



# **IMPACT REPORT**

A showcase of collaborative NHS-led innovation illustrating the impact of activity, initiatives and partnerships supported by InnoScot Health



Welcome to our Impact Report – a showcase of collaborative NHS-led innovation and a celebration of activity, initiatives and partnerships supporting sustainable, inclusive innovation across Scotland.

InnoScot Health has been working in partnership with NHS Scotland for 22 years to support innovation as part of a strategic drive to improve patient care.

During that time, it has remained a knowledgeable catalyst for change, empowering and inspiring the country's diverse, dedicated healthcare staff to develop groundbreaking ideas and drive a better future.

#### **A proud history**

The <u>effective management of intellectual</u> <u>property (IP) generated by NHS employees</u> has long been recognised as crucial to advancing healthcare innovation.

This led to the establishment of InnoScot Health (then known as Scottish Health Innovations Ltd) back in 2002, as a dedicated Technology Transfer Office (TTO), supporting NHS Boards across Scotland to protect, manage and commercialise IP.

Over the last 22 years, that support has extended to a range of additional innovation services including idea evaluation, regulatory support, funding and investment, and project development. It has led to the launch of products, services and successful spinouts which are improving patient care and generating income for NHS Scotland, and a portfolio of emerging innovations all originating from talented and committed NHS innovators.

#### **Power of collaboration**

Such successes take time, combined expertise and commitment; and this report illustrates the significant impact when clinical and commercial skills unite.

The report marks a midway point in the delivery of our strategy for 2021-26, <u>Innovating Together</u>, and a change to the future operating model of InnoScot Health. While that model is evolving, our skilled team remains committed to ensuring dynamic healthcare innovation is very much to the fore at this vital time of transformation.

Our next phase of growth will be about building on the already strong foundations and partnerships developed over the last 22 years and delivering on our mission of an entrepreneurial, collaborative Scotland where healthcare innovation thrives.





This report mirrors the strategic commitments set out in our 2021 – 2026 Strategy - Innovating Together, detailing progress and collaborative impact achieved thus far. It illustrates what can be achieved when we work together to harness our collective clinical and commercial expertise.

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Each section is complemented by case studies that bring to life the true value of InnoScot Health activity; and provide insight into the range of innovators and projects supported.

## 38 LOOKING FORWARD

As the model of innovation support from InnoScot Health changes, we are in a transition period until 1 April 2027. During this time InnoScot Health will continue to work closely with NHS Boards and partners across Scotland, developing tailored solutions that support innovation as part of a sustainable health and care system.



### **CONNECTED, COLLABORATIVE COMMUNITY**

InnoScot Health set out that by 2026 success would be: An experienced, informed, empowered entrepreneurial healthcare environment in Scotland.

To achieve this, InnoScot Health has worked to better **understand** our audience, **connect** across the sector, **inspire and support** healthcare innovators, and **partner** with NHS, academia and industry to maximise skills, expertise and the collective ambition to advance healthcare innovation.

#### **UNDERSTAND**

In 2022, InnoScot Health commissioned an independent survey to gain vital insights into staff attitudes towards innovation, as well as a stronger understanding of how best to encourage innovation at a vital time of NHS recovery.



of healthcare staff believe nnovation is important to improve NHS Scotland services



of healthcare staff have ideas to improve how healthcare is delivered





The NHS workforce message is clear - we can and want to innovate at this pivotal time for healthcare." Graham Watson **Executive Chair** InnoScot Health

The survey was administered via online questionnaire and the data collected between 3 October and 4 November 2022 with a total of 602 eligible responses received from across all NHS Boards in Scotland.

### CONNECT

InnoScot Health launched a new website acting as the digital front door for innovative healthcare professionals to access guidance and support. With online idea submission, virtual consultation bookings, news, insights and resources, it provides 24/7 access to InnoScot Health combined with a multi-channel approach to strengthen engagement across the sector.



**Number 1** in Google **search** for organisations of our type through organic content







of watch time



**13,407** social engagements average of 479 per month



increase in virtual consultations year on year



19.1% increase in newsletter subscribers



1069 pieces of media coverage

average of 38 per month



**2,446,400** estimated views

average of **87,371** per month

Data presented from March 2021 - September 2024



### **INSPIRE AND SUPPORT**



Recognising great ideas can come from anyone and anywhere, InnoScot Health welcomes ideas through a simple online submission form. Every idea submitted is evaluated on commercial viability and potential to improve patient care and generate a revenue return for NHS Scotland.

332 disclosures received

**190** from NHS Boards

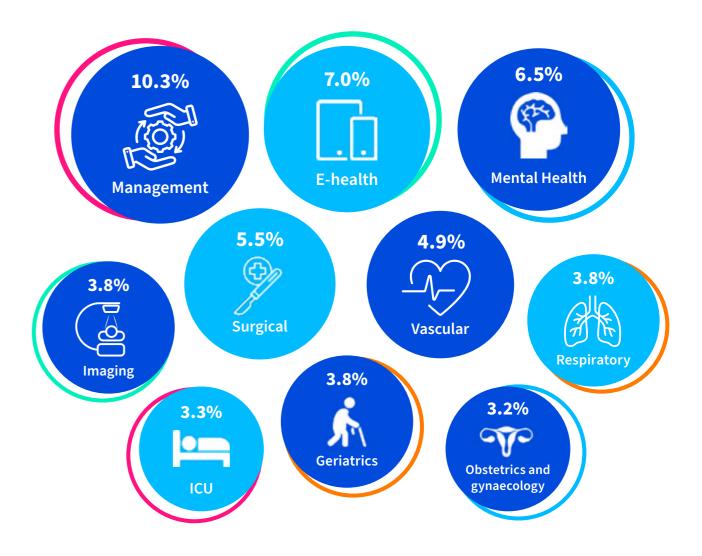
**142** from external innovators

NORTH	63
NHS Tayside	37
NHS Grampian	21
NHS Highland	3
NHS Western Isles	2
NHS Orkney	0
NHS Shetland	0
SOUTH EAST SCOTLAND	57
NHS Lothian	48
NHS Fife	8
NHS Borders	1
WEST	57
NHS Greater Glasgow and Clyde	26
NHS Lanarkshire	11
NHS Golden Jubilee	7
NHS Ayrshire and Arran	5
NHS Forth Valley	5
NHS Dumfries and Galloway	3
SPECIAL BOARDS	13
NHS National Education Scotland	5
Scottish Ambulance Service	4
Healthcare Improvement Scotland	2
NHS National Services Scotland	1
Public Health Scotland	1
NHS 24	0
The State Hospital for Scotland	0



