or wear anything. This CE marked product helps pharmaceutical companies collect objective evidence in clinical studies, helping them extend claims on their drugs and improve their clinical trial efficiency.

Formal and informal support to innovators

TheHill engages with innovators through formal programmes including the MAA and the OAPI bootcamp, as well as other workshops, but support also takes place through informal activities, including 1:1 mentoring, guidance in navigating trust processes, technical assistance with grant applications is also available to the innovators supported.

Albus Health, graduated from the 2020 MAA, having been selected to pitch at investment day in September have secured grant funding of £1.5m. TheHill continues to facilitate introductions and referrals, as well as assisting with the writing of grant applications.

Team information
Mikesh Udani
Co-Founder and CEO - background in Mathematics (Ox), Computer Science (Oxford) and Finance (derivatives trading at Deutsche Bank) former Oxford Biodesign Fellow.

Dr William De
Consultant and Medical Director, former clinician, Oxford and NHS England Entrepreneur Fellow, former Oxford Biodesign Fellow.

Rachael Wylie
EU CEO of CSF Health which she exited to Genstar Capital in 2016. CSF Health (now Signant Health) is a global provider of outcome measure medical devices to pharmaceutical clinical trials.

Secured 2.9m in funding through grants & loans
These include three InnovateUK grants
Secured one of the first AI in Health and Care awards
Contracted for clinical study
Expanding number of employees

Currently hiring!
Moving from early adoption to a rapid growth phase, solving their first product and beginning on the next means that Albus Health are growing, they are currently looking to fill seven positions.

NIHR National Institute for Health Research

www.thehilloxford.org www.albushealth.com

IMPACT STORY

Canary Care

Canary Care is a passive activity monitoring system that uses sensors, placed around a Facilitating the linkages between our

Informed care decisions, earlier preventative support and proven savings to users

Canary Care supports carers and those with care needs by providing extremely simple to install monitoring services that help vulnerable people to remain living independently for longer. Used by families, local authorities and care organisations across the UK and in Europe, it uses sensors to gather information about daily routines to provide tangible insights about wellbeing. The information provided helps users to make the right call and prevent little niggles turning into bigger problems.

With information and alerts available via web portal, mobile or text messages, Canary Care is used as a tool by families and loved ones for peace of mind or as part of a more comprehensive care programme. The data can be viewed on their website or mobile apps, making it easy to see current activity, as well as spotting longer term trends or behavioural changes.

Alerts can be sent by email or text to confirm that everything is okay or flag potential issues (e.g. front door opened after 11pm). Evidence collected by Canary Care enables informed care decisions, allows earlier preventative support and treatment and delivers proven savings to its users.

Introduction to procurement department at Oxford University Hospitals NHS Trust
Introduction to the Independent Living sector (Hallmark and Adult Social Care (ACC))
Identified for a case study for Internet of Things research project

While much of the activity of TheHill is focused on secondary care, our network also includes primary and social care, with the specific goal of removing barriers between holistic care.

Canary Care are well suited to contribute to the research community which is part of the ecosystem of health.

NIHR National Institute for Health Research

canarycare.co.uk

THE BRIDGEHEAD PROGRAMME

Bridgehead provides European start-ups and scale-ups with individualised support in growing their validated businesses beyond their home markets. During this process, start-ups are guided by members of EIT Health's vetted European network of top-notch accelerators, who open the right doors to establish and grow cross-border business.

SMASH MEDICINE

Smash Medicine is running an EIT Health funded student competition in 2021. TheHill is assisting in a minor role providing mentoring and assistance with their sustainability model. We have helped with advice on financial modelling.

SmashMedicine

LIVING OXFORD

Living Oxford is a network organisation set up to support living labs in and around the city. As one of the founding partners, TheHill supports the programme which aims to disseminate best practice. We are responsible for the health care theme of the project, and have been tasked with establishing a special interest group; bringing together the appropriate people.

MEET THE INNOVATOR DAYS

Meet the Innovator: Developer Scheduled to take early in 2021

As with the Meet the Clinician days, Meet the Innovator and Meet the Creator days are intended to introduce start-ups and developers to each other to encourage potential collaboration. The aim is to ensure that development needs are better understood and for relationships to be built.



