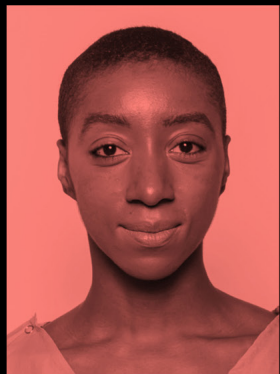


WHITEPAPER

**EMPOWERING EVERYONE IN THE BOWEL
CANCER CARE ECOSYSTEM, END TO END**

HOW AN OPEN INNOVATION POP-UP IS HARNESSING THE POWER OF
HUMAN-CENTRED SERVICE DESIGN AND DIGITAL TECHNOLOGY TO TRANSFORM
COLORECTAL CANCER CARE AND DELIVER SOCIAL EQUITY



Author: Alex Barclay
with contributions from Dr Noel O'Kelly, Alexis Schizas and Emmanuel Akinluli

ABOUT

Following Fuzzy's recent successes in exploring ways to reduce the elective care backlog and staff burnout, we have applied our ground-breaking methodology once again. This time, we teamed up with our friends over at Spirit Health, an innovative provider of remote patient care technology, to tackle a subject that both organisations felt passionately about. We set out to find ways to empower every person involved in the Colorectal Cancer (CRC) care pathway, generating concepts that could revolutionise the healthcare ecosystem.

We created a pop-up open innovation model for healthcare design and delivery, a model that is driven by a desire to deliver upsides for humans and societal equity at scale and which brings experts together to collaborate on specific challenges. To build the model we deployed human-centred design tools and techniques to enable a diverse group of talented individuals in the public and private sectors to work together in a powerful, albeit temporary, way.

In my mind, this model resonates perfectly with human-centred design, it's a hand-in-glove affair. Both put people at the heart of all activities, and

the driving purpose of both is to deliver services that make life better for us humans. This is the case whether we are patients, carers, healthcare workers, or anyone else in the care delivery ecosystem.

This approach, one that we have used before to great effect, meant some of the very best experts working on the frontlines of CRC care could collaborate in an open-spirited, focussed and fast-paced way. Specialists from the NHS, from charities, from service design, business strategy and digital technology backgrounds brought their insights, creativity and vision into the mix. The direct input and insight from current CRC patients was also critical to the project's success, as these individuals truly understand the existing pain points of the complex current system.

The open, expert-driven approach we took creates a holistic, 'big picture' view, enabling the contributors involved to understand the CRC pathway on macro and micro levels. This provided a vantage point from which to assess the pathway as an end-to-end system of elements, and helped us to see the pathway

ABOUT

through the eyes of patients and healthcare staff. This allowed the team to effectively identify opportunities to improve CRC care delivery, and align them in a way that maximises their benefits and enables scalability.

To generate the ideas, we embarked on a number of human-centred design-thinking exercises, in which we identified the most pressing 'How Might We?' questions upon which to base our concepts. The sessions were frequently conducted via video call, and we encouraged everyone to contribute by embracing the open, holistic method.

Following a set of workshops that we conducted in our trademark 'rapid innovation' style, 80 experts were able to generate and stress-test more than 140 ideas in just 80 hours. This incredible achievement marks yet another huge evolution in our innovative methodology, demonstrating the power of human-centred design, dynamic ways of working, and the true potential of digital technology.

This work stands as proof that this expert-driven, open innovation model, coupled with a human-centred design thinking approach, enables us

to collaborate, share best practices and rapidly deliver scalable, transformational results in the healthcare ecosystem. These outcomes have the potential to benefit patients and healthcare workers alike, while simultaneously reducing costs and enhancing operational efficiency. The importance of this project is reflected in the selfless contributions of the many experts and patients who were involved, and I cannot thank them enough for stepping forward and helping to drive meaningful change.

Best,
Alex Barclay
Founder & Design Director, Fuzzy
hello@fuzzy.org
<https://fuzzy.org>

CONTRIBUTORS

This project is the result of many (often very pressured, time-poor or ill) people, saying ‘yes, count me in, I’ll help’ when called. There are more than 80 such people, from different specialisms and with diverse experiences, and others too who gave their time, and who nudged, cajoled, connected, and steered to get this over the line. To me these people are frankly astonishing, and all their names are on the roll call at the back of this paper.

On a personal note, when I look back at what we have achieved, I am hugely moved by the effort, goodwill and dedication that everyone on the project showed. From the distance of this page, I stand and salute you and say a huge and heartfelt ‘thank you!’ You made this happen.