Data presented from March 2021 – September 2024

Innovative ideas received span a range of medical disciplines, with over 50% of the disclosure portfolio represented by:



Data presented from March 2021 – September 2024





### Case Study 1: **Empowering NHS workforce with innovation learnings**

It is vital that we build a healthcare ecosystem that harnesses the talent, expertise and commitment of the NHS workforce, and encourages entrepreneurs to flourish. Part of this is providing education on key innovation topics, promoting knowledge exchange and collaboration across the sector and spotlighting home-grown success stories.

#### **InnoScot Health webinar series**

Recognising webinars as an accessible, growing form of engagement, InnoScot Health launched a series of webinars in early 2023. Held on Microsoft Teams the bitesize sessions explored key innovation topics and provided an opportunity to hear from knowledgeable speakers across the sector.

The primary aim was to increase knowledge around subjects ranging from navigating the innovation landscape to funding, regulatory and intellectual property advice, commercialisation and topical issues such as entrepreneurship. The webinars were intended to provide an educational resource which the NHS Scotland workforce could return to, increase innovator engagement, and familiarise NHS workers with the expertise available from InnoScot Health.

#### **Insightful topics**

From 'Navigating the NHS Innovation Landscape' to 'AI in Healthcare', 'Medical device regulation' and 'Business tools to support healthcare innovators' – a wealth of topics have been explored, attracting guest speakers as diverse as former Innovation Minister Richard Lochead, CPI Director of Business Development - Pharma, Alix Mackay; CEO and Chief Medical Officer at My Way Digital Health (MWDH) Dr Debbie Wake, plus legal, regulatory experts and many more.

Alongside developing content and topics that are interesting to the innovation community, central to success of the webinar series is working with speakers to promote the sessions. To maximise profile and attendance the InnoScot Health team prepare news articles, social assets, monthly newsletter and engage stakeholders in sharing content with their staff and communities.

#### **Impact**

The webinar series has been positively received with valuable support from NHS Board communication teams enabling reach across the NHS workforce. With growing audiences and more diverse topics being added, the series continues to deliver through 2024 and 2025.





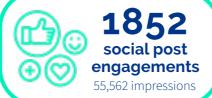
Our aim is for the series to be a very instructive, easily accessible, and interactive resource for healthcare innovators at all stages who are considering how best to deliver great ideas into patients' hands."

Gillian Henderson Head of Project Management InnoScot Health















#### **PARTNER**

Health innovation requires collaboration and support, and diversity of expertise and experiences. At InnoScot Health our work is underpinned by partnerships – with innovators, licence partners and spinouts, NHS Boards, Universities, and Scottish Government. Sustaining these relationships and identifying fresh partnership opportunities has, and remains, a focus, to inspire future generations of innovators and maximise the innovation potential across Scotland.

#### STRATEGIC PARTNERSHIPS

Strategic partnerships across the sector build on successful long-standing relationships and bring together significant collective expertise to accelerate medical and healthcare opportunities.



#### **December 2023**

InnoScot Health contracted to provide ongoing regulatory support for Decision Support Software Tools now managed by Healthcare Improvement Scotland and being rolled out nationally.



#### October 2023

InnoScot Health is part of the consortium led by Heriot-Watt University and the University of Dundee and includes Universities of Glasgow, St Andrews, Edinburgh Napier, one Education College, 5 Civic Bodies, 1 Hospital, and NHS Tayside Innovation Hub. The theme is Accelerating and Levelling up Research Impact and Innovation in and for the NHS. The funding of £2.49million is provided by EPSRC-funded PB-IAA (Place-Based Impact Acceleration Account), and InnoScot Health will deliver regulatory support as part of the programme.



#### February 2023

InnoScot Health partners with The Digital Health & Care Innovation Centre (DHI), NHS Education for Scotland (NES), and Scottish Enterprise to support Scottish innovators take part in the NHS Clinical Entrepreneur Programme (CEP) - a free entrepreneurial work force development programme aimed at NHS staff and healthcare professionals.



#### October 2022

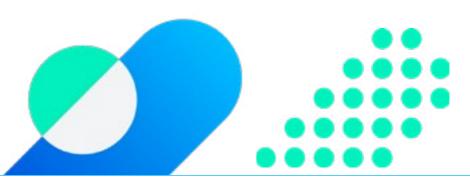
InnoScot Health and Heriot-Watt University's Medical Device Manufacturing Centre (MDMC) sign a Memorandum of Understanding (MoU) to accelerate medical and healthcare opportunities.





InnoScot Health aims to continually add value to the innovation landscape through non-project activities. This often includes the provision of expert commercial advice and support to teams and initiatives across the country including:

- Innovate UK Contracts for Innovation, formerly known as The Small Business Research Initiative or SBRI. This includes sitting on project and business steering groups, and supporting assessment of applications. It enables provision of commercial, medtech and regulatory knowledge, and ensures applicants have a strong business plan and realistic commercial prospect. Advice has included SBRI Eye Health Working Group, Dermatology AI Consortium, Mental Health SBRI, Wrist and Ankle Fracture SBRL
- Provision of support and expertise to the development of content for Level 2 training module for Medical Devices and Medical Device Regulation (MDR) Training for Health and Social Care (HSC) staff in Scotland which will be implemented for all NHS staff in TURAS.
- Participation in various working groups assessing the challenges and opportunities in relation to medical device regulation
- Bespoke training and education to NHS Boards and regional innovation hubs including training sessions on Intellectual Property, Medical Device Regulation, drop in clinics, joint events, hackathons, mixers and education days.
- Review and input to individual NHS Board Intellectual Property policies, ensuring best capture and protection of IP within NHS Scotland and appropriate processes are in place.
- Regulatory input and letters of support for grant applications to support future collaborative projects across Scotland







### Case Study 2: Encouraging local innovation with NHS Grampian

The NHS workforce are key agents of change, and whilst submissions for innovative ideas are always welcome through the InnoScot Health website, complementing this with targeted regional solutions helps to improve awareness, engagement and results.

