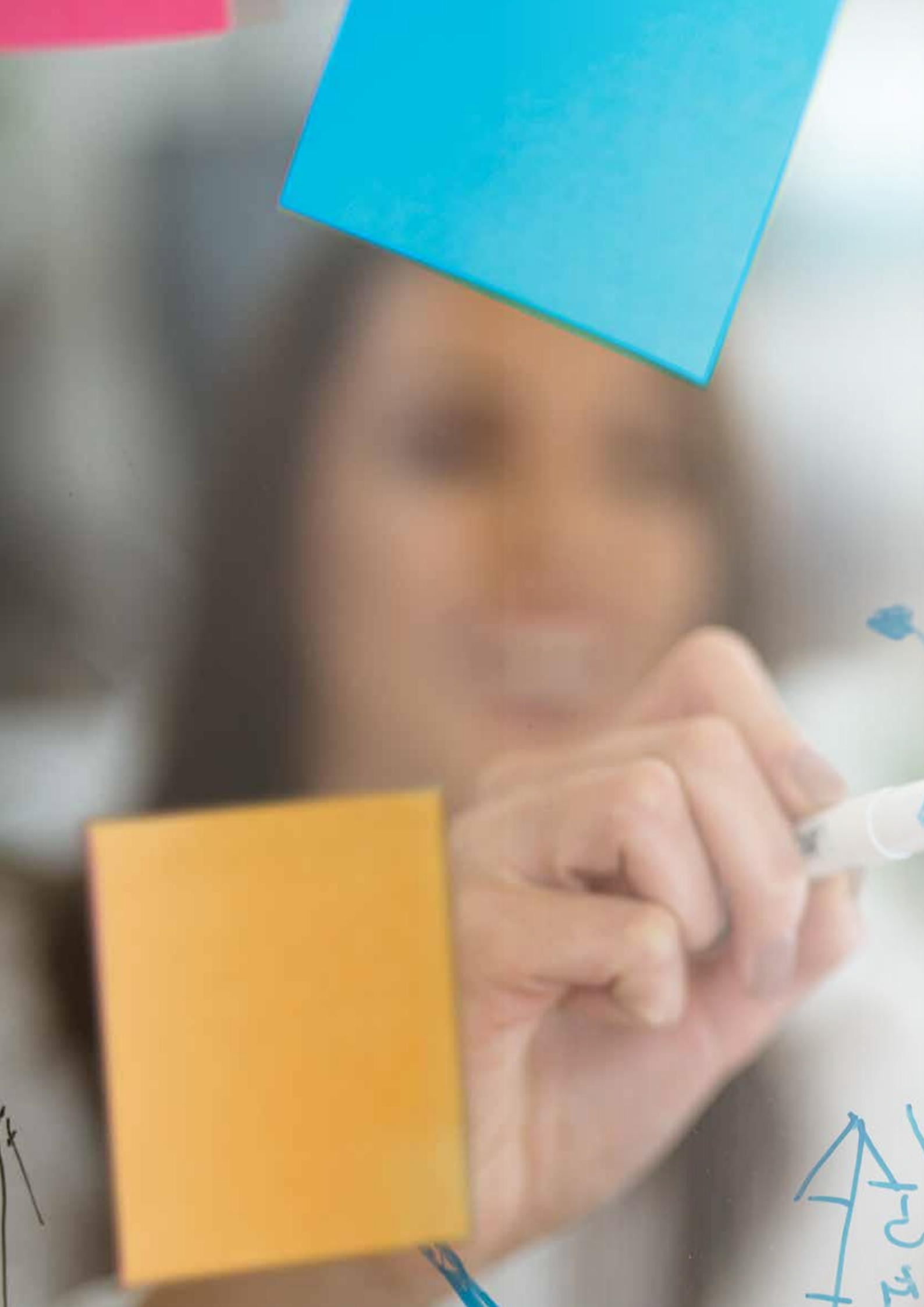
Spark

Innovation Programme

2020 Annual Report

Supporting Frontline Innovation

HSE



Foreword

I am delighted that the Office of the Nursing and Midwives Services Director and National Health & Social Care Professionals Office, have come on board as collaborators in the Spark initiative, making it a truly interdisciplinary effort. This reflects how interdisciplinary collaboration is at the heart of frontline healthcare. I am excited to see where these developments take us!

I wish to congratulate the Spark team for rolling out an excellent programme despite the extraordinary constraints we all worked within in the last year, and especially pleased to see that the Spark Ignite initiative in collaboration with HIHI won a commendation at the Irish Healthcare Awards 2020 - the fourth time a Spark initiative has been recognised at national awards!

The COVID pandemic has driven home what supporters of the SPARK initiative have known for a long time -

- The health service of the future will need to be **adaptable, flexible and responsive.** We will be required to change how we do things not just occasionally, but constantly.
- The public are **eager for change.** They see how services can be improved, they demand value for money, and they want services to be designed to meet their needs, and not the system's.
- **Innovation is the new normal,** from the advanced technology in our pockets, to the radical reimagining of logistics, supply chains, record keeping and information use, to changing attitudes to governance, stewardship, and sustainability.
- **Healthcare professionals and healthcare workers** see the changes that can be made, want to be part of that change, and want the system to stop holding them back.

I am delighted to continue to support Spark to empower our frontline workers to identify problems, improve processes, and propose solutions.

Dr Philip Crowley

National Director of
Quality Improvement
Health Services Executive

Contents

Introduction

2020, a unique year

2020 is a year that will forever stay in the minds of our frontline staff. Roles that already demand so much became even more challenging, with increased work intensity, as well as stress, fear and uncertainty, and all of this while also not seeing family and friends for long periods of lockdown.

With new challenges in providing care and indeed for how users experience healthcare the question was asked of us all, how did we respond? At Spark, the response to our initiatives confirms that our frontline staff chose innovation!

We are humbled with the consistent hard work and dedication that HSE frontline staff throughout the country have shown. That they have taken the time to apply to our initiatives, often after long dehydrated days wearing PPE, speaks to this dedication. This demonstrates that the desire to innovate and improve our health system is very strong.

2020 was the first full calendar year of having the Office of the Nursing and Midwifery Services Director (ONMSD) as part of the Spark team and we were very thankful for this partnership that began in 2019. We were blown away with the projects and ideas that flooded in from our Nursing and Midwifery colleagues! The year concluded with the National Health and Social Care Professions Office (NHSCPO) collaborating with Spark to expand the programme to include all HSCP disciplines.

This is the fourth year of Spark and as the Program grows so, we hope, will our team. We recently gained a Programme Co-ordinator and we intend to appoint a Post Doctoral Researcher in 2021. We are also working with ONMSD and the NHSCPO to explore the feasibility of expanding the innovation fellows to include a Nursing / Midwife fellow as well as a HSCP fellow so that all groups are represented and involved in the co-design of the Spark Programme, in the decision-making processes, and the implementation of projects.

Our programs allow frontline healthcare staff to highlight problems they have identified and want to develop innovative solutions for. These may be related to changes we have experienced as a result of the pandemic or they could be long present problems that are crying out for meaningful solutions.

A selection of Case Studies show that innovation of teams in the HSE only needs simple ingredients:

- that we listen to our frontline staff who see the problems,
- that we give the opportunity for them to learn about innovation and user centred design, and
- that we support them in implementing their solution.

From the inception of the Spark Programme this has been our modus operandi and as our presence grows in the future to meet demand, Spark will keep listening, generating opportunities and supporting our frontline staff.

Jared Gormly

Spark Lead
Health Services Executive

A Word from our Sponsors

I am delighted that the ONMSD had the opportunity to collaborate with the Spark Programme during 2020, which was a year like no other for health and social services in Ireland. Nurses and Midwives have been at the forefront of redesigning health services and coming up with new ways of working, particularly in response to COVID. We recognise that Nurses and Midwives are natural problem solvers with a unique relationship to patients. We will continue to motivate and promote innovative practices to ensure the best patient experiences, health outcomes and nursing and midwifery practices.

Dr Geraldine Shaw

Nursing and Midwifery Services Director ONMSD Health Services Executive

The National HSCP Office is pleased to collaborate with Spark to empower frontline HSCP to identify problems, improve processes, and propose solutions. HSCP are passionate about and focused on delivering for service users and patients. We know that Health & Social Care Professionals 'think outside the box' and are, by their nature, excellent problem solvers and innovators. Our partnership with the Spark Programme, is in line with HSCP Deliver – A Strategic Guidance Framework for Health and Social Care Professions 2021 – 2026 and enables us to support and encourage innovation throughout the vast network of HSCPs in Ireland and to bring great ideas to fruition.

Jackie Reed

National Lead National Health & Social Care Professions Office

As the medical director of National Doctors Training and Planning Unit I am pleased to support the Spark programme. As sponsors of the Spark Programme, the NDTP are encouraging Doctors to employ their hard-earned knowledge to improve the healthcare system for everyone. Our investment into the Spark Programme, gives Irish Doctors an opportunity to learn about design thinking, business models, technology and innovation. The COVID pandemic has thought us the importance and value of working together. Whilst we tend to train in specialty silos the expectation is that modern healthcare is delivered by multidisciplinary teams. I have no doubt that the pandemic has been a significant stimulus for innovation. The greatest strength of the Spark programme is in its multidisciplinary collaboration. We are indeed stronger together.'

Dr Brian Kinirons

Medical Director of the National Doctors Training and Planning Department

Fellow's Foreword

The Spark Innovation Programme should appeal to those who are excited by change, innovation and development in our health system.

Innovation and design principles are undoubtedly a departure from the day-to-day clinical roles that most of us in the HSE might be used to. This programme seeks out innovative and creative figures from within health service. We at Spark recognise that healthcare staff input, opinions and knowledge of working within the health system are of central importance in both the development and implementation of projects.

Spark is currently run by a small team. However, we believe that we consistently succeed in punching above our weight. Our goal is to grow to be able to increase our reach and encourage further innovation in the health system.