I should also say a big ‘thank you too!’ to my team at Alvarez and Marsal - or A&M for short. When I joined, this project was already rolling, and the A&M team has been wholly supportive all the way through. Indeed, in the spirit of our ‘leadership, action, results’ tagline, many of my new colleagues immediately came and ‘played the problem’ with me and the rest of the CRC care crew.

Special thanks goes to David Champeaux, Ray Berglund and Jean-Laurent Poitou for giving me the space to work in and offering their excellent thinking.

On a final note, it would be remiss to not mention the late Dame Deborah James who passed away as we were completing the last phases of this project. She got it exactly right when she said:

“Find a life worth enjoying; take risks; love deeply; have no regrets; and always, always have rebellious hope. And finally, check your poo – it could just save your life.”

– Dame Deborah James



_Foreword 1

From Alexis Schizas, Consultant Colorectal Surgeon at Guy's and St Thomas' Hospital, and Emmanuel Akinluyi, Chief Biomedical Engineer & Head of Clinical Engineering at Guy's and St Thomas' NHS Foundation Trust.

FUZZY AND SPIRIT HEALTH ARE TRULY BREAKING NEW GROUND IN THE EMPOWERMENT OF THE HEALTHCARE ECOSYSTEM.

They have taken a refreshingly collaborative approach, to explore ideas to enhance the experience and outcomes of patients and professionals giving and receiving colorectal cancer (CRC) care. This paper will fascinate anyone who is passionate about the pathway.

Perhaps most interesting and powerful is the 'coalition of the willing' concept that brought CRC experts and patients together. It has promoted thinking that would not have occurred in a traditional healthcare setting. The scale and diversity of the coalition involved in the project meant that the perspectives shared were very broad, resulting in enhanced creativity and a human-centred approach.

This diverse group brought drastically differing sets of experience to the table, who were yet united by a common goal. Making the most of this opportunity and maintaining a sharp focus at all times, required creative, expert and careful facilitation, aided by technologies like the MIRO platform, the digital assets the team created and the design of the exercises. Although the group had very different people in it we were able to all see the big picture, end to end, and all the detail through the pathway too. The effectiveness of the methodology set out in this white paper makes it a case study that healthcare decision-makers across the globe should be talking about and replicating.

While there is no shortage of willingness and exemplary effort within organisations like the NHS, the insights this paper reveals offer a valuable source of direction when embarking on transformation activities. The paper creates a comprehensive checklist and ticks its boxes in one seamless move: from pinpointing and prioritising the most pressing CRC care pathway pain points, to sketching out feasible patient and healthcare professional (HCP) centric solutions in detail. Usefully, the paper also identifies what the next practical steps could be to get these ideas implemented into the patient pathway.

The reality is that healthcare transformation and innovation teams do not need to reinvent the wheel to bring about meaningful CRC care change, but instead they need to take a more human-centred view. Because of this, experts can use the findings from this white paper as part of their design processes, using them as a foundation to build and develop on.

_Foreword 2

From Dr Noel O’Kelly, Clinical Director, Spirit Health

Spirit Health are delighted and honoured to support the production of this white paper addressing key issues in the identification, diagnosis, and management of people with colorectal cancer. We wish to extend our heartfelt thanks to all those who gave up their valuable time to co-design the paper.

After working closely with an NHS ICS on co-designing and implementing a ground-breaking virtual ward for people with colorectal cancer recently; this project had special resonance. The brief was to look at the “pain points” on the clinical pathway and address practical ideas of how to improve the patient journey, utilising the expertise of all our contributors.

We hope the outcomes will be three-fold. Firstly, to help raise the awareness of colorectal cancer, secondly to stimulate reflection of the challenges to deliver end-to-end patient care, and thirdly to provide meaningful solutions which can be implemented at national, regional and local levels. The paper focusses on the aspects of both the “art of the probable,” but also the “art of the possible.”

At a time when we are witnessing the digital revolution in healthcare, we have focussed on how technology could be embraced to improve the experience of patients who for too long had been disenfranchised from the care they deserve.

We welcome the feedback from all who read and study this document in the spirit (no pun intended) of continuous quality improvement.