#### **Innovation Competition**

In April 2023, InnoScot Health and NHS Grampian teamed up to launch a local innovation competition to stimulate innovative thinking and problem solving in this diverse region with unique healthcare requirements. The competition was based on peer-reviewed research, similar to those run at Massachusetts Institute of Technology (MIT) in Boston. The competition was open to all staff members – in any role and from any department – with entries evaluated by InnoScot Health and NHS Grampian.







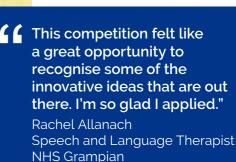
2 selected for design and development



We are proud to support this initiative which encourages our innovative staff to express their ideas about how the care they provide could be improved. They know better than anyone where technology could help deliver better outcomes for our community and what these products need to look like."

Dr Andy Keen Clinical Lead for Innovation, NHS Grampian





#### **Winning Entries**

Rachel Allanach, Speech and Language Therapist (SLT) from Aberdeen Royal Infirmary was the overall winner with a seating solution to assist acute and community therapists working with patients. In further support for collaborative innovation, Heriot-Watt University Engineering students took this on delivering a report and prototype in April 2024. Commercial partners are now being sought to translate this idea into a final product.

Runner-up was Clare Tarr who stood out with her fresh approach to helping staff undertake flexible endoscopic evaluation of swallowing (FEES), an advanced skill during which a thin, flexible instrument passes through the nose. Students at Glasgow School of Art have worked on a prototype which is now being reviewed for commercial feasibility. Consultant Radiologist Dr Arnab Rana – also from Aberdeen Royal Infirmary – was recognised for his radiology referral management submission. The Al-based idea aims direct referrals through the most optimal route, enhancing speed and effectiveness of care for each patient.



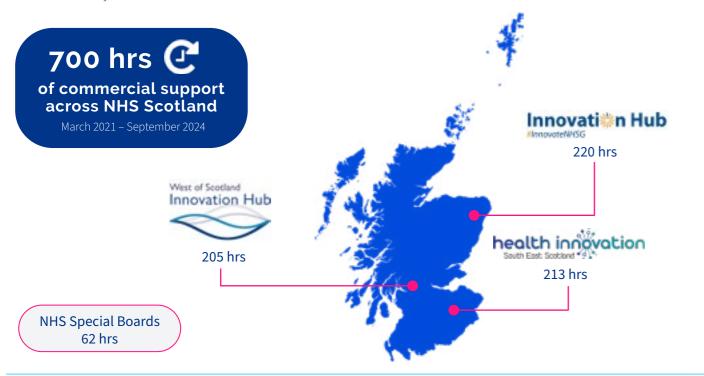
### HARNESSING EXPERTISE FOR OPTIMAL INNOVATION

InnoScot Health set out that by 2026 success would be: An internationally recognised health innovation environment combining the best clinical and commercial expertise.

To achieve this, InnoScot Health has offered **commercial support** to all NHS Boards across Scotland helping to unite specialist innovation skills with NHS knowledge and ambition. Our regulatory **consultancy** has equipped innovators with knowledge and confidence to successfully navigate the often complex medical device regulatory landscape; and working collaboratively across the sector an evolving, and diverse **pipeline** of healthcare innovations are continually progressing.

#### **COMMERCIAL SUPPORT**

The **commercial support** offered by InnoScot Health enables busy healthcare professionals to manage clinical and personal commitments alongside their entrepreneurial ambitions. It also ensures dedicated innovation expertise across intellectual property, funding and investment, project management and commercialisation which is readily available to NHS Boards across Scotland.





In reviewing satisfaction of InnoScot Health services

of respondents were

satisfied or highly satisfied

#### Respondents rated highly

Fase of contact Quality of response Promptness of response Knowledge of team

of respondents felt that the role and remit of InnoScot Health was clear and that InnoScot Health formed an important part of the innovation landscape

#### REGULATORY CONSULTANCY

Provision of consultancy, training and advice to NHS health boards, plus companies or universities working in partnership with NHS Scotland ensures awareness and compliance with medical device regulations and supports the design and development of products under an accredited regulatory framework.

hours of regulatory support to NHS Scotland

attendees at training and webinars and advice

our own hosted InnoScot Health webinars, plus those ran in collaboration with Heriot-Watt University's Medical Device Manufacturing Centre (MDMC)

Regulatory consultancy provided to



Scottish **companies** 

SMES, startups and spinouts grow their businesses in and beyond the UK. with advice on CE marking and FDA regulatory frameworks.



#### **Regulatory strategies** written

supporting pre-startup teams, SME's and spinouts to raise funding, and supporting new startups entering the healthtech sector.

**Membership on** 6 strategic advisory boards

providing regulatory insight and advice.

thought leadership pieces on changes to the medical devices regulatory framework

[Data March 2021 - September 2024]





### Case Study 3: Global accreditation for Glasgow health-tech firm

The medical device sector is one of the world's most highly regulated, with manufacturers needing to meet stringent requirements to sell goods into UK, EU, US and other markets. If SMEs are not enabled to meet regulatory challenges, there is a risk that innovators will be unable to commercialise their ideas, impacting vital investment in the health tech sector and patients not benefitting from potentially life changing new technologies and devices.

#### **MR CoilTech**

MR CoilTech designs, tests and manufactures specialised radiofrequency (RF) coils, the devices responsible for generating and receiving the signal required to produce images of the body, for new generation, ultra-high field MRI (Magnetic Resonance Imaging) scanners.