From the organising of events (User Centred Design webinars, Design Week to our Spark Summit), creation and dissemination of digital content that is shared on our website and social media accounts, and most importantly in the support of innovators through training, funding and other supports, the programme is continually evolving based on the changing climate in our health service.

2020/21 saw a pivot to online Design Thinking workshops and applicants pitching for funding and support via digital pitch sessions. Healthcare staff applied in record numbers to our COVID Call and their message was clear:

We are continuing to innovate!

We saw this and responded by maintaining and expanding our offerings as much as our capacity allowed. When healthcare staff identify a problem that affects their hospital, service or unit, we offer an opportunity to hone their presentation, design and innovation skills. But most importantly, **we listen to their ideas and we work to help make these innovations succeed.**

The Team

Jared Gormly
Spark Lead

Dr Alan Hopkins
National Fellow
For Innovation

Neilan Govender
Spark Co-ordinator

Christopher McBrearty
HIHI Spark Ignite
Project Lead

The Spark of Inspiration

The Spark Innovation Programme is a frontline staff-led initiative that seeks to support, promote and recognise innovation amongst healthcare staff.

Spark Innovation Programme was initially established as a national programme to empower and engage Doctors at the beginning of their careers. The opportunity to develop one's ideas is central to keeping staff engaged and inspired, and makes it easier to recruit and retain the high quality graduates of our world class medical education system.

However, Spark is not solely about successful ideas but also about the potential shared learning for the system – creating a great place to work where healthcare professionals are empowered and encouraged to bring all of their creativity, imagination, problem solving skills, love of design, and passion for the wellbeing of patients.

The power of this vision has seen Spark expand to include all healthcare professionals, and every employee of the HSE, thanks to partnership with the National Quality Improvement Team (NQIT) and ongoing support from Office of Nursing and Midwives Director (ONMSD), National Doctors Training and Planning (NDTP), and National Health & Social Care Professionals Office (NHSCPO).

The programme continues to exemplify bottom up innovation support. The role of Innovation Fellows is critical in leading and shaping the Spark Programme, playing a key part in supporting ideas, design, innovation, collaboration, and initial implementation of initiatives led by frontline staff.

As a frontline staff member, the Innovation Fellow is required to ensure the relevance of the initiatives to those swamped with clinical work. This ongoing monitoring, and a willingness to pilot new schemes, critically appraise them, and keep what works best, is key to the continued success of the programme.

Aims & Objectives

1. Engage & empower frontline staff

We need to empower our staff to deliver change, identify barriers and implement improvements for patients and service. users*

- Promote and celebrate initiative, creativity and collaboration
- Create funding streams for staff-generated solutions to identified problems and opportunities
- Enable access to and training in design and innovation methodologies
- Provide mentoring
- Share success stories

2. Create a supportive ecosystem for health innovators

With a shared vision of improving patient and service-user experience, we will work together more effectively and overcome barriers that have made change more difficult in the past.*

- Create an innovation-friendly workplace
- Promote collaborative work practices
- Normalise innovation practices
- Promote the role of human-centred thinking in the health system
- Promote early engagement with emerging technology

Spark Innovation Programme

3. Develop systemic capability

To create this environment…an increased focus on teamwork and collaboration… education and training programmes… and developing necessary structures (e.g. locally based change and improvement networks, communities of practice etc)*

- Leverage existing resources and form strategic partnerships
- Source expertise
- Create pathways innovations, innovators, and innovation processes
- Build evidence base illustrate value

* HSE Corporate Plan 2021 24

Our Three Key Programme Strands

The main work of Spark falls into three areas:

Spark Seed

Provides training, micro funding and support to first step innovators to enable them to develop their project

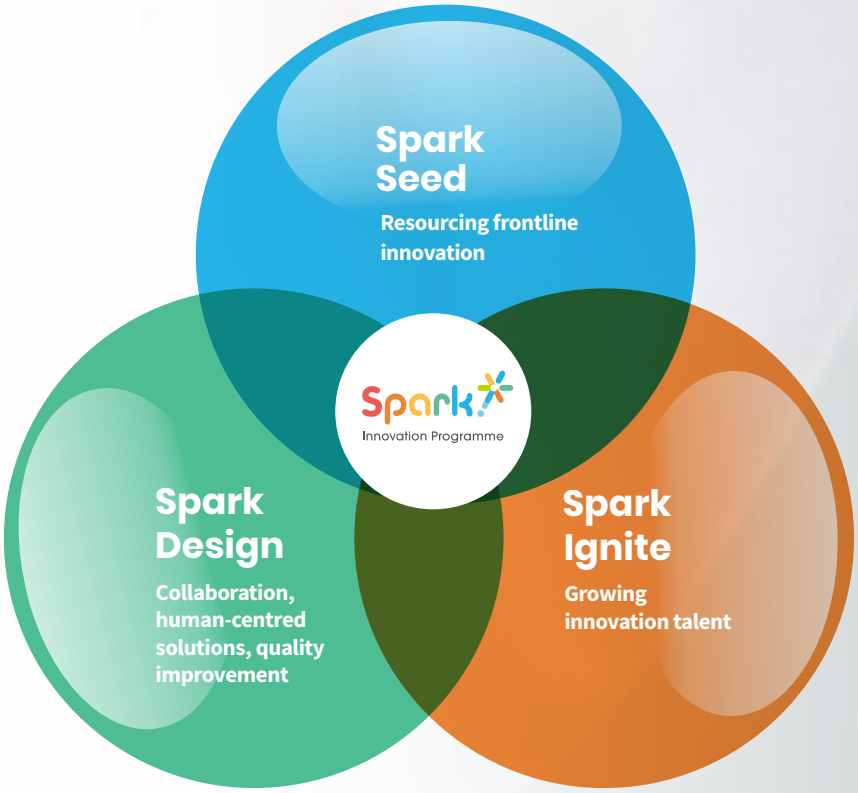
Spark Ignite

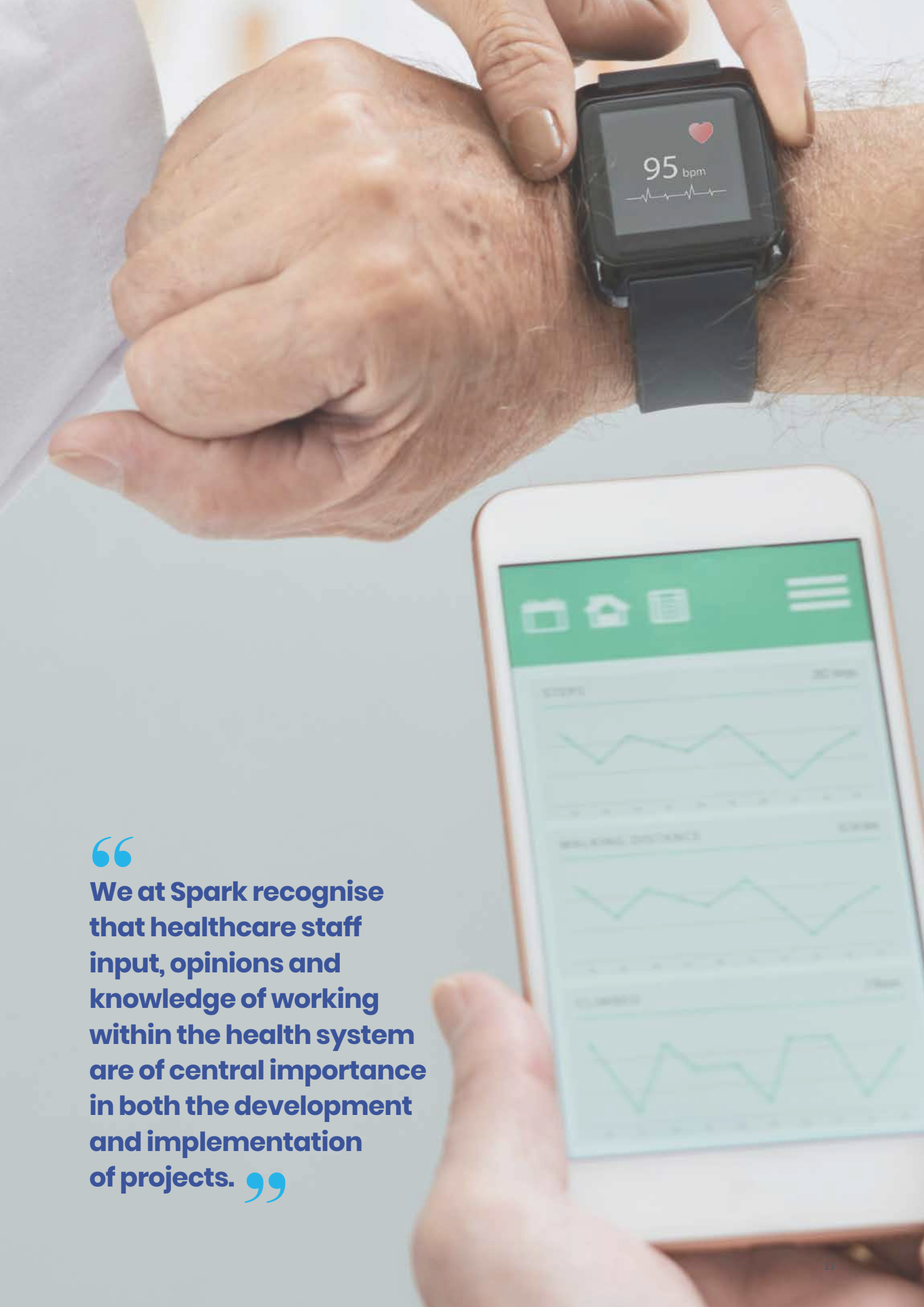
Aimed at projects that have the potential to scale, to make systemic improvements, or to have commercial impact

Spark Design

Help changemakers to make space in their process to consider whether their solutions are human-centred and of the highest quality