Dr Noel O’Kelly

Clinical Director, Spirit Health

digital@spirit-health.com

<https://www.spirit-health.com>

CONTENTS

10 SUMMARY HUMAN-FIRST HEALTHCARE	18 IDEA 01 WHAT DID THEY MEAN?	34 IDEA 09 TOTAL AND HOLISTIC RISK SCORE
12 THE BRIEF	20 IDEA 02 MEDICA BLOCK	36 IDEA 10 PREHAB AND DIGITAL PATHWAY SUPPORT
13 OUR APPROACH	22 IDEA 03 TOGETHER BETTER APP	38 IDEA 11 RECURRENCE RISK REMOTE MONITORING
16 MAIN FINDINGS	24 IDEA 04 TALK TO ME	40 IDEA 12 AUTOMATED EMAILS AND TEXT MESSAGES
17 IDEA NAVIGATION	26 IDEA 05 VR RELIEF EXPERIENCE	42 IDEA 13 AI IN PATIENT ASSESSMENT
	28 IDEA 06 EXERCISE TREATMENT PLAN	44 IDEA 14 ACTIVE WAITING LIST MANAGEMENT
	30 IDEA 07 BE YOUR OWN NURSE	
	32 IDEA 08 DATA-DRIVEN SCREENING	

CONTENTS

46

IDEA 15
GETTING IT RIGHT

48

IDEA 16
CLOUD-BASED
COLLABORATION

50

IDEA 17
DISCREET SPONSOR APP

52

IDEA 18
VIDEOBLOG

54

IDEA 19
BUDDY SCHEME

56

IDEA 20
CONNECTED CARE

58

IDEA 21
EARLY ACTION

60

IDEA 22
PRE-OP

62

IDEA 23
QR MASTER

64

IDEA 24
DIRECT PATIENT
ASSESSMENT

66

NEXT STEPS

67

CONTRIBUTORS ROLL-CALL

HUMAN-FIRST HEALTHCARE

Using a pop-up healthcare utility model, human-centred service design and digital technology to transform Colorectal Cancer care and deliver social equity

Every day, 46 people die of bowel cancer in the UK alone. This rate amounts to 16,800 deaths a year, and accounts for 10% of all cancer deaths. It is also the third most common type of cancer faced by both men and women, but despite all of this, systemic limitations are resulting in failures to effectively detect and treat the disease. Meanwhile, approximately 120 new cases of bowel cancer arise every day, adding even more pressure to the deteriorating model.

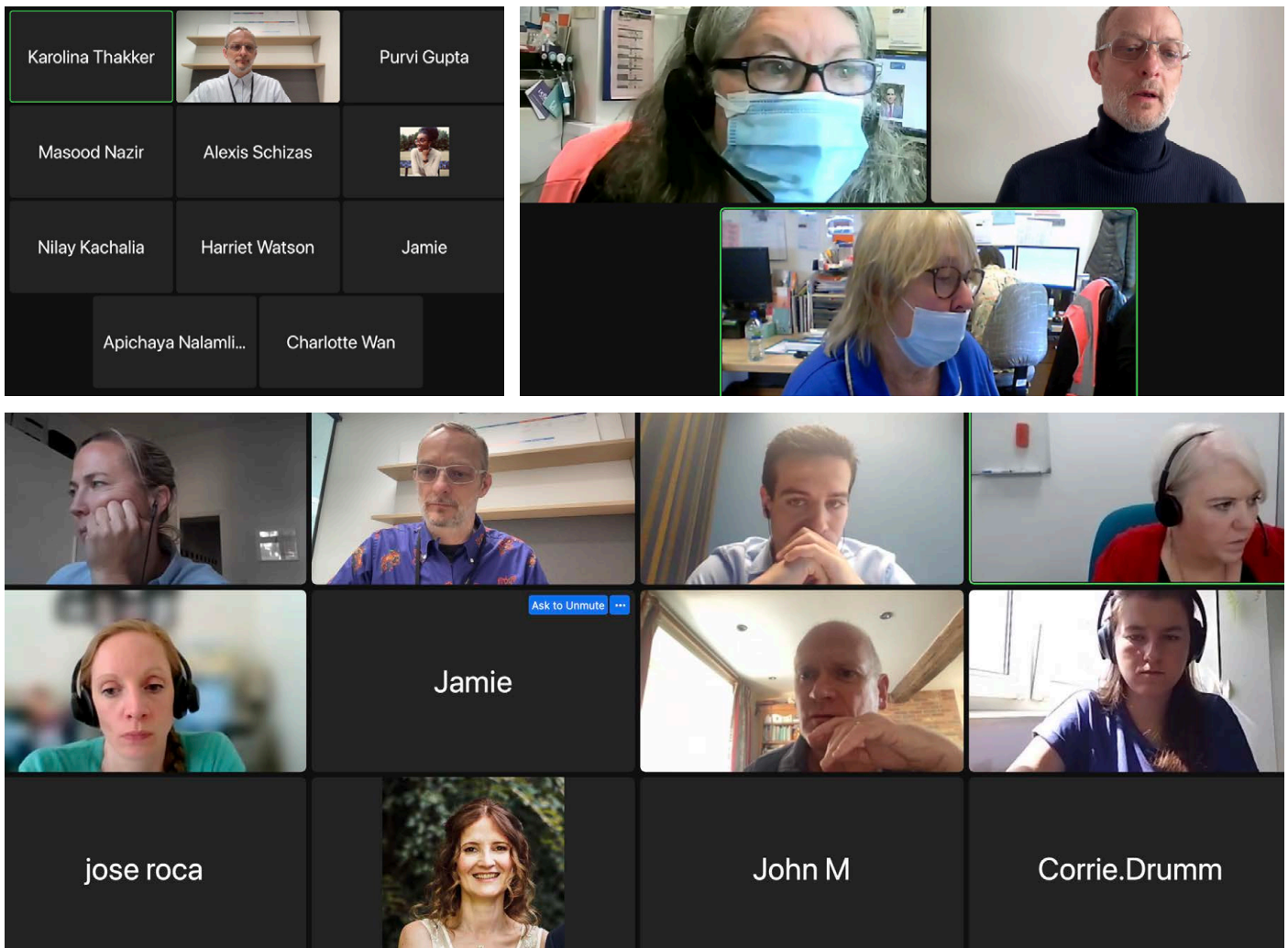
The NHS currently operates with an FTE workforce of 1.2 million, but it is currently being stretched to breaking point by a staff shortfall of 120,000. These overworked healthcare professionals are now fighting an unending battle to tackle an elective care backlog of over 6 million patients, which was worsened drastically by the COVID-19 pandemic and the response it required. Under these conditions, it is of no surprise that staff burnout and exhaustion is at a record high, with mental-health related staff absence costing the NHS £371.2 million a year.