The specialised, world-leading coils developed by MR CoilTech enable greater resolution brain scanning, supporting researchers to learn more about brain conditions such as stroke, vascular dementia, brain tumours, Parkinson's and Alzheimer's Disease in greater detail than previously possible.

With rapidly growing interest in MR CoilTech's products from commercial partners and MRI research centres worldwide, ISO Accreditation provides a mark of quality and competence.

#### **Support and collaboration**

InnoScot Health signed a contract with MR CoilTech in 2022 to provide and implement an ISO13485:2016 Quality Management System. Since then to present day, Innoscot Health provides regulatory advice and support and project management for the continuing development of head coils for research playing a significant role in helping the company navigate the regulatory landscape. This resulted in MR CoilTech receiving globally-recognised ISO 13485:2016 accreditation in April 2023 after being recognised by the British Standards Institution (BSI) for operating a compliant Quality Management System and meeting strict guidelines. Through on-going work with InnoScot Health, MR CoilTech has been successful in surveillance audits by BSI and continues to maintain its accreditation.

#### **Impact**

The prestigious ISO accreditation creates the opportunity to advance these devices to the global market, and recognises MR CoilTech as a reliable supplier of RF coils and accessories for ultra-high field MRI research, as well as its contribution to bringing the next generation of MRI scanners to market. The company growth also brings wider benefits to Scotland including new high-value engineering opportunities.





This accreditation will support MR CoilTech to continue to grow and deliver devices world-wide to enhance advanced imaging and allow researchers to study images at an exceptionally high resolution, advancing research and perhaps leading to new ways to diagnose or treat patients"

> Dr Shajan Gunamony Director of MR CoilTech and Head of MRI RF Engineering at the University of Glasgow



### **QUALITY MANAGEMENT**

InnoScot Health operates an ISO13485:2016 Quality Management System (QMS) – an internationally recognised standard for quality management systems in the design and manufacture of medical devices. This framework ensures all medical device development supported by InnoScot Health is carried out in a way that is compliant with applicable standards and directives.



An overhaul of the QMS system was undertaken by InnoScot Health during 2024, ensuring the organisation is up to date with all the standards, and will form part of continuous improvement. This offers specific benefit to innovators allowing them to demonstrate governance, risk and compliance which will accelerate the design, manufacture and route to market for medical devices.

#### PROJECT PIPELINE

InnoScot Health adopts a bespoke approach depending on project requirements. A dedicated Project Manager is allocated to selected projects, acting as the liaison point between InnoScot Health, the innovator, partner NHS Board, and any future commercial partners.



Bespoke support from InnoScot Health includes the protection of NHS Intellectual Property, prototype development and testing, sourcing funding streams, liaison with licence partners and budget impact analysis. The aim is to accelerate ideas along the project pipeline, with the ultimate goal of commercialisation.



### **Consultancy 7**

The provision of specific services to facilitate project development and commercialisation.

## **Selected 8**

**Evaluation 12** 

Projects being assessed for

their benefits to patients and

clinical practice, feasibility,

intellectual property position

and commercialisation potential.

Projects that have progressed beyond the initial evaluation, including projects taken to any stage of further development.

#### **Advice 19**

Projects where a one-off piece of advice has been provided or a longer-term piece of consultancy work has been undertaken (at no cost to the NHS health board).

#### **Development 7**

Projects that are in the process of design and development to create a final product that is ready to be brought to market.

#### **Commercialisation 5**

Projects that have resulted in a market-ready product or products, that are in the process of being licensed out to a manufacturer.

#### **Complete 5**

Projects that have been brought to market.



InnoScot Health has over 20 years of experience and we believe that our ability to bring innovations to market in investorready form is of significant value.\*

Gillian Henderson Head of Project Management InnoScot Health







### Case Study 4: Revolutionary approach to weighing patients

It is considered best practice among Intensive Care Unit (ICU) staff for patients admitted to hospital to have their weight measured accurately, particularly if the patient's condition is serious, but issues including incapacitation, trauma, and immobility have sometimes prevented that, requiring estimates to be made instead.

This can be problematic given that body weight estimates of critically ill patients have implications for drug and respiratory therapy. Obtaining an accurate patient weight is critical for medication dosage, supporting National Institute for Health and Care Excellence (NICE) guidelines which state that patients admitted to hospital should have their weight measured on admission and then weekly weight.

#### **Patient Transfer Scale**

Former NHS Lanarkshire Emergency Department nurse Gillian Taylor believes that many of the more traditional approaches to weighing ICU patients such as a hoist scale or bed scale are time-consuming, difficult to negotiate, and unwieldy.

Deciding there had to be an easier way after becoming frustrated by not being able to weigh patients who were either immobile or too sick to stand, this was her inspiration for coming up with a revolutionary solution, the Patient Transfer Scale (PTS), helping to prevent delays and discomfort

Gillian had the idea of weighing a patient as they are transferred from trolley to bed. She realised that if a patient was weighed as they were transferred to a bed, using a transfer board, they could be weighed quickly without unnecessary, problematic delay.

Developed in close collaboration with InnoScot Health, NHS Lanarkshire, and leading manufacturer of medical weighing scales Marsden, the scale combines a standard patient transfer board with a class III approved weighing scale, enabling medication and treatment to be administered quickly and with confidence for dangerous conditions like stroke and sepsis while preserving patient dignity.

The product means that weight readings need never be estimated again – the result being fast, accurate, easier readings leading to better patient care and improved outcomes.

#### **Support and Collaboration**

InnoScot Health worked closely with Gillian to evaluate the initial product, protect its intellectual property, secure funding, develop the prototype, and test in more than 30 hospitals, with multi-disciplinary teams using the product and providing feedback. This provided guidance for the final design and ultimately allowed the PTS to be brought to market.



InnoScot Health believes that the PTS is an exemplar of frontline health professionals identifying new, more efficient ways of improving patient care. By accelerating the speed at which time critical medications can be administered, it offers significant benefit in the treatment of time-critical conditions which a standing weight measurement cannot achieve.

It is testament to the rich resource of ideas and innovations emanating from the NHS Scotland workforce at all levels.

#### **Impact**

Through close collaboration, the PTS was developed from an idea into a viable, commercial product.