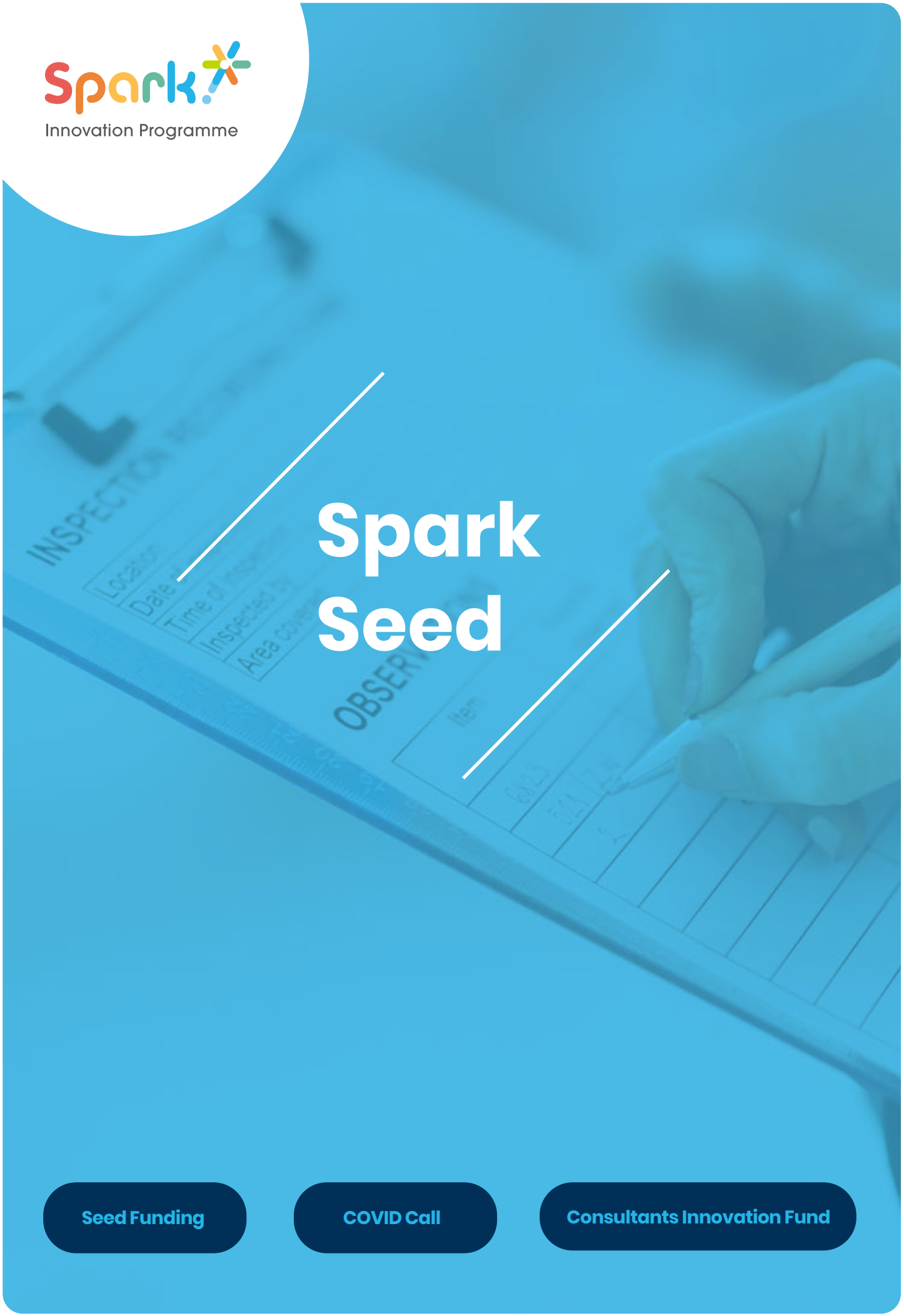
While these areas cover most of what we do, we are always open to collaborate with others to promote frontline innovation and work on new initiatives that can improve the innovation ecosystem in health.





We at Spark recognise that healthcare staff input, opinions and knowledge of working within the health system are of central importance in both the development and implementation of projects.

Spark
Innovation Programme



Spark Seed

Seed Funding

COVID Call

Consultants Innovation Fund

Spark Seed

The frontline staff in our health service are best placed to identify key problems and implement meaningful solutions. Spark Seed is about enabling them to sow the seed of innovation and cultivate the solution to grow and bear fruits of improvements.

The Spark Innovation Programme recognises that **frontline staff are best placed** to identify key problems faced by service users and care providers alike, and implement solutions to those problems. Offering **funding in combination with mentorship and training** equips staff with the skills required to effect meaningful change.

Spark Seed Funding is an initiative whereby frontline staff can apply for micro funding and other supports for innovative projects that will improve our health service. The initiative focuses on **small, rapidly implementable projects which take a bottom up approach to change.**

While small in scale, these projects have great potential to make meaningful improvements to patient care, increase service capacity and generate cost savings.

Applicants submit a brief project overview, with the best solutions shortlisted to attend a **Design Thinking workshop** where ideas are refined with support and mentorship from the Spark team. The workshops were facilitated by Trevor Vaugh, Assistant Professor of Human Centred Innovation in Maynooth University and inventor on RTE's "The Big Life Fix". The workshops were held in the Pillar Centre for Transformation and Dog Patch Labs.

This seed funding call was open to NCHDs, Nurses & Midwives and MDT applications. This was the first call after the ONMSD joined the Spark Programme and the enthusiasm from Nurses and Midwives was shown in their fantastic response with over double the amount of projects led by them compared to NCHDs - we were humbled by the interest!

COVID Calls:

- Spark Seed funding
- COVID Call
- Hospital Consultant-led Innovation Fund
- Targeted at NCHDs ,Nurses, Midwives & HSCPs with emphasis on MDT collaboration
- Multiple calls per year for small scale projects
- Micro funding up to €3,000 for individual and €5,000 for groups
- Best ideas invited to attend CPD CEU accredited
- Design Thinking workshops
- Mentorship/support also provided

Seed Funding – A Selection of Funded Projects

The Psychology of Surgery

Dr Stephanie Bollard, Plastic & Reconstructive Surgery SpR

The Problem: Surgery is a craft-speciality, and successful training relies upon mastery of motor skills, as well as maintenance of concentration and endurance.

Solution: To run a series of psychoeducational small-group workshops over a one-month period. These workshops will be delivered by a specialised performance psychologist and will focus upon the development of skills specific to success in high-pressure performance settings.

Benefits: Reduce anxiety and equip trainees with capability to optimise their acquisition of surgical skills.

DIGIT BY DIGITAL – Virtual Biofeedback for the Rehabilitation of Finger Injuries

Jack Woods, Plastic Surgery SpR

The Problem: How to better support post-injury rehab at home.

Solution: A system using goniometers and software to give feedback during remote rehab sessions .

Benefits: Extend the reach of telehealth rehab services and improve patient experience.

Building an Online Presence

David Field, Clinical Nurse Specialist

The Problem: Creating better information on and access to Mater Sexual Health Services

Solution: An interactive website will be a one stop place for sexual health in the Mater.

Benefits: Online assessment pathway, appointment booking, COVID pre assessment, courses for HCPs

Patient-Centred MRI for Children with Autism and Intellectual Disability

Dr Anne Carroll, Dr Siobhan Hoare, and Dr Gabrielle Colleran, Paediatric Radiologists

The Problem: Children with autism undergo MRIs under General Anaesthetic, which can only be performed in the CHI hospitals, thus yielding very long waiting lists.

Solution: Visual aids, a video VR experience of the MRI department, and other supports co-created with the children and their families prepare and support children with autism to undergo MRI scans without General Anaesthetic.

Benefits: Optimise service users care.

Parental Comfort Packs

Lisa McllMurray, Nurse

The Problem: Stress and anxiety of parents in the PICU environment

Solution: To develop a welcome comfort pack that could be given to the parents when they arrive to help them settle into the hospital and provide a few essentials that could make their journey through ICU with their child a little less stressful. The welcome pack would cater for all parents entering the PICU environment, regardless of their child's age/stage of development or underlying condition.

Don't just screen, intervene – Improving the Physical Health Care of Residential Mental Health Service Users

Sinead Hennessy, Nurse

The Problem: Mental health service users are showing raised BMI, raised serum lipids, poorer diet and ultimately shortened life expectancy compared to the general population.

Solution: Staff survey followed up with education program for HCPs in mental health.

Benefits: Optimise service users care.

Spark Seed Funding at a Glance

TOTALS

112
Applications received

43
Groups / Individuals attended workshops

FUNDING

26
Projects awarded funding totalling
€43,515

NURSING &MIDWIFERY

81
Applications led by Nursing & Midwifery

29
Nurses and Midwives attended workshops

FUNDING

17
Projects awarded funding totalling
€22,515

NCHDs

31
Applications led by NCHDs

14
NCHD led groups/ individuals attended workshops

FUNDING

9
Projects awarded funding totalling
€19,000

Spark Seed

Spark Seed Case Study

Introducing Nurse-administered iCare in Retinal Clinics

Innovators: Scannell O., Woods B., Powell S., McCabe G., Dooley I.

The Problem

Demand for the retina service at MMUH has grown significantly in recent years. Because treatments must often be administered over a lengthy period of time, requiring regular outpatient follow up, demand far exceeds capacity. Clinics frequently run overtime, with negative implications for cost management and staff/user wellbeing.

Measuring Intraocular Pressure (IOP) is an integral part of the eye exam, but for most patients it is simply a screening measure. However, 50% of patients struggle with IOP measurement using the standard method, Goldman Applanation Tonometry (GAT) which also requires extensive staff training, is a lengthy procedure, and involves the use of unpleasant anaesthetic drops.

The Opportunity

The **iCare Device** is an alternative method which compares well to GAT over a low to moderate IOP range: Can the efficiency of eye service delivery be improved by transitioning IOP measurement from doctor/GAT to nursing staff/iCare, allowing Doctors to make the most of the time available to them with each patient?

The Project

- Secure funding to purchase two iCare ic100 tonometers
- Run audited experiment (26 patients, 51 eyes) comparing Gat administered by Doctors, and iCare administered by nursing staff.
- Compare patient comfort levels, iCare readings and agreement with GAT. Calculate efficiencies using time driven activity-based costing method (TDABC).