As a result of the current conditions faced by the NHS and the limitations to patient care it entails, the detection and treatment of bowel cancer cases presents a major problem. According to Cancer Research UK, the NHS is failing to detect around 1,100 cases of bowel cancer every year in England because diagnostic services are so short-staffed. This is an especially troubling

statistic due to the critically time sensitive nature of bowel cancer detection, and its close correlation with survival rates.

Systemic innovation and growth at scale is vital to driving meaningful change, but numerous barriers must be overcome to facilitate it. Arduous bureaucratic processes and manual tasks are primary limiting factors, with routine admin taking up 50% of nurse time capacity, and much of doctors' as well. In this instance, automation solutions should be leveraged at scale to relieve healthcare professionals of routine manual tasks, enabling them to focus on more valuable work and human care. This example serves as just one of a plethora of cases in which human-centred service design and digital technology could be leveraged to transform the experience of everyone involved in the bowel cancer pathway, patients and healthcare staff alike.

At Fuzzy and Spirit Health, we recognise the critical need for the transformation of colorectal cancer care so we brought together a 'coalition of the willing' to identify innovative ways to meaningfully improve the colorectal cancer (CRC) care pathway. This group included GPs, surgeons, anaesthetists, CRC care consultants, nurses, patients and carers, to enable us to spot the pain and gain points for all those involved in the process.



CAPTION: The challenge in treating CRC patients is increasing and various reports have flagged how the waiting times for diagnosis and key treatment targets are being missed with 'potentially serious consequences' for patients and health care staff alike

Through a comprehensive scheme of ideation and stress testing sessions, we were able to rapidly develop and validate a set of high-quality ideas to revolutionise the pathway, which could serve as a blueprint for wider healthcare transformation.

During this process, we have once again demonstrated the capabilities of human-centred design methodologies in combination with digital technology. In 2021, Fuzzy showcased how multiple innovative, stress tested ideas could be generated on the subject of the elective care backlog in hours rather than weeks. In this paper, we seek to continue raising awareness about the importance of putting human needs at the heart of ideas, and to deliver transformational thinking that will bring positive change to the CRC care pathway.

THE BRIEF

Our primary ambition during this project was to find ways to use digital technology in a way that augments and enhances the existing colorectal cancer care service.

In particular, the ideas we generated needed to prioritise workload reduction while improving patient outcomes. To do this we set out to apply human-centred design, systems thinking, and digital technology concepts, using virtual collaborative workshops to efficiently harness the insights and creativity of our diverse group of contributors. It was vital to our team that the outputs of this project would be realistic and actionable, with the words of the CEO of the National Healthcare Innovation Unit at the front of our minds:

“Innovation without adoption isn’t innovation, it’s making nice toys.”