The PTS is now in use in hospital settings around the world including the US and Australia and won the Queen's Award for Enterprise in Innovation – the highest official accolade that a UK business can achieve – in 2021. Reflecting on the award, Mark Holdaway, Marsden's former Chief Executive Officer called the PTS "a genuine first for the healthcare industry".



We are grateful for the support we received from the Chief Scientist Office, InnoScot Health, and Marsden. Hopefully this will inspire other NHS staff to identify opportunities and make them aware that support is available to make them a reality." Raymond Hamill Senior Research & Development Manager at NHS Lanarkshire





### Case Study 5: A once for Scotland source of digital tools

Making the best use of digital technologies to improve the care and wellbeing of people in Scotland was set out in Scotland's first Digital Health and Care Strategy. As part of this the Right Decision Service was endorsed and funded by Scottish Government as the platform for delivery of the national decision support programme.

#### **Right Decision Service**

The Right Decision Service is a change agent for the delivery of value-based health and care. It brings together evidence from: validated research, practice experience, and the lived experiences of patients and service users, embedding this evidence in decision-ready formats through RDS tools such as web and mobile apps and electronic care records.

The 'Once for Scotland' source of digital tools enables people to make safe decisions quickly 'on the go', based on validated evidence.

Designed to harness the power of evidence and technology to bring decision-making tools to the fingertips of health and social care practitioners, the service has consolidated different applications, and guidance previously held on paper or intranets, into a single national service which is now delivered by Healthcare Improvement Scotland (HIS).

#### **Support and Collaboration**

Working initially in partnership with the Digital Health & Care Innovation Centre (DHI), and now Healthcare Improvement Scotland (HIS), InnoScot Health has legal manufacturer responsibility for calculators, software and tools that are integrated into the Right Decision Service.

As manufacturer, InnoScot Health draws up a declaration of conformity with the requirements of the Medical Device Directive and applies UK CA marking to the medical device.

#### **Impact**

The Right Decision Service has delivered measurable impact and was awarded the 2022 Digital Public Services Award by Holyrood Communications, Scottish Parliament and Scottish Government. From a survey of RDS implementation leads across 12 organisations conducted in January 2023:



We are proud to have partnered on this first-for-Scotland innovation. Many of the tools are in wide use across health and social care and it means that staff can use them with full confidence."

Flaine Gemmell Head of Regulatory Affairs InnoScot Health

77% confirmed that RDS tools are enabling better use of available resource

of RDS implementation leads indicate that RDS tools are already improving patient safety in their organisation

64% report that RDS tools are saving staff time

74% advise that RDS tools have improved quality of patient care

state that RDS tools have reduced costs

65% indicate that they are driving up consistent evidence-based practice





### **ACCELERATING A BETTER HEALTHCARE FUTURE**

InnoScot Health set out that by 2026 success would be: <u>Innovations of substance and scale coming to</u> market rapidly and in investor-ready form.

To achieve this, InnoScot Health has developed and launched a range of themed **innovation calls** focussing attention on areas or unmet clinical need. **New pathways to accelerate innovation** have been developed recognising systematic and financial barriers will always exist but can be overcome through collaboration; and continued close working with licence partners and spinout companies is supporting product expansion and further investment in NHS-led innovation.

#### **INNOVATION CALLS**

To grow our pipeline of high-quality innovations, InnoScot Health has launched a series of themed innovation calls over the last two years. These calls are a direct response to areas of health and social care that are ripe for innovation and are designed to focus attention, inspire new thinking, and encourage an open and receptive environment to innovation across the whole of Scotland.



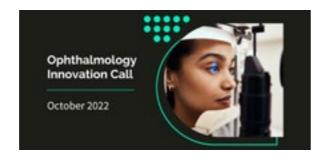






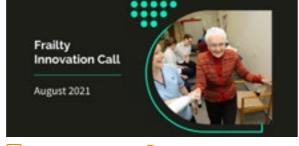
6 disclosures





**8 disclosures** 







#### **NEW PATHWAYS TO ACCELERATE INNOVATION**

To achieve market readiness, acceptance and adoption, InnoScot Health explores a range of pathways. By harnessing expertise across the sector and maximising collaboration some of the systematic and financial barriers to innovation can be overcome, while benefiting from new approaches and diverse perspectives



#### **Co-development Projects -3 live projects**

These projects are at an early and conceptual stage in development, requiring significant funds to prototype. Co-development with University partners and SMEs across Scotland are enabling the projects to progress.



#### **Technology Transfer - 3 live projects**

These projects have been brought to InnoScot Health as developed concepts, as opposed to initial ideas. Working with the NHS health board and innovators, market analysis and areas of novelty have been identified, with licensing to companies for further development, manufacture and distribution.



#### **University Student Projects - 3 live projects**

These projects are high-level concepts, in areas of unmet need brought by innovators across NHS Scotland. Often further development or design work is required to demonstrate feasibility of the project. InnoScot Health works with engineering students at Heriot-Watt University enabling projects to move forward at low cost, which would otherwise not be possible; whilst also providing students the opportunity to work on real-world projects with a valued partner to generate designs for medical devices that solve real NHS unmet needs. Past projects have covered areas such as neonatology, urology and occupational health.





### Case Study 6: Inspiring action for a more sustainable country

NHS Scotland has a significant impact on the environment, making up about 5% of the country's carbon footprint, from building energy and medical treatment to its fleet of vehicles. However, in efforts to reduce that impact, NHS Scotland's climate emergency and sustainability strategy was launched with aims to become a net zero health service by 2040 at the latest. However collective action by the entire NHS community is needed to achieve the ambitious green targets set out.

#### **Sustainability Innovation Call**

In support InnoScot Health launched a Sustainability Innovation Call in October 2022 seeking sustainable, forward-thinking ideas from health and social care professionals that can help support NHS Scotland to adapt, develop and strengthen in response to climate change.

Ideas fitting the green and sustainable theme were encouraged such as multiplex or lower carbon devices, new greener packaging methods which can be composted or recycled rather than sent to landfill; surgical equipment that could incorporate plant-based sutures or dressings, or new approaches to equipment that can be sterilised and reused as opposed to single-use disposal.