The Results

- iCare was faster in 100% of cases.
- iCare over five times faster (9 seconds per reading v 52 secs for GAT).
- 82% of iCare readings accurate within 2mmHg of readings taken via GAT.
- iCare had a 100% sensitivity for picking up raised IOP with an 87% specificity.
- iCares had a positive predictive value of 12.5% but a negative predictive value of 100% – excellent for screening.

The Benefits

- **100% of patients surveyed found iCare experience to be more comfortable than GAT**
- **Can be performed in any sitting position (including a wheelchair)**
- **Does not require eye lids to be held open or the instillation of eye drops (which sting)**
- **Faster than GAT**

The Figures

- Estimated cost per clinic session of 45 patients (3 Doctors [consultant, SpR, and SHO] using GAT) = **€178.25.**
- Cost per session for 2 staff Nurses to use iCare = **€98.20.**
- Saving of **€80.09** per session.

The Potential

With four retinal clinics running each week for approximately 48 weeks a year, a saving of €14,737.47 per annum was anticipated.

Spark Seed

Spark Seed Case Study

Steth-o-Cope App

Supporting clinical decision making by interns

Innovators: A group of senior NCHDs in association with interns, educators and clinical trainers from NUI Galway and Saolta University Healthcare Group.

The Problem

Starting your career as a healthcare professional can be a very stressful time, with pressure to acclimatise to the operation of a hospital as well as needing to hone clinical skills.

Research on intern-preparedness for practice identified that the approach to the acutely unwell patient, in particular knowing where to start with a patient review, was a challenge for interns.

The Opportunity

Would a checklist to structure patient review and support decision-making help interns navigate the encounter with acutely unwell patients, easing the experience for all parties?

The Project

- Development of a mobile app to support interns in patient examination, funded by Spark.
- Content developed by a team of senior clinicians and interns.
- Checklists for each stage of a patient review patient - prepare, assess, investigate and manage.
- Practical and useful tasks for interns to do when reviewing and assessing patients, with a selection of common acute problems.
- Guidance on clinical features which should trigger escalation to more senior decision-makers.
- Prompts for stopping and thinking.
- List of web resources to related protocols and guidelines.
- Tool for creating a task list and setting reminders with notification alerts.
- Share features to support peer learning.

The Results

The Steth-O-Cope app was released to market in early 2018.

Recognising the role of the app in supporting frontline healthcare staff, in 2020 Spark funded the second iteration and the iOs build.

Available on Google Play with more than 1,000 downloads per week across over 40 countries.

A star rating of 4.7/5. Excellent reviews from interns, junior Doctors and Nurses.

The Benefits

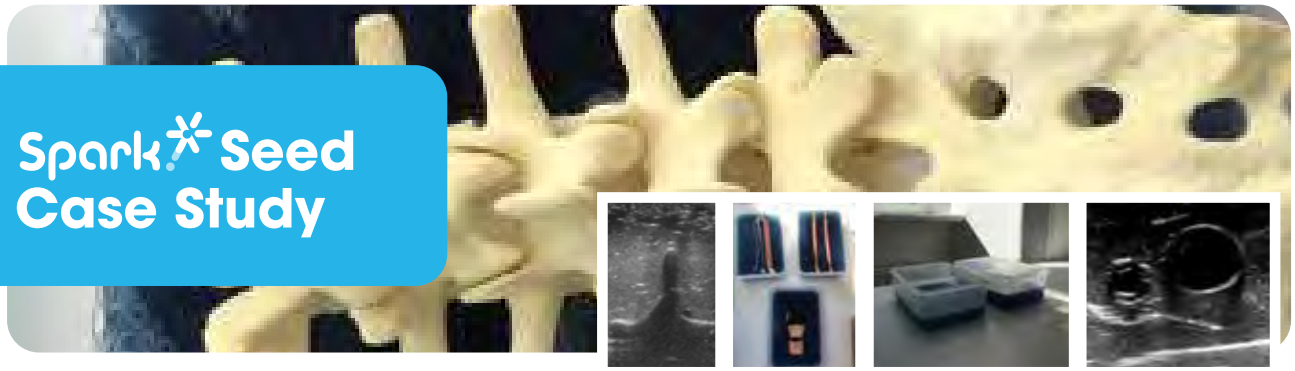
- **Users report that the app serves as a quick reference to ensure they are progressing appropriately**
- **Reminds interns to seek help and escalate care as needed**
- **Reduced stress and anxiety in healthcare professionals**
- **Supports best possible outcome for the patient**

The Potential

New iOs and Android versions are due to be released to market to coincide with the July 2021 intern start. Following testing by interns and the development team additional ward calls and educational pieces have been added. More learning resources and a selection of videos of common procedural skills are part of the upgrade.

Spark Seed

Spark Seed Case Study



Simgar - Agar Phantom Packs

Innovators: Dr Sarah Corbett, Bronwyn Reid-McDermott, Irish Centre for Applied Patient Safety and Simulation (ICAPSS)

The Problem

Ultrasound is a technique which can make technical skills safer and faster to perform. However, acquisition of the skills needed can be challenging - it involves manipulating a needle in real time under an ultrasound beam that is the width of a credit card and so requires practice.

Simulation training using ultrasound phantom models that accurately replicate human tissue allows acquisition of hand eye coordination and needle manipulation skills and practice of the infection control procedures that accompany any of these procedures.

Commercial ultrasound models can be prohibitively expensive, and wear with use so that they have limited lifespan. They also offer a limited range of models and images.

The Opportunity

Can easy to use instruction sets for home made, agar based models enable clinicians to rehearse needle manipulation skills accurately and more often?

The Project

- Provide clinicians with the instructions and the ingredients to create their own biodegradable, inexpensive ultrasound models with which they can practice.
- Provide instructions on ergonomics and maximising success.

The Results

Models are being prepped and finalised and soon will be made available to trainees to practice each of

- Peripheral Cannulation
- Central Venous Cannulation
- Regional Anaesthesia
- Emergency Front of Neck Access
- Lumbar Puncture

The Benefits

- **For those who wants to practice ultrasound guided procedural skills in a way that is safe for the patient, both at home or at work.**
- **Agar based models are inexpensive to make, they have a long shelf life, are biodegradable when they have started to lose integrity because of repeated needle puncturing**
- **Can be melted down and recycled.**

The Figures

Cost of materials to make this model is approximately €100. The commercially available USS compatible costs over €4000.

The Potential

Rolling out these kits can offer a 40X saving on existing equipment!

“The need for innovation is even greater in the new COVID era. Our experience in the past few months has demonstrated the great power of collective imagination in healthcare settings in its relentless pursuit of the possible. The application of this imagination can make us more resilient and can circumvent the most difficult challenges.”

Dr Colm Henry, Chief Clinical Officer, Department of Clinical Design & Innovation Health Executive Ireland

COVID Call

The COVID Call & Design on the Frontline

In the depths of the Heath Service response to the COVID pandemic, we put two simple questions to our frontline staff:

'What current challenges are preventing you from doing your job well today?'

'What is currently causing your patient's distress or leading to negative experiences?'

The response was overwhelming. The ideas we received from healthcare workers and have subsequently supported are innovative, implementable, and most importantly, they are human centred. Some examples of projects that were awarded support are listed opposite.

However, there were a large number of problem opportunities presented to the COVID Call without obvious solutions. Spark responded by creating Design on the Frontline , a collaboration with the design community to help develop solutions to key problems identified by this call. More information about **Design on the Frontline** can be found on page 42.

Support was offered to 38 projects through this initiative, some examples are:

- **Illustrated storybook** as a perioperative information resource for young children and their parents - Ann-Marie Crowe, Paediatric Anaesthesiology Fellow, CHI Crumlin
- **Improving the experience of children** with special needs and autism in OPD
- **Supporting older adults** to use video consultation technology during COVID
- **Communication and Conversation during COVID**
- **Reducing anxiety in new diagnosis of dementia** information packs/support groups etc.
- **Making education for the cancer journey accessible for all**
- **Minding the Minders with Mindfulness.** Using virtual means to increase the uptake of cardiac rehabilitation in patients unable to attend the face to face program
- **mindthefrontline.com** - a mental health resource for healthcare workers
- **Surgery Ready @ Home**
- **Pre-clinic PDometer**
- **No Place Like Home** - Independent Dialysis Resources for the South East
- **'Aunty Dorothy'** - Virtual Hospital Visitor Assistant
- **'CAP' (Children's Asthma Pack)**
- **OPAT - "Your path home"**

Spark Seed
COVID Call at a Glance

TOTALS

175 Applications from AHPs, NCHDs, Nursing & Midwifery and MDT teams

94 MDT Applications

81 Individual Applications

ROLES OF APPLICANTS

116 NCHDs

174 Nurses and Midwifery

112 HSCP's

DESIGN WORKSHOPS

69 Projects presented at workshops (90 Nurses, 80 NCHDs , 77 HSCPs)

38 Number of projects funded

€75,200 Amount of funding awarded

ROLES OF FUNDED PROJECTS

50 Nurses and Midwives in supported projects

50 NCHDs in supported projects

42 HSCPs in supported projects

Spark Seed

Spark Seed Case Study

COVID Call In Room – Rehab In room rehabilitation and wellbeing initiative during the COVID pandemic in a rehabilitation and residential care setting for older adults

Innovators: Mary Doyle CNS; Eimear Flood. Senior OT; Louise McCarron, Senior Physiotherapist; Sarah Mello, Consultant Geriatrician; Prof. Des O Neill, Consultant Geriatrician.

The Problem

During the COVID pandemic, social -isolation of older adults due to visitor restrictions, mandatory infection surveillance periods, and lack of interaction with other residents, is of great concern, particularly for vulnerable cohorts in rehabilitation settings and in residential care, with patients and residents for the most part confined to their rooms. In addition, many such patients have chronic illness such as COPD, Parkinson's disease, dementia, osteoarthritis and chronic pain.