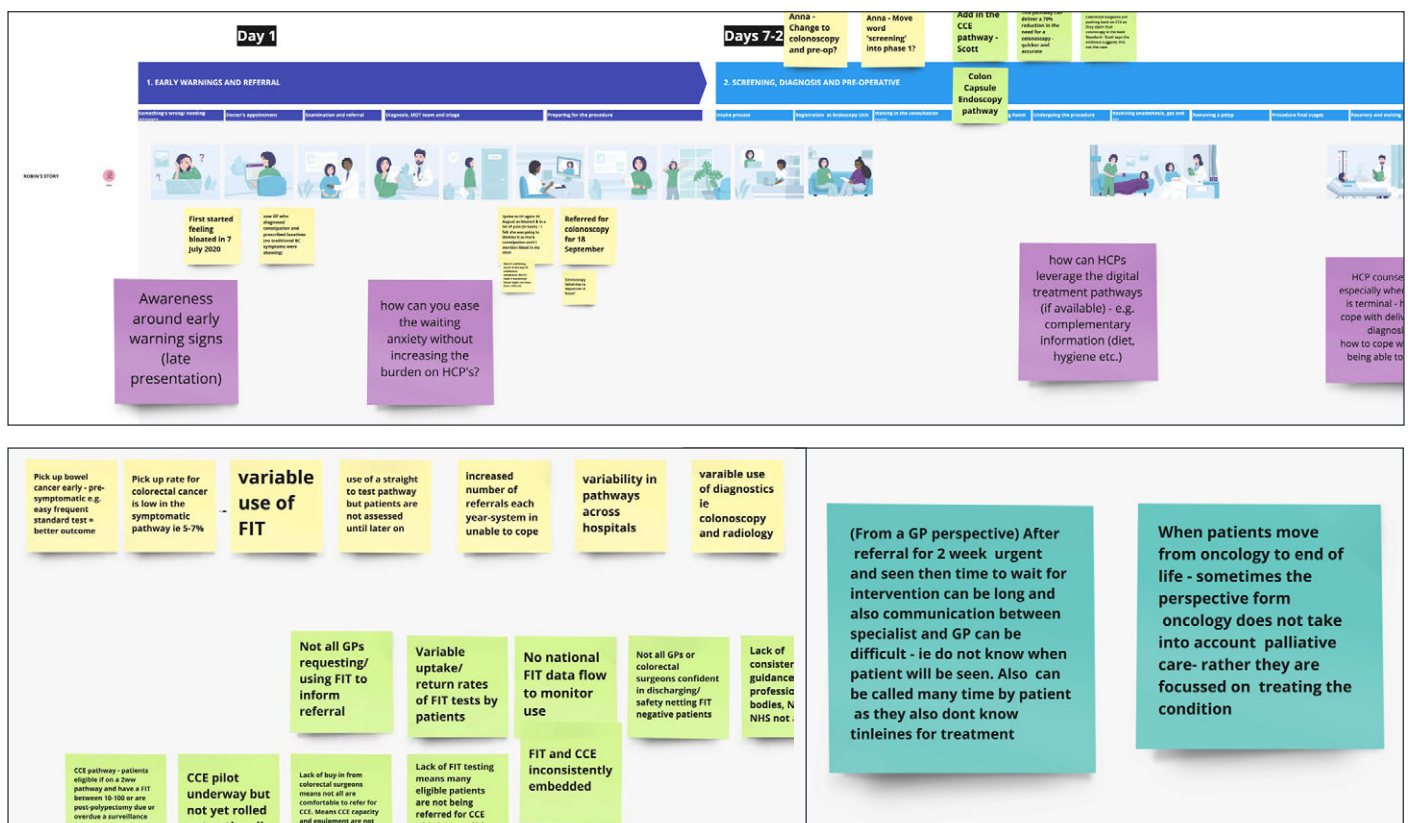
As in previous and highly successful projects, we chose to use the MIRO platform as a way to bring our thinking to life and to visualise them in a collaborative setting. This not only served as the ideal platform for generating the initial ideas, but it also enabled us to conduct rigorous stress-testing to create a highly impactful shortlist. We intended for our approach to be in keeping with other successful models, such as **Civica**, **Graphite**, and **Patient Revolution**, with the ultimate goal of sharing our ideas with healthcare leaders to bring about real innovation and progress.

OUR APPROACH

80 experts, 80 hours, more than 140 stress-tested ideas.

The complex nature of the CRC care pathway meant that we needed to analyse it in a comprehensive way to identify areas for improvement. To do this, we carefully blueprinted the entire pathway by leveraging the insights from the NHS, hospices, and charities, including their associated healthcare professionals and patients. The forensic process we undertook enabled us to identify the key themes upon which we could build and test our innovative ideas.