Use of technology was also encouraged in the form of digital technology solutions to help reduce patient journey requirements, sensor technology to reduce fridge or freezer monitoring; or new manufacturing processes such as 3D printing to reduce waste and improve efficiency. All ideas were welcomed from NHS Scotland's diverse workforce.

#### **Support and Expertise**

By focusing directly on environmental benefit, the Sustainability Innovation Call was a direct appeal to the 190,000-strong NHS Scotland workforce, those who know the challenges best, with an opportunity to innovate and make a vital contribution to net zero. This was combined with a package of support and expertise including:

- regulatory support
- project management
- extensive innovation expertise

The call was launched to coincide with COP26 in Glasgow, NHS Scotland's own Sustainability Conference, and achieved positive endorsement by Sustainability leads across various NHS Boards.



#### **Impact**

Over the two years the call has been active, there has been deep recognition of the impact the environment has on the Scottish population's health, but also the impact healthcare can have on the environment.

Supported by the expertise of the InnoScot Health team, the call continues to attract green ideas, with some of those ideas now being translated into viable products and services, including an IV dosage calculator from NHS Forth Valley which improves IV fluid prescribing while reducing waste.



NHS Scotland's strides towards net zero can improve vital patient care, while achieving major lasting environmental and financial benefits too. A greener health service that responds to environmental risks and meaningfully changes the way it operates is a better health service"

Graham Watson **Executive Chair** InnoScot Health





### Case Study 7: Game-changing innovation for newborns

Skin-to-skin contact for newborns has many benefits. It helps them to adjust to life outside the womb by keeping them warm while regulating heart rate and breathing; encouraging babies to look for breasts to start feeding; and assisting with immediate bonding and emotional connection.

#### The Challenge

For babies delivered by Caesarean Section, receiving skin-to-skin contact can be challenging due to the restricted size of the theatre table. Most women are also uncomfortable trying to do it and it can be unsafe for babies when mums are lying flat.

Birth partners are increasingly keen to step in with skin-to-skin contact in the interim and so the newborn is placed on their chest and covered with blankets or towels.

That does not always effectively sustain or assist in keeping babies warm, meaning they can be at risk of having to be admitted to special care, while staff often note that a lot of partners feel self-conscious without a top on.

#### Cozy Cuddle Scrubs (by Stacey)™

While working in theatre at St John's Hospital in Livingston, Stacey Boyle, an Elective Section Midwife, and Senior Charge Nurse, Marianne Hay of NHS Lothian, began to wonder if there was a better solution.

They alighted on the idea of special scrubs for partners with a kangaroo-style pouch to allow vital skin-to-skin contact to take place as soon as the baby is born with the help of cost-effective, upcycled NHS fleeces as a covering material and a secure Velcro opening altered onto new scrubs.

Babies delivered by Elective Caesarean Section can now be carefully placed into the fleece pouch worn by the birth partner while the surgical team focus on the mum and the completion of the procedure.

Newborns can nestle inside the scrubs and immediately reap all of the benefits of life-changing skin-to-skin contact.

#### Support

Since spring 2024, InnoScot Health worked closely with Stacey and Marianne to realise their ambitions for the innovation to reach hospitals across the UK, possibly even globally, in turn improving neonatal care and outcomes for families.

Alongside NHS Lothian's Research and Development team, InnoScot Health helped protect and register the design while liaising constantly with the different parties involved to ensure a high level of communication and progress.

This means that Cozy Cuddle Scrubs (by Stacey)™ are now well-placed to become more widely available through manufacturing partners.







#### **Impact**

Through close collaboration over a matter of months, the original idea has been developed from a prototype into a viable commercial product. InnoScot Health believes Cozy Cuddle Scrubs (by Stacey)™ are a breakthrough innovation and a great example of the value of ideas emerging from within NHS Scotland.

The Kean family from Bathgate have been among the happy families who have used the scrubs.

After mum Sarah gave birth to their baby girl Ayla, dad Michael wore them and said: "The scrubs were really comfortable, and it was so easy to secure Ayla in the pouch, keeping her wrapped up and cradled safely."

Sarah said: "It was incredible. Ayla was crying very loudly, but as soon as she was inside the scrubs with Michael, she settled and was very content."



It's just been completely a game-changer – an immense support.

> InnoScot Health helped with all the design registration, the legal aspects. You've done all the communication, all the support, sourcing a manufacturer, looking at all the companies that were available. It's been invaluable.

We honestly couldn't have done it without your professional advice, your knowledge, and all your support. This wouldn't be where it is now if it wasn't for you."

Marianne Hay, Senior Charge Nurse. NHS Lothian, pictured on right, with Election Section Midwife, Stacey Boyle





### DELIVERING REAL VALUE FROM HEALTHCARE INNOVATION

InnoScot Health set out that by 2026 success would be: An internationally recognised health, social and economic landscape across Scotland that promotes the benefits of successfully commercialised and sustainable health innovations.

To achieve this, InnoScot Health has placed a focus not just on health, but social and **economic benefits** of healthcare innovation. By **generating an income** stream to NHS Boards through financial returns on co-development projects we can support reinvestment in further innovation. Communicating success stories to the media also helps **strengthen Scotland's innovation profile** and spotlights the significance, and benefits, of health innovation within the wider entrepreneurial vision for Scotland.

#### **ECONOMIC BENEFITS**

To support successful commercialisation, InnoScot Health has a robust evaluation process for all new disclosures. This includes a tool for economic analysis of innovations, helping to determine the potential value of innovations before they enter costly and time-intensive development.



Developed and implemented during Summer 2022, the health economic analysis tool now forms part of the evaluation process for disclosures submitted to InnoScot Health. By incorporating economic principles early in the research and development process, InnoScot Health can determine the economic viability of projects, and work with stakeholders to prioritise resources efficiently and align preclinical efforts with broader healthcare goals.