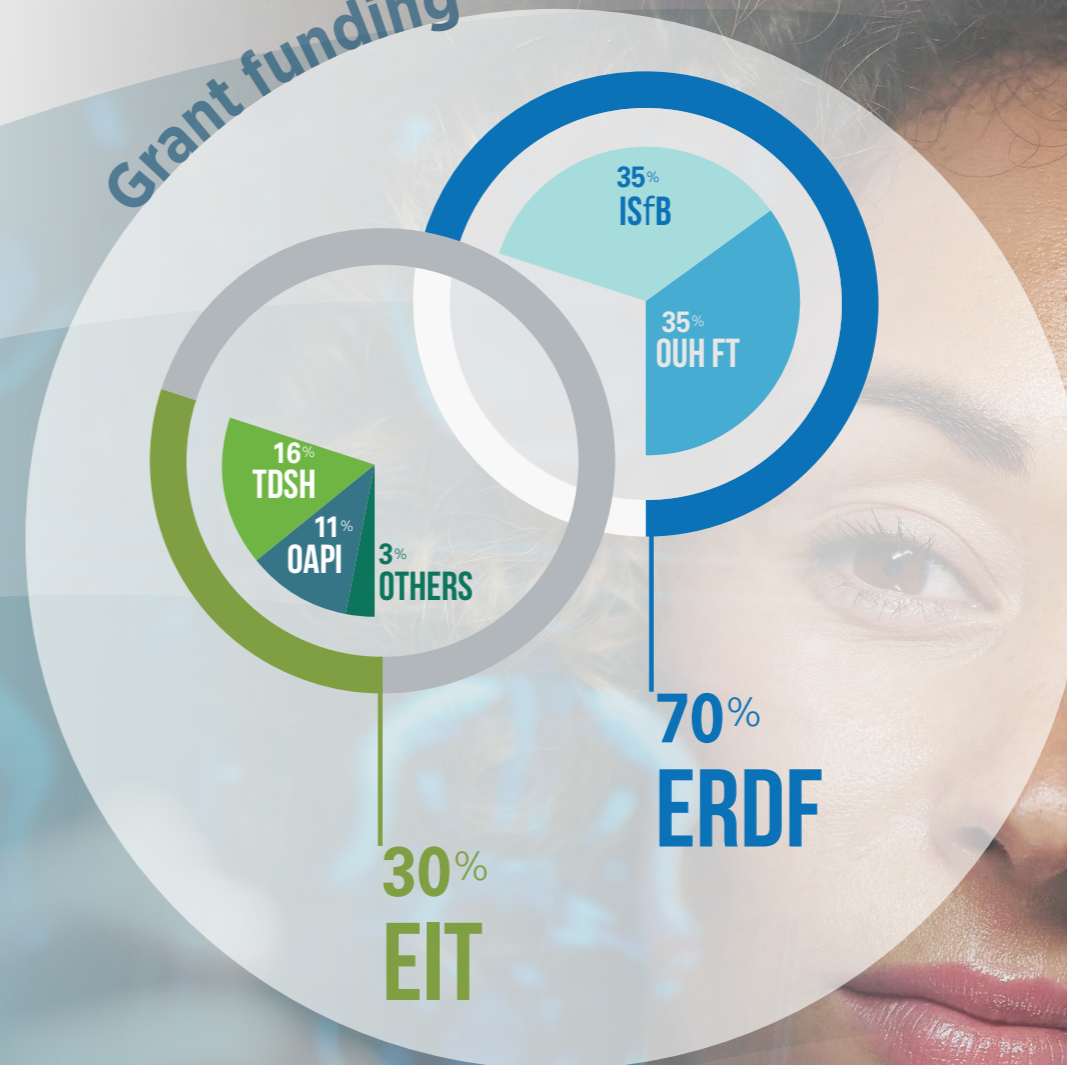
Metrics and Best Practice - Role for Living Oxford

THEHILL IN REVIEW



- We have a small, but agile and skilled team, with wide health, tech and innovator networks; locally, nationally & internationally.
- We have successfully transferred all our face-to-face programmes and social events to on-line ones.
- We have increased our network of contacts and relationships both inside and external to NHS FT significantly

Grant funding



Medwise.ai | Medwise Investment of £1m secured – Episode 1 Ventures

ALBUS HEALTH | £2.9mn investment secured funding through grants and convertible loans, including Innovate UK

VISIBA CARE | A significant new investment of £8.7m secured, and registration on a national framework

Bellevie | Bellevie Care, an accredited Living Wage Foundation employer, has increased their team by 35 people

Dynamx MEDICAL | Investment secured through Innovation grants and Angel investors

RAIQC | An ongoing spin-out conversation with OUH and OUI for RAIQC.