With the blueprinting of the pathway complete and the central themes highlighted, our joint team was able to begin the process of pain and gain point analysis. In addition to expert and patient-driven theoretical work and ideation, we also used a process of qualitative to quantitative data match-back, whereby we compared the qualitative data we had gathered from service providers and users with literature in the field. By comparing the insights, we had gathered with existing material



CAPTION: The CRC care pathway is complex so to make sure we enabled full visibility and a systemic view of all interactions, challenges and opportunities we mapped the current pathway, end to end

like NHS resources and Macmillan reports, we were able to double down on identifying the primary points in the CRC care pathway where change was needed most.

Before we could begin the ideation workshops, we needed to set out the 'How Might We?' (HMW) questions that would influence and stimulate the sessions. In addition to steering the sessions, the HMW questions were also created to ensure that our thinking was always tethered to the task of solving an unmet need or weak point in the existing CRC care pathway. To promote creativity and effectiveness in the workshops, we collated three sets of creative stimulus that were circulated in advance, which included case studies and inspiring examples of cancer care. This positioned the attendees to hit the ground running and bring their best ideas to the table in the allotted time.

Our online collaborative whiteboard platform of choice was MIRO, which enabled our distributed teams to work together in an agile, effective way. We conducted a process of onboarding and training the workshop attendees in the use of MIRO boards, ensuring that they could all access the tools and fully participate. This step enhanced the overall efficiency of the process, preventing disruption and ensuring that the attendees were equipped to perform optimally.

Once the attendees had been prepared to use MIRO and had engaged with the creative stimulus, we began a series of three intensive ideation sessions. These sessions included patients who have experienced the CRC care pathway, as well as specialist bowel cancer surgeons, GPs, and other individuals with first-hand experience of the pathway and its limitations. Using the HMW questions we established in advance; we were

able to work rapidly and effectively to map out a wide range of innovative concepts.

To capture the contributions made by the attendees of each session, MIRO provided the ideal conditions for individuals to add notes and enrich the overall idea. We used set templates for each idea to drive consistency, and to ensure that the most important factors were addressed. In addition to tackling the critical HMW question for each idea, we also named them, defined exactly what they were, who they would serve, and detailed the technologies and methodologies that could enable them.

The exceptional effectiveness of this agile approach led to the generation of over 140 detailed ideas, requiring us to conduct a filtration process to identify the very best examples. We used two stress testing and prioritisation sessions to examine and validate the ideas, ranking them based on a set of criteria that included desirability for end users, their feasibility, and the resources necessary to implement them.

As a team we narrowed down our extensive range of ideas to 25 of the best, many of which were identified and supported by the experts from Spirit and clinicians who work on the frontlines of this pathway. With a powerful shortlist defined, the next phase in our approach was the creation of this white paper, which provides insight into each of our best ideas and how they were created. In addition to sharing our thinking via this white paper, we also intend to participate in a series of roundtable events to communicate and discuss the project



MAIN FINDINGS

In this part of the whitepaper, we will explore the ideas deemed to be most valuable by the patients and experts involved in the workshops and stress testing sessions. All of these concepts contribute to our overarching goal of empowering every person involved in the CFC pathway, which can serve as templates for enhancing the healthcare ecosystem more widely.

IDEA NAVIGATION

In the next section are the top 'stress tested' ideas. To help navigate them there is a legend with colour coded themes - see below for more