#### **GENERATING INCOME**



Working closely with licence partners and NHS spinouts post commercialisation, InnoScot Health helps to grow sales, reach new markets and optimise value. This helps to grow an income stream to NHS health boards through financial returns on co-development projects.



income generating licences

at September 2024



£250,000+ royalties remitted to **NHS Boards** 

March 2021- September 2024



commercial partners

at September 2024



£30million+

**Estimated potential** spinout portfolio value

at September 2024



Commercialisation is our end goal and a crucial step, generating revenue for the innovator, but also the employing health board. This helps NHS Scotland to reinvest in further innovation while realising improvements in patient care"

Robert Rea Head of Innovation InnoScot Health



#### STRENGTHENING SCOTLAND'S INNOVATION PROFILE

Supporting the translation of ideas into viable products and services is central to the work of InnoScot Health, but ongoing support is also provided to licence partners and spinouts. From membership on Boards, to PR support and joint promotional activity, InnoScot Health aims to maximise the profile of NHS-led innovation, building on Scotland's history of invention and innovation.

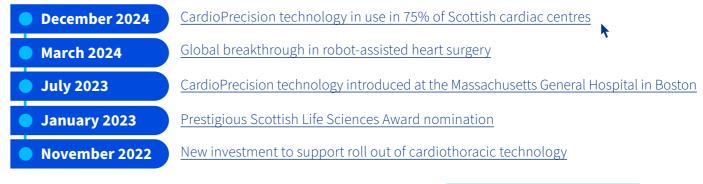


A 2015 spinout of InnoScot Health, NHS Greater Glasgow and Clyde, and the University of Glasgow, Aurum Biosciences is a clinical stage biopharmaceuticals company developing novel therapeutics and diagnostics in areas of unmet clinical need. Ongoing PR support ensures new investment and exciting plans to further develop its state-of-the-art therapeutic and diagnostic technology are maximised.





A 2007 spinout company of InnoScot Health, NHS Greater Glasgow and Clyde, and the Golden Jubilee National Hospital, CardioPrecision is a technology company developing medical devices for the treatment of structural heart disease and cardiothoracic interventions. Ongoing PR support ensures new investment and exciting plans for roll out of the patented CoreVista® technology is maximised.





To ensure continued awareness of NHS innovations and maximise promotional opportunities, InnoScot Health maintains strong relationships with the licence partners of successfully commercialised products.



As manufacturer and distributor of the portfolio of SCRAM™ products, InnoScot Health has worked in partnership with OpenHouse since 2017. They have a small manufacturing site in Birkenhead which supplies bags for US distribution and a manufacturing partner in the Middle East. Collaboration on marketing and PR activity helps to maximise promotional opportunities and support the expansion of the product line.



As manufacturer and distributor of the Patient Transfer Scale. InnoScot Health has worked in partnership with Marsden since 2016. The Patient Transfer Scale has been adopted across the NHS and sold worldwide. Collaboration on marketing and PR activity helps to demonstrate the potential of NHS-led innovation in both global adoption and award recognition.



As manufacturer and distributor of the SARUS-CPR hood. InnoScot Health has worked in partnership with Keela since 2021. Collaboration on marketing and PR activity has helped to spotlight the product benefits and raise awareness of published papers on product performance.





### Case Study 8: Reducing on-scene time in medical emergencies

Emergency airway management occurring outside the operating theatre is associated with increased morbidity and mortality. This can be due to interrupted workflow, low light, absent or unfamiliar equipment and high cognitive load for responders treating critically ill patients.

#### Structured CRitical Airway Management (SCRAM)™

Invented by Paul Swinton, Air Ambulance Paramedic and Neil Sinclair with support from InnoScot Health and the Scottish Ambulance Service, Structured CRitical Airway Management (SCRAM™) was designed and developed to improve the time and safety of the delivery of pre-hospital emergency anaesthesia and tracheal Intubation.

Fundamentally, the SCRAM™ system is a structured, reproducible approach to airway management, standardising, and optimally organising equipment and drugs prior to the procedure being required. The SCRAM™ System becomes a meaningful cognitive offloading tool, facilitating airway planning by reducing the time to intervention, reducing error, standardising practice, and promoting good governance.

As the community of clinicians using SCRAM™ in both the pre-hospital and hospital environments has grown, so has the diverse feedback, providing unique insights into how SCRAM™ is used by high performance teams within different clinical settings. This has enabled refinement of the design to meet the needs of the clinician.

Clinical trials positively demonstrated the value of SCRAM™ in reducing delay to airway management, with a 29% reduction in time taken to prepare equipment evidenced.

#### **Design evolution**

The benefits of the initial SCRAM™ design have gone on to support further development of an extended portfolio of products in response to demand from the community.



Further collaboration and relevant additional expertise has informed the development of the portfolio.



#### **Impact**

InnoScot Health has been proud to see SCRAM™ translated into a diverse range of products improving patient care not only in Scotland but around the world.

It helped to develop SCRAM™ from its earliest stages and continues to liaise with manufacturer Openhouse Products to ensure its successful promotion.

InnoScot Health fully supports SCRAM's growth aims as a Scottish Ambulance Service-inspired success story and remains a sustained supporter of its evolution, a sustained supporter of its evolution providing ongoing PR support, helping to publicise key milestones through national and trade press, whilst continuing to promote the range of products. This has included the Resus SCRAM bag being highlighted by a globally popular podcast in the US, to a study looking into advanced airway management for critically unwell children resulting in the Paediatric SCRAM™ bag being adopted at a Glasgow hospital.



As a full-time Air Ambulance paramedic, it would've been a real challenge for me to balance commitments while bringing SCRAM™ to completion, so the day-to-day management, support, and communication from InnoScot Health was vital in realising ambitions."

Paul Swinton Co-inventor of SCRAM™





### Case Study 9: Breakthrough stroke technology

Acute Ischemic Stroke (AIS) is a leading global cause of disability and the second leading cause of death. In Scotland, the impact of AIS is significant. According to statistics from Public Health Scotland, a total of 10,803 Scottish residents had a final diagnosis of stroke in 2023. Of those, 85% (9,182) were ischemic. Improving the lives of patients suffering from AIS is vital and using technology originally developed within the Institute of Neuroscience & Psychology at the University of Glasgow and NHS Greater Glasgow and Clyde, potential new treatments are being accelerated through NHS spinout Aurum Biosciences.