The Opportunity

How can we enable patients to independently progress to achieving their rehabilitation goals despite many infection control measures in place?

The Project

- Provide equipment and creative activity packs to be used in each patient's room, including multiple single-use pieces of equipment.
- Enable a range of holistic leisure activities such as creative arts and crafts when visiting is restricted, to support ongoing exercise plans and meaningful activity. All equipment to meet infection controls standards.

The Benefits

- **Combat negative effects of inactivity such as sarcopenia, frailty and deconditioning.**
- **Enhance overall wellbeing of residents and patients, including rebuilding confidence and self-esteem lost during acute illness.**
- **Change in thinking and practice within care team.**

The Potential

- Enables patients to continue to exercise and progress with rehabilitation even in times of infection control measures being in place.
- When patients can continue to progress when in isolation as well as in dedicated MDT sessions this could lead to reduced lengths of stay in both hospital and rehabilitation facilities.

Spark Seed

Spark Seed Case Study

Stop and Watch Tool – Catch me if you can

Innovators: Sandra O'Reilly, Quality and Practice Nurse; Fiona Shanahan CNM3; Maria Fitzpatrick, CNS; Ailish Mooney, Clinical Psychologist.

The Problem

Training needs analysis highlighted circumstances where vulnerable patients could have been helped to seek medical assistance sooner, particularly patients with an Intellectual Disability (ID). Characteristics and symptoms associated with the ID potentially masked symptoms of other underlying health problems, meaning they might go undiagnosed and lead to more serious health issues. Research indicates significant disparity in health outcomes for people with ID vs general population.

The Opportunity

We identified the need to provide educational support to our staff teams in the identification of deterioration, specifically for a person with an ID. The tool we required would need to support staff teams with different skill mix within the social care setting.

The Project

Stop and Watch is an early warning communication tool previously developed by Ann Stabler and when used in the NHS, data showed that deteriorating patients with an ID could be identified up to five days sooner than with NEWS observations alone. The tool comes in a printed leaflet format, using colourful emojis that represent 12 signs of deterioration as a simple abbreviation to help people to remember them. It can be utilized by certified healthcare assistants or social care workers to make observations not captured by NEWS and alert a nurse or manager if they notice something different in a person's daily care routine.

The Results

In response to COVID, the Stop and Watch tool was used as part of our monitoring and escalation tool kit to support staff with daily monitoring of service users. Data collected in relation to daily reviews of service users indicated that staff are using the tool to identify signs of deterioration.

The Benefits

- **Increase staff confidence and understanding of deterioration in a social care setting**
- **You don't need to be clinically trained to use the tool**
- **Earlier escalation to G.P. review**
- **Common language being used between all staff**
- **Improved communication**
- **Improved health outcomes**
- **Easy to use!**
- **Carers and family members are able to keep the leaflet with them as an aid memoire**

The Potential

- Use the tool for specific research on individuals and groups to inform future support needs.
- Provide Stop and Watch training to all new employees as a part of the induction program.
- Extend education on the tool to service users and families.
- Develop a national roll out of the tool.

Spark Seed

Consultant Innovation Fund

The Spark Consultant Innovation Fund was a pilot initiative in 2019 with the Acute Hospitals Division and NDTP. This fund recognises the need for investment in innovation in our health service and enables hospital consultants to lead these changes rapidly through an easily accessible fund.

By creating this fund, we have empowered consultants working in the public health service to deliver real and meaningful changes to the service they deliver. This is a novel, collaborative approach to supporting quality improvement in the public health service by providing funding and other resources to consultants using an efficient, transparent process with multi-stakeholder input. This will allow senior clinicians to rapidly implement innovative solutions which have undergone review by the Consultant Innovation Fund collaborative group.

Projects are short-listed on the basis of an approved marking scheme which gives marks for scalability, sustainability and alignment with HSE corporate strategy. Projects are further shortlisted on the basis of hospital group with efforts made to award funding to at least one hospital per group.

- Once-off funding
- Nationwide call
- Investment in new equipment, training opportunities or exploration of novel ways of working
- Delivering cost savings, capacity increases, best practice care delivery, or improved patient experience
- Consultants can apply on behalf of a multi-disciplinary team
- Projects which follow a co-funding model are prioritised
- Estimated fivefold return on investment

Support was offered to eight projects through this initiative:

1. **Beta-D-Glucan Testing:** Small Test - Big Impact, Microbiology
2. **Ambulatory Care Stream** for Frail Older People in the Emergency Department, Emergency Medicine
3. **HeartFlow:** Streamlining patient referrals to the National Centre for Cardiothoracic Surgery, Cardiothoracic Surgery
4. **Infant Mental Health** @ CHI Quality Improvement Project, Psychiatry
5. **Using artificial intelligence** and machine learning tools to create an obstetric blood stream infection risk score from routine laboratory tests, Microbiology
6. **Co-Producing a Transition Clinic** for young people with 22q11.2 deletion syndrome, Endocrinology
7. **Implementation of Emergency Physician-delivered deep vein thrombosis scanning** in the Mater Hospital Emergency Department, Emergency Medicine
8. **Predicting bacteraemia in maternity patients** using full blood count parameters: A supervised machine learning algorithm approach, Clinical Microbiology; Haematology; Obstetrics and Gynaecology; Pharmacy.

Spark Seed

Spark Seed Case Study

Introduction of BDG Testing in Mater Hospital

Innovator: Dr Breda Lynch, Consultant in Clinical Microbiology in the Mater Hospital, Dublin.

The Problem

Fungal infections carry a high morbidity and mortality, are difficult to diagnose and expensive to treat. Speed of diagnosis leads to earlier correct care, but the BDG test for fungal infection is currently outsourced, with a turnaround time of up to 109 days. Thus, patients considered to be at risk often receive treatments before diagnosis is confirmed. This is costly, and contributes to the systemic development of resistance to antibiotic treatments.

The Opportunity

Could performing the BDG test in the in-house hospital laboratory improve turnaround times, inform speedier diagnosis, improve outcomes for patients, and prevent unnecessary antifungal treatments, thereby saving money and supporting effective Antimicrobial Stewardship?

The Project

- Win funding and procure equipment
- Train staff
- Present project to clinical and AMS teams
- Test phase and data analysis on 259 samples

The Results

- 25 positive results contributed to the diagnosis and early treatment of patients with confirmed fungal infections.
- 32 negative results directly contributed to either stopping of antifungal therapy or an antifungal therapy not being prescribed.
- A further 87 negative samples prevented the use of empiric antifungal therapy in patients with sepsis of unknown origin or risk factors for fungal infection.
- Turnaround time improved from 109 days to less than 3 days, with an average of 1 day.

The Benefits

- **Improved patient care thanks to improved turnaround time and high reliability of negative test.**
- **Antimicrobial stewardship gains – ruling out unnecessary treatments supports the correct use of antimicrobial therapy to improve patient outcomes and reduce development of resistance.**

The Figures

- €15,243 invested (Spark= 12,500; MMUH = 2743)
- €81,064 saved on antifungals
- €16,699 saved by processing tests in house
- Net saving during project = €82,520

The Potential

There is an expected saving to MMUH (580 beds) of €123,780 per year, and MMUH Laboratory has ability to scale up service to provide tests to other hospitals in the future.

Spark Seed

Spark Seed Case Study

Ambulatory Emergency Care for Older Adults in Emergency Dept

Innovators: Dr Rosa McNamara, Consultant in Emergency Medicine, St Vincent's University Hospital, Dublin.

The Problem

The Emergency Department at St Vincent's University Hospital sees 20,000 patients per annum aged 65 years or older, many of whom were automatically triaged to trolley areas as staff worried about falls risk, memory problems and frailty. This meant that older patients with low triage category waited for longer to be seen and often needed help to negotiate hospital trolleys even though they were normally independent. Was this process putting our patients at risk of deconditioning, incontinence, delirium and falls? Were we taking away patient's independence? Are staff more likely to underestimate patient's functional capacity when assessed in this setting, contributing to a tendency to admit?

The Opportunity

Would an ambulatory care approach in a frail friendly environment promote patient independence, and ensure the flow of patients to the facility that could provide the care that they require i.e., right person, right place and right time?

The Project

Design an ambulatory care stream, including:

- Furniture that was more appropriate for our patient cohort;
- Mobile computers for patient recreational use;
- Engaging artwork that allowed those with memory problems to easily orientate themselves;
- Rearrange staffing rearranged to address concerns around falls risk and memory problems
- Create rapid access pathway

The Results

- The ambulatory care stream opened in 2020
- 447 patients seen with an average age 82 (range 55-101)
- 75% went home to their usual place of residence
- Remaining 25% admitted to various setting including rehabilitation, respite care or to one of the 3 local hospitals in our area.
- Half national estimated admission rate in this age group; ten per cent with rate of admission for 2019

The Benefits

- **Identification of patients that were suitable for management in an ambulatory pathway.**
- **Expedited assessment and discharge planning, diverting admission for the majority.**
- **Strengthened links with local hospitals and community providers.**
- **We plan to maintain the service going forward. The hospital has agreed to fund ongoing costs**

The Figures

- **€13,685** invested (Spark)
- Estimated cost per geriatric admission **€7,172** [€478 per bed per day X 15 day average stay]
- **10%** lower admission rate due to this initiative
- Total saving = **€803,258**

“The team behind the Spark are incredibly active, care deeply about innovation and improvement in the system and are strong advocates of Human-Centred design. It’s important to point out that Spark doesn’t offer workshops just for the sake of workshops, they are linked to funding and action. Staff on the programme all have ideas to improve the system around them, and this training helps them understand the problem in a different way and provides them tools, techniques and hopefully creative confidence to take action.”

We have seen some really powerful reframing of challenges and so many great initiatives being implemented.

This is all art of a bigger drive to bring design and healthcare closer together.

We have been introducing Human-Centred design approaches to hundreds of medical students which, when you think about it is quite exciting. Not because they will all start designing, but because the design mindsets like empathy, problem framing, communication, and creativity can really complement what medics do, and I really believe can make them better Doctors.