Access to Information

Waiting/Delays

Information Management

Effective Referrals

Emotional Support

Communication

Physical Support

Standardisation

Workflow

Paperwork

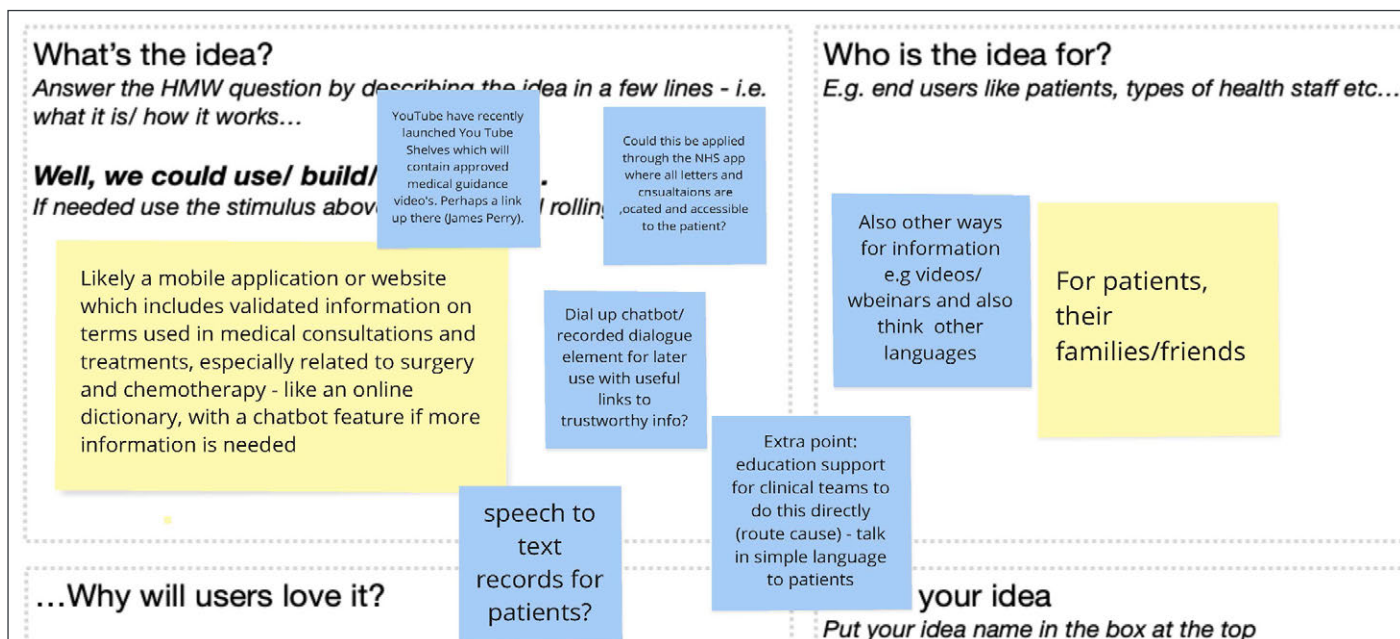
Early Detection

Specialist Care Training

_IDEA 1

WHAT DID THEY MEAN?

Helping patients understand key terms via a mobile app



Access to information is a primary challenge for patients and their families while on the CRC care pathway, making it a priority focus area for our team. We theorised how this could be enhanced through the use of a mobile application or website, which would be designed to help patients understand key terms and things to expect during medical consultations and treatments.

This idea would be particularly relevant for receiving an initial referral or diagnosis and the preparation of patients for treatments like chemotherapy or surgery itself. Experts contributing to this idea discussed how it could function as an online dictionary, combined with a chatbot feature to enhance its usability. The use of recorded dialogue may also provide an additional human touch, which may be comforting for those using the solution.

Expanding further on this idea, the team considered the potential for this solution to be integrated into the existing NHS app, which would help to streamline and centralise the user experience. The solution could also be provided via the recently unveiled Shelves feature on YouTube, which intends to make approved medical guidance widely and easily accessible. This format could also be used as

an educational feature for healthcare professionals, as a tool to ensure that they are using simple language when communicating with their patients. It is also feasible that a solution like this could support self-management of conditions in concert with remote patient monitoring technologies like CliniTouch, strengthening the existing offering.

When considering the core benefits that a solution like this would offer, the team reiterated the vital need to put humans at the heart of a technology-enabled solution. Patients and experts attending the workshops emphasised that patients do not always have the opportunity to ask for clearer information, and when they do, they are often too embarrassed.

The problem is compounded by the fact that the diagnosis and management of lower gastrointestinal (LGI) cancers can be difficult to describe without acronyms and medical jargon, adding to the need for a simple solution that would benefit both patients and professionals. Above all, patients need a method for understanding what they are being told that is simple and intuitive, which prevents them having to rely on a non-validated search engine.

_IDEA 2

MEDICA BLOCK

Blockchain enabled system to enhance data sharing and access

Not only is access to information a central challenge for those on the CRC care pathway, but the management of information is equally problematic. This is the case for data management staff, doctors, and patients alike, so our team explored the application of blockchain ledger technology as the basis for this idea. The key outcomes we want this idea to enable is the easy and safe transfer of data, and to prevent patient record information from being misplaced.

This solution would involve using a blockchain common ledger to register all patient information in a secure and decentralised way, factoring in labelling protocols, standardisation, and automation. This approach would mitigate reconciliation issues and enable everyone to access data from the same location, helping the entire system to operate more efficiently. The nature of blockchain technology would prevent there being any single points of failure, while also ensuring that information is registered 'forever'. These factors would be highly beneficial on account of the resiliency they would offer to the system utilising the solution.