#### **Aurum Biosciences**

A 2015 spinout of InnoScot Health, NHS Greater Glasgow and Clyde, and the University of Glasgow, Aurum Biosciences is a clinical stage biopharmaceuticals company developing novel therapeutics and diagnostics in areas of unmet clinical need. Its patented ABL-101 platform technology represents the first major advancement in the management of acute stroke patients in more than two decades.

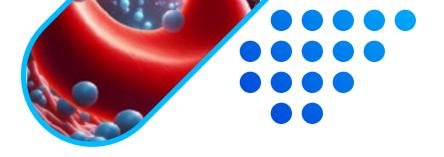
It not only delivers oxygen to brain tissue under stress beyond the clot in the critical hours following stroke, but further provides acute stroke diagnostics and helps to identify treatable brain tissue. This could save lives and lead to better outcomes for stroke survivors around the world. Future development of ABL-101 is also being explored in other high need clinical areas including cardiology, oncology, inflammatory conditions, and neurodegenerative diseases.

#### **Continued partnership**

InnoScot Health has been part of the Aurum Biosciences journey since inception - educating its scientists in the process of spinning out a company, offering critical commercial advice to complement clinical developments, and supporting ongoing company growth. This includes playing a key role in:

- securing initial investment of £1 million from investors and the Scottish Co-investment fund, which was critical to Aurum Biosciences' inception
- securing valuable local and ongoing investment from the Scottish Co-investment fund totalling over £700k
- providing expertise that enabled Aurum Biosciences to obtain a £1.8 million Convertible Loan Agreement from the Wellcome Trust
- supporting a growing portfolio of intellectual property protection for the diagnostic technology, which Aurum Biosciences is developing for use in acute stroke patients
- positively positioning Aurum Biosciences developments through national, trade press and event opportunities





#### **Impact**

Aurum Biosciences has the potential to deliver a wide spectrum of health, social, and economic benefits. The lead product ABL-101 has been recognised by the United Kingdom's Innovative Licensing and Access Pathway (ILAP) – a gateway to accelerate innovative products to market thereby improving patient access to important new treatments. The expansion to new indications is accompanied by impending growth opportunities in European and US markets, which represent key areas for grant funding and new investment.

InnoScot Health continues to sit on the board and is a sustained investor in the company, supporting exciting growth aims which will not only benefit patients in Scotland but around the world.



InnoScot Health played an absolutely critical role in the company's early days by educating our scientists in the process of spinning out a company, being involved in all key discussions, and continuing to play a very active role to this day. InnoScot Health remains an instrumental presence on our board, and a crucial driver of our strategic direction, providing important PR support for communicating key milestones and success stories to the media"

David Brennan, CEO, Aurum Biosciences





### **LOOKING FORWARD**

As the model of innovation support from InnoScot Health transitions, our commitment to supporting dynamic NHS-led innovation endures. Healthcare is evolving at a rapid and exciting pace, and to fully embrace the opportunities, we must ensure each innovator, entrepreneur, NHS Board, and partner organisation holds a unique, valued place in the journey to a better healthcare future.

In setting the direction of travel for future years, continued close working with NHS Boards and partners across Scotland will be vital to maximise resources, strengthen collective endeavours and develop operational models that are best tailored to local needs.

#### **Transition Period**

Annual grant funding provided by Chief Scientist Office (CSO) of Scottish Government will end on 31 March 2027. This means NHS Boards and Regional Innovation Hubs will no longer have free access to the services provided from this date and will be responsible for self-funding innovation and commercialisation arrangements.



Engagement sessions are planned across NHS Scotland during the transition period, and the team welcome further discussion to support decision making.

### **OUR VISION**

An entrepreneurial, collaborative Scotland where healthcare innovation thrives

### **OUR MISSION**

To inspire, accelerate, and commercialise impactful healthcare innovations for health, economic and social benefit

As our operational model and ways of working with NHS Scotland change, our approach will be underpinned by a number of key principles:

#### **Value Based Health and Care**

InnoScot Health will remain a not-for-profit organisation, committed to supporting a sustainable health and care system that delivers high-value care while reducing financial burdens on patients and systems alike. This will be achieved by encouraging new innovations, and the provision of value for money expertise to accelerate promising innovations that can generate an income return to NHS Scotland.

#### **Maximising entrepreneurial potential**

At its core, InnoScot Health will remain focused on maximising the talent, expertise and entrepreneurial potential of innovators within the NHS, recognising that inspired health and social care staff want to play an active part in shaping a modern, innovative healthcare system. This will be achieved by supporting individual NHS innovators with ideas for new products or services, while operating in parallel with, and remaining reactive to, broader systemic innovation changes.

#### **Tailored support packages**

InnoScot Health will offer a whole-process support package spanning intellectual property, regulatory, project management, prototyping and commercialisation. This will be achieved by tailoring support packages to the needs of NHS Boards, ensuring the correct bespoke mix of services and support is available, and the administrative burden of contracting with multiple individual suppliers is removed.

#### **On-Demand Consultancy Services**

InnoScot Health will offer expert advice, guidance and solutions in bespoke areas (such as regulatory, grant applications, market analysis), supporting flexibility and efficient use of NHS resources. This will be achieved by offering access to trusted, skilled individuals in key innovation areas where the volume of activity across individual NHS Boards would not justify in-house recruitment.

#### **Commitment to Collaboration**

InnoScot Health will champion Scotland's historic and growing reputation as a world-leading entrepreneurial and innovative nation, recognising that the whole is greater than the sum of our parts - that more can be achieved when invaluable knowledge and expertise is pooled. This will be achieved by maintaining and expanding relationships across the innovation community in Scotland, and beyond, including NHS, Government, academia, development agencies, innovation centres, manufacturers and investors, and working collaboratively in the best interests of NHS and of Scotland.







### **GET IN TOUCH WITH THE TEAM**



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