Earlier this year, we identified an inability to prototype and experiment with ideas as an important barrier to innovation. In response, we designed a really cool mobile design lab stocked with tools, materials, instructions and case-studies for making. As a pilot, these Makerlabs will be placed into five hospital library’s later this month. In a complex public system like healthcare, a ground-up approach is the right one as it builds understanding, ‘buy-in’ and all-important evidence for innovation impact.

Trevor Vaugh,
Maynooth University Innovation Lab,
The Big Fix, RTE, Actionable Innovation
Public Service Innovation Advisory Board

Spark
Innovation Programme

HSE-HIHI Spark Ignite

Spark Ignite

HSE-HIHI Spark Ignite

Spark Ignite is run in association with the Health Innovation Hub Ireland (HIHI), the Health Service Executive (HSE), the Office of the Nursing and Midwifery Services Director (ONMSD), the National Health and Social Care Professions Office (HSCP), and National Doctors Training and Planning (NDTP).

Spark Ignite is an innovation competition that is run in collaboration between NDTP and Health Innovation Hub Ireland (HIHI). The goal of this competition is to **help staff in the health service develop solutions to the challenges faced by care providers and patients.**

Entrants are asked to plan, perfect and then pitch their ideas at the event. The winners of the competition are given funding to further develop their ideas and are getting on-going support and mentorship.

This unique bottom up approach, supported by the commercial and industrial experience of the HIHI team, allows staff to articulate their ideas in a structured, needs led manner and builds the knowledge and confidence of individuals to promote their ideas for solutions based on their frontline experience within the healthcare system.

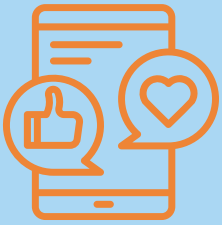
The Spark Ignite programme provides an engaged cohort of the HSE with the skills and means to assess innovative ideas, understand the process and requirements to bring them towards reality, and employ these skills to their current work practices.

Developing a culture of innovation from the ground level, by empowering staff to develop their ideas that will ultimately deliver benefits to patients, improve efficiencies, reduce costs, and deliver new products, processes, technologies and services, makes Spark Ignite an approach that is scalable to other departments within the public sector.

Spark Ignite

- Open to all HSE staff
- Bottom up approach
- Learn innovation and Design Thinking methodologies
- Validate unmet clinical needs and determine if a market exists for their proposed solution
- Identify the stakeholders and develop a coherent value proposition
- Understand the product development pathway
- Reviewed by a panel of experts from various sectors
- Funding awarded for further development of winning ideas

HSE-HIHI Spark Ignite at a Glance



35k
Social media engagements

4k
HSE staff engaged via email and in-person contact

151
APPLICATIONS

From over
45
disciplines

36
Solutions Shortlisted

160+
Attended workshops

Awarded funding totalling
€30,000

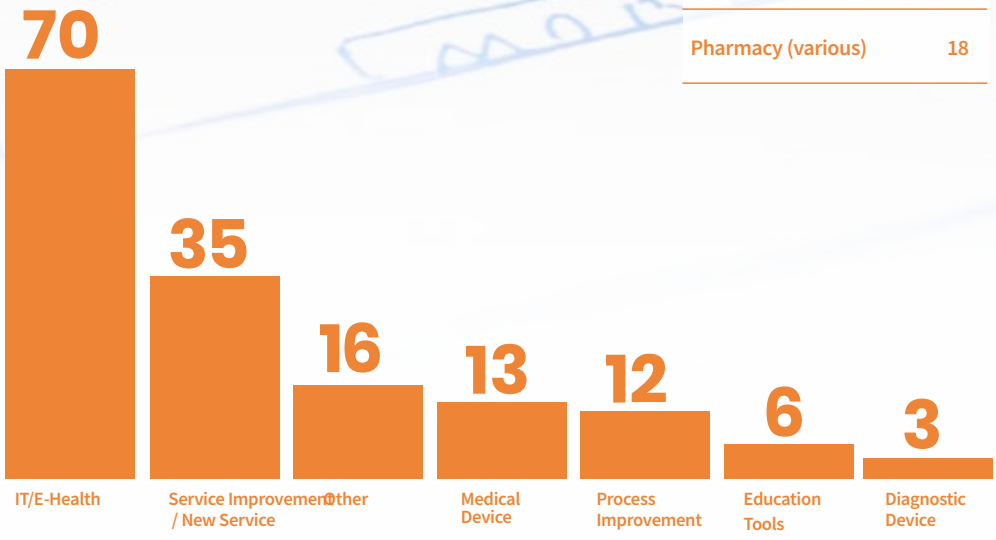
Spark Ignite

Overview of Applicants & Projects

49 Nurses	
Staff Nurse	18
Clinical Nurse Specialist	16
Candidate ANP	1
Advanced Nurse Practitioner	8
Public Health Nurse	2
Quality Improvement Midwife	4

51 Doctors	
Medical Student	3
Medical Intern	7
NCHD	18
SHO	6
Consultant	8
SpR	8
Medical Officer	1

74 Health & Social Care Professions	
Clinical Engineering	1
Dietetics	5
Medical Physics	2
Occupational Therapy	13
Physiotherapy	17
Play Therapy	2
Radiography	1
Social Work	2
Speech & Language Therapy	7
Medical Science	8
Pharmacy (various)	18



*Applications may be in more than one category

Spark Ignite

South Regional *Winners*

HIHI Cork

Individual Winner

Fluid Heart Tracker App

Norma Caples - CNS/RPN, UHW

Checkmate is a patient engagement application for early identification of heart failure with huge potential to save lives.

› Expected Benefits

Early identification of weight gain pertaining to heart failure

› Potential Impacts

- Improved patient care
- Patient empowerment
- Community care
- Reduction of Risk
- Cost Savings
- Improved Quality of Life

One to Watch

OA Knee Pathway

Siobhán Corcoran, Clinical Specialist Physiotherapist, UHW

The Establishment of Novel Clinical Pathways for Orthopaedic Outpatient Referrals, integration of local community services and multidisciplinary triage across the South Eastern Region.

› Expected Benefits

Improved pathway for those needing to see an Orthopaedic Surgeon quicker

› Potential Impacts

- Improved efficiencies
- Improved patient experience

Team Winner

Patient-led Education Tool

Dr Lyndsey Paul, Consultant, UHW

Dr Catriona Gallagher, SpR, UHW

Anita Flynn, Staff Nurse, UHW

An application to provide reminders of test and vaccination dates, record results and improve self-awareness, to reduce the risk of cancer and infection in the immunosuppressed population.

› Expected Benefits

Improved safety profile of immunosuppressive drugs

› Potential Impacts

- Reduction of risk
- Improved quality of life
- Reduction of costs
- Patient empowerment

Fastest to Market

SelfCare

Ali Rose Sisk, RGN & PhD, CUH

A platform for monitoring nursing home processes.

› Expected Benefits

Improved nursing documentation logging procedure and audit automation

› Potential Impacts

- Improved efficiencies
- Reduction in costs
- Automation

Novelty Winner

A Predictive Model for Emergency Departments

Jonathan Harrington, Data Analyst Lead, MUH

A software solution to predict Emergency Department activity, determining common patterns of activity through machine learning and existing data.

› Expected Benefits

Reduce ED overcrowding, long wait times, cancelled procedures, and budget overruns

› Potential Impacts

- Queue Application Management for OPD
- Improved efficiencies
- Reduced waiting times at clinics

Spark Ignite

East Regional *Winners*

HIHI Dublin

Individual Winner

PressiDect

Siobhán Ryan, Med Student, RCSI

A device to mitigate the risk of patients developing pressure sores during surgery.

› Expected Benefits

Improve the current standards for intraoperative pressure care reducing pressure sore incidence

› Potential Impacts

- Revenue potential
- Improve patient care
- Reduce risk of complications
- Reduce associated costs of complications

One to Watch

Falling Down

Andrew Fitzgerald, Physiotherapy Assistant, St. James

An adjunct support for adult incontinence pads to ensure they remain in place and protect a patient's dignity.

› Expected Benefits

Improve grip for incontinence pads, helping to retain patient's dignity

› Potential Impacts

- Improved patient care
- Improved efficiencies.

Team Winner

Blood Stock Inventory Management

Alison Harper, Chief Medical Scientist, TUH

Helena Begley, Medical Scientist, Naas

Fergus Guilfoyle, Chief Medical Scientist, Coombe

A weekly blood exchange programme between three sites aiming to improve O negative stock levels.

› Expected Benefits

An estimated €370,000 saving to HSE annually

› Potential Impacts

- Reduce cost of blood products
- Maintain critical stock of blood
- Improve patient outcomes
- Improve efficiencies of life
- Reduction of costs
- Patient empowerment

Fastest to Market

Model for Amniocentesis Procedures

Dr Maria Cheung, NCHD, NMH
Dr Gillian Ryan, Fetal Medicine Fellow, NMH

A simulation model for Amniocentesis and Chorionic Villus sample training.

› Expected Benefits

Development of a training tool for amniocentesis and chorionic villous sampling

› Potential Impacts

- Improve training & revenue potential
- Reduce risk of errors

Novelty Winner

UV Alert System

Dr Barbara McGrogan, Research Scientist, NCCP

A campaign to raise awareness of the UV index (UVI) and promote sun protective behaviours in the outdoor worker setting.

› Expected Benefits

Improved understanding of UV and SunSmart behaviour for outdoor workers to reduce skin cancer incidence

› Potential Impacts

- Reduced incidence of skin cancer
- Reduction in cost to the exchequer
- Reduced the burden on the healthcare system

Spark Ignite

West Regional *Winners*

HIHI Galway

Individual Winner

A Novel, Early Detection Tool

Helen Ryan, Sr Medical Scientist, UHG

A home diagnostic test for early detection of leaking amniotic fluid following non-overt rupture of amniotic membranes in expectant mothers.

› Expected Benefits

Novel diagnostic for the detection of amniotic fluid for quicker intervention and better patient outcomes

› Potential Impacts

- Revenue potential
- Improved patient care

Team Winner

Establishment of a Measuring and Monitoring System

Marie Ronan, Antimicrobial Stewardship Pharmacist, Saolta

Rose Cafferkey, Antimicrobial Stewardship Pharmacist, MUH

A digital smart tool to tackle the rising threat of antimicrobial resistance to public health through key performance indicators.

› Expected Benefits

Software to monitor and audit antibiotic use in real time

› Potential Impacts

- Reduction in costs
- Improvement in medication usage
- Increase in patient options

Novelty Winner

Chimera Plate

Dr David Tiernan, Orthopaedic Reg/ED SHO, UHG

A dynamic locking plate and screw system for setting bones.

› Expected Benefits

Medical device to optimise bone's natural ability to heal

› Potential Impacts

- Revenue potential
- Improvement in patient care
- Improvement in efficiencies
  Reduction in cost

One to Watch

Virtual augmentation of breast cancer for surgical planning

Dr John O'Donnell, Breast Surgeon (trainee), UHG

A 3D imaging system to convert mammograms from 2D to 3D, allowing surgeons to locate a cancerous mass before resection.

› Expected Benefits

Improved breast imaging for tumour removal leading to better clinical outcomes

› Potential Impacts

- Improve patient care
- Improve efficiencies
- Reduce risk
- Revenue potential

Fastest to Market

JacLite100

Jen Carroll, Emergency Call Taker, National Emergency Operations Centre

A prototype device to assist first responders in cardiopulmonary resuscitation.

› Expected Benefits

Keychain device to assist timing while performing CPR

› Potential Impacts

- Strong revenue potential
- Improve patient care

“If we violate [trust] with bad design – anything from a policy to a spatial design – that relationship is eroded and the patient is going to get worse care. Preserving that relationship is critical.

...most of us don’t realize that everything in healthcare is design.”

Dr Bon Ku
Assistant Dean, Medical Education
Thomas Jefferson University

Spark Ignite Case Study

Spark Award 2020 National Winner

Marie Ronan & Rose Cafferkey

Antimicrobial Stewardship Pharmacists, MUH

Key Performance Indicators for Antimicrobial Stewardship: establishment of a measuring and monitoring system

Smart Antimicrobial Stewardship Tool

Innovators: Rose Cafferkey and Marie Ronan, Senior Clinical Pharmacists and Antimicrobial - Stewardship Pharmacists, Mayo University Hospital (MUH)

The Problem

Antimicrobial resistance is a worldwide problem, and is growing year on year. Overuse and inappropriate use of antimicrobials results in increased emergence of multidrug-resistant bugs that are difficult to treat. Antimicrobial Stewardship (AMS) is a set of coordinated measures designed to improve and measure the appropriate use of antimicrobials, and therefore reduce the emergence of antimicrobial resistance. Ireland's National Action Plan (iNAP) on Antimicrobial Resistance promotes active surveillance feedback mechanisms to inform performance and activities and has developed a set of KPIs to promote improvement in antimicrobial use.

The Opportunity

Our innovators identified the lack of a designated national programme or data collection system for a co-ordinated measurement of KPIs for AMS.

What are the potential gains from a coherent and co-ordinated method of data collection, measurement and oversight to manage effective Antimicrobial Stewardship in Acute Hospitals in Ireland?

The Project

- Design a data collection tool for concise collection and reporting of all National Recommended KPIs.
- Design a real time auditing platform, through monitoring and surveillance of antibiotics.
- Conduct a pilot study.

The Results

- 93% decrease in the use of the most broad spectrum class of antibiotics.
- 45% decrease in the use of IV antibiotics.
- Reduction in patient hospital stay from 4.14 days (2017) to 3.76 (2019).
- Adhered to WHO, iNAP, and HIQA recommendations for real time audit.

The Benefits

- **Pilot study demonstrated €100,000 decrease in spend on antibiotics over a two-year period.**
- **Clear potential to scale.**
- **A platform and app are being developed for pilot in other hospitals.**
- **It will be possible to compare quality of prescribing across multiple sites.**
- **Platform will enable sharing of quality improvement initiatives with proven outcomes for AMS.**

The Figures

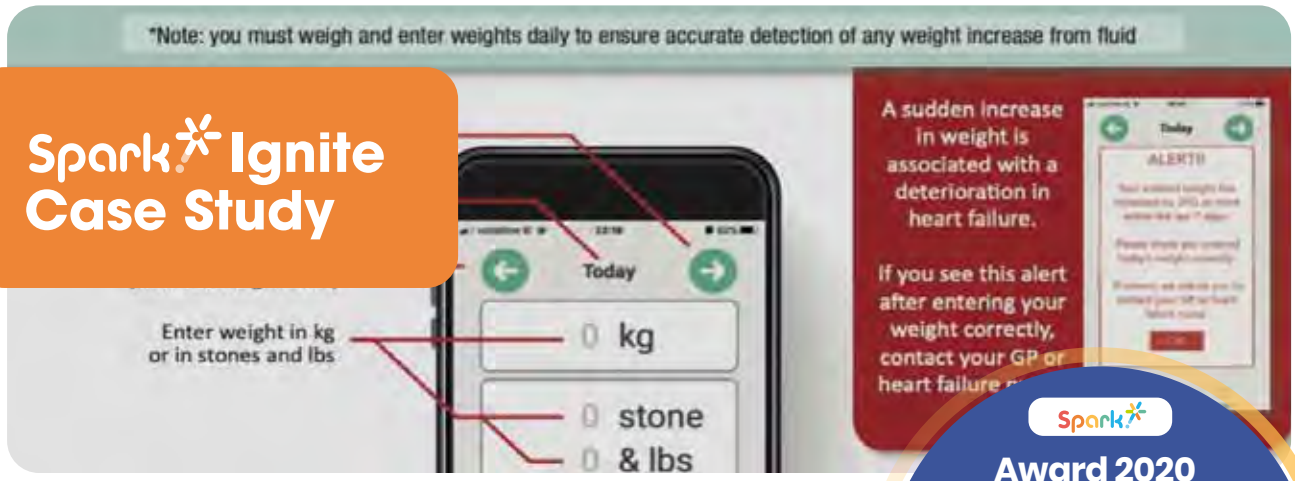
€6,000 invested (Spark). €100,000 saved on antibiotics, in MUH (300 beds) over two years

The Potential

Potential saving across all Irish public hospitals (approx. 14,400 beds) over one year = up to €2.4million.

Spark Seed

Spark Ignite Case Study



Spark
Award 2020
Regional Winner
Norma Caples
Clinical Nurse Specialist & Registered Nurse Prescriber, University Hospital Waterford; Lead Nurse, National Heart ProgrammeMobile phone app to aid those living with HF to manage risk

Fluid Heart Tracker App

Innovator: Norma Caples, Clinical Nurse Specialist & Registered Nurse Prescriber, University Hospital Waterford Lead Nurse, National Heart Programme

The Problem

Fluid retention, manifested by weight gain is indicative of Heart Failure (HF). Prompt identification of weight gain before symptoms manifest enables rapid intervention leading to better patient outcomes and reducing associated healthcare costs. Patients with HF are required to record their daily weights, calculate weight gain and to alert their clinical teams when weight gain exceed certain limits. However, up to 66% of HF patients have mild cognitive impairment, with a reduction in numeracy and cognition skills resulting in an inability to recognise weight gains.

The Opportunity

What tool could be developed to assist patients identify an increase in weight, and encourage them to seek help sooner, leading to earlier intervention and improved clinical outcomes?

The Project

- Fluid Heart Tracker is a simple mobile phone app to record weight
- Alerts the user to seek clinical help when their weight is increasing.
- Designed in conjunction with those living with HF Removes the patient's need to recognise/calculate an increase in weight.
- Reduces the risk of unidentified deterioration in heart failure.
- Patients and carers are empowered to manage their condition in real-time

The Results

A pilot study of the App on 31 users identified that the App was easy to use, provided benefit to users and is something that they would recommend to others. The app is available on the Irish Heart Foundation (IHF) website. Norma is now conducting a follow-on study as part of a PhD thesis at TCD.

The Benefits

- **Self-care model supports a community based care methodology**
- **Potential for earlier intervention**
- **Better patient outcomes**
- **Reduction in hospital admissions**

The Figures

€3,000 invested (Spark)

The Potential

There is a potential cost saving to the HSE of €15,000 per HF patient per year using the app.

Spark
Innovation Programme

Spark Design

Spark Design

Spark Design

Healthcare is complex and problems within healthcare as a result are complicated, requiring intelligent solutions. At Spark we fully believe in human centred design and our goal is to spread design principles to healthcare professionals. Great design is inclusive well thought out and makes you ask how we ever did things differently before.

Innovation is a **complex process that involves myriad competencies.** It can be a long journey from identifying and generating insights into a problem; researching, devising, prototyping, and testing solutions; measuring the impact of an initiative; and implementing and scaling successful solutions.

Design Thinking and Design Practices are **invaluable resources that help potential innovators structure the innovation process, collaborate, and set key milestones** for each stage of a project.

We at Spark are passionate about the use of design principles in healthcare and strive to integrate with the design community and encourage design thinking and user centred design in all of our initiatives.

- Promoting design practices in the workplace
- All seed and ignite funding applicants attend Design Thinking and Innovation workshops
- Matching designers with Seed and Ignite projects to maximise impact
- Designer in Residence, St James University Hospital
- Design Challenges / Design Weeks
- Linking with the Design community such as in our COVID Design on the Frontline initiative

Spark Design Outputs at a Glance

TOTALS

5
Design Thinking workshops hosted in 2020

1
In Person workshop

4
Online workshops During the Pandemic

BREAKDOWN

287
Total number of applications

174
Participated in workshops

106
Projects that pitched for funding/support

TOTALS

2
Hospital design challenges supported

1
National COVID Call

5
MakerLabs co-designed with the HSE National Library

Spark Design

Design Challenges

Designer in Residence

St James' Hospital

This project aims to prove the value of embedded clinical innovation and to form a basis for establishing a medium-to long-term Design Innovation Service at SJH in collaboration with the Spark Programme. In the shorter term, the intention is to recruit additional technical skills to this service to allow more projects of higher complexity to be pursued.

Design Challenges

- Annually in MMUH and SJH
- Healthcare staff provide problems in their service for design experts to solve collaboratively over a focused week of design
- Amazing solutions developed rapidly
- Interdisciplinary collaboration between healthcare workers.
- Broaden competencies and knowledge in other domains

Design Week

Mater Hospital - NCAD

Running since 2016, Masters level design students from National College of Art and Design and Mater staff participate together in an intensive design sprint.

Challenges are set by staff through an open call, and following four days of intensive research, ideation and prototyping and testing in a temporary design lab onsite at the Mater, students present their solutions at the very popular 'Design Showcase' event.

The design students come from a variety of design backgrounds, including the MSc Medical Devices group and Masters in Interaction Design and Service Design. Matched with the subject matter expertise of the hospital staff, their different skillset and perspective provides a fresh look at old problems and generates really exciting and creative solutions.

In 2019, Spark Innovation came on board as project sponsor, providing a €3000 seed fund to the winning team, a much needed injection of cash to help high potential projects get off the ground.

Design on the Frontline

A national call to the design and innovation community for ideas to COVID related healthcare challenges

We put two simple questions to HSE frontline staff:

'What current challenges are preventing you from doing your job well today?'

'What is currently causing your patients distress or leading to negative experiences?'

The response was overwhelming. Design briefs capturing the most pressing challenges were developed by dozens of healthcare staff at a Design Thinking workshop led by Trevor Vaugh of Maynooth University Innovation Lab.

These briefs include descriptions of the pain points, background information, a review of existing solutions, and a wealth of contextual insight.

For each brief, a frontline healthcare champion will continue to provide insight to teams taking up the challenge.

In 2021, a panel of experts will help us to select the most promising concepts and shortlisted teams will present their ideas to HSE leadership. It is intended that solutions will be fast-tracked and implemented by bringing together teams and end users.

Brief 1	Brief 2	Brief 3
How might we tackle some of the interaction, efficiency & comfort challenges arising as a result of PPE usage?	How might we identify, prevent, reduce or manage the onset of frailty in older adults while socially isolating / cocooning?	How might we mitigate some of the negative impacts of social isolation, poor communication and boredom to enable more meaningful connections between people with amplified needs?

Spark Actionable HSE www.designonthefrontline.com

Spark Design

MakerLab Pilot

MakerLab is a mobile workstation designed to give staff the tools, materials and permission to build early stage prototypes and experiments.

Residing in the Hospital Library, but designed to fit in the work environment, each MakerLab will be accompanied by training workshops and inspiring healthcare innovation case studies, and includes a display space for exhibitions, information, case studies, innovation frameworks etc.

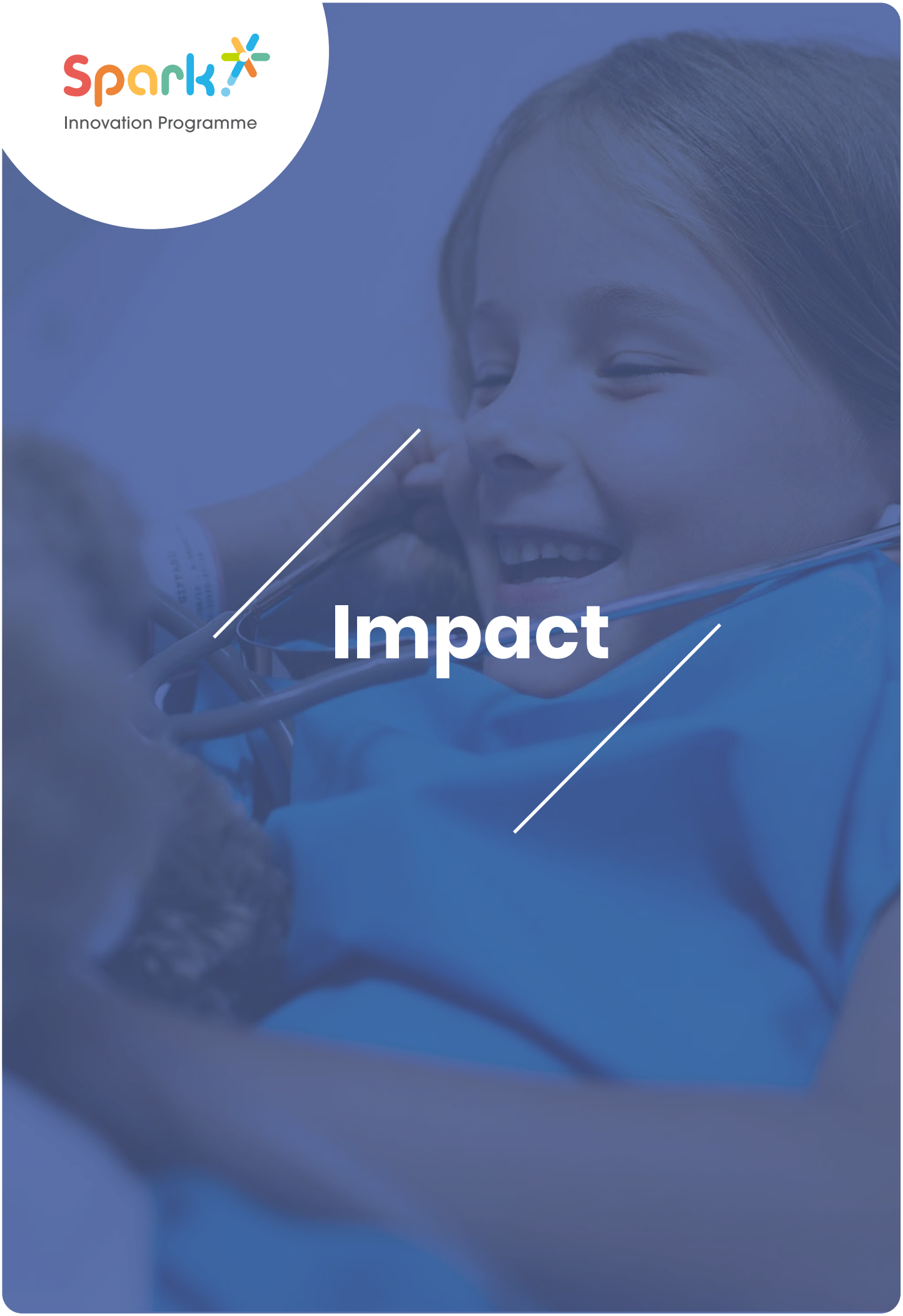
MakerLabs come fully stocked with the following:

- hand tools
- tapes, adhesives, clips and fasteners
- sheet materials commonly used in early stage medical equipment
- miscellaneous materials and 'doohickies' ideal for typical innovation prototypes
- pipes, rods and tubes
- innovation workshop templates and supplies (sticky notes, pens, markers, Blutack, sketchbooks etc.
- clamping vice, whiteboard, tool hangers

An initial pilot will see MakerLab installed in five hospital libraries across Ireland:

- **Cork University Hospital**
- **Connolly Hospital**
- **Galway Merlin Park**
- **Tullamore Regional Hospital**
- **Our Lady of Lourdes Hospital, Drogheda**

Spark!
Innovation Programme



Impact

Evaluating Impact

What you can't put a number on

Through pursuing our three strategic objectives we are empowering frontline staff, creating a supportive ecosystem for innovation, and making the healthcare system more capable of carrying innovative staff projects and processes. Together with frontline staff, we are helping to create a better health system that is attentive to the needs of service users and responsive to the impulses of care providers to improve services through innovation practices.

Empowering frontline staff

- The power of being told your idea is really good
- Feeling your insight, experience and creativity can make a difference
- Being given the tools to advance your solution

A better healthcare system

- Improved services
- Better use of resources
- Patients feel listened to

A culture of innovation

- Problems are resolved quickly at little cost.
- Collaborative working becomes the norm, and promotes mutual inter-professional trust, respect, and collaboration.

At Spark in 2021 We're Looking Forward to

1 Piloting Makerlabs

We're looking forward to piloting MakerLabs across five hospitals, because we're excited to see how these mobile workstations transform the possibilities for fast-track frontline innovation, and because our strategic partnership with the National Health Library Service dates back to the earliest days of Spark.

2 Cross Collaboration

We're looking forward to seeing even more engagement from our colleagues in Nursing, Midwifery, and the Health and Social Care Professions, which means even more applications to Seed and Ignite calls, more cross-disciplinary collaboration, and more exciting projects.

3 Designer in Residence

We're looking forward to seeing what arises from the first Designer in Residence collaboration with St James University Hospital, which cements our mutual commitment to bringing excellence and efficacy through to design right the frontline of healthcare.

4 Tracking Progress

We're looking forward to tracking the progress of Seed and Ignite projects from years past as they scale up, rollout, commercialise, and transfer to different healthcare and public service settings.

5 Scholarship Programme

Design on the Frontline will undergo a change in format in which we will be supporting designers at the grassroots level with a scholarship programme. Twelve student designers/ design teams will present their solution to a healthcare related problem - a competition format at a national showcase - May 2022.

6 Expanding the Team

We're collaborating with OMNSD and HSCP to expand the Spark Team, potentially with new Innovation Fellows from Nursing and Midwifery and the Health and Social Care Professions.

7 Evaluating Value

We're looking forward to working with a Health Economist who will help us evaluate the true value of some of our most successful projects.

8 Spark Summit

We're looking forward to putting together our next Spark Summit, the first of which in 2019 won a commendation for Best Conference at the Irish Healthcare Awards. When we can welcome passionate healthcare innovators back together to share their stories of creativity, invention, success, and learning, we will know the pandemic is behind us.

2020 Year in Review

700
Total applications received

322
Groups/individuals who attended workshops

79
Funded projects

€148,715
Project funding

€1,277,038
Savings generated

Spark

Innovation Programme

spark@hse.ie
@ProgrammeSpark
spark_programme