By programming the solution with blockchain logic, specific information could be restricted or shared in a controlled, distributed manner. As a result, the solution could tackle a further complex information management challenge and promote interoperability across practices and clinics while seamlessly handling data privacy concerns. Users would benefit immensely from the application of a solution like this because it would reduce data integration and reconciliation issues, and offer a greater degree of control over user data.

Alexis Schizas, a Consultant Colorectal Surgeon at Guy's and St Thomas' Hospitals who was involved in the project, pointed out that a solution of this kind could enable information to be accessed anywhere, and by anyone with the right permissions to do so. To emphasise the value of this use case, Alexis provided an example of a patient of a doctor having to move between locations and the high likelihood of losing track of paper copies in the process.

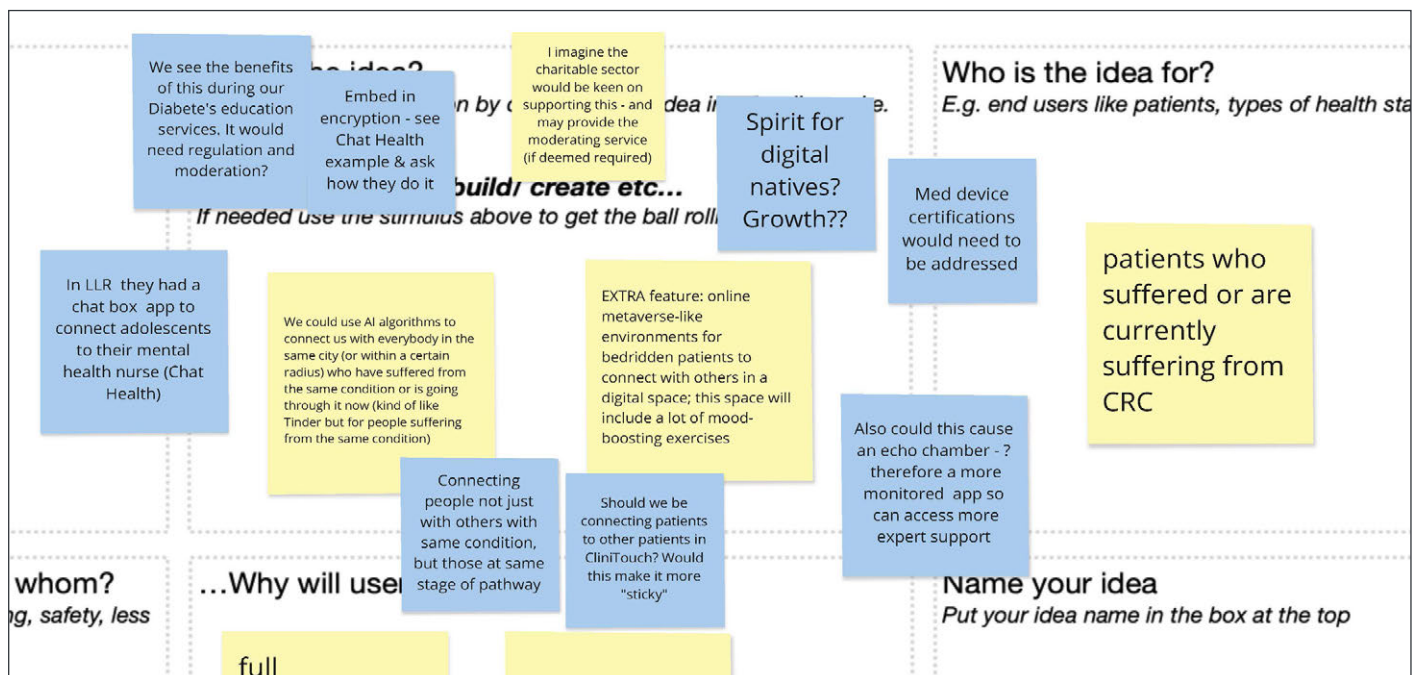
<p>What's the 'How Might We...?' question? Add the HMW or its number you've selected here...</p> <p>29. HMW ensure easy and safe transfer of data?</p> <p>32. HMW stop patient record information from 'disappearing'?</p>	<p>What's the idea? Answer the HMW question by describing the idea in a few lines - i.e. what it is/ how it works...</p> <p>Well, we could use/ build/ create etc... If needed use the stimulus above to get the ball rolling</p> <p>Using a blockchain common ledger to register all patient information in a secure and decentralized way.</p> <p>Extra point: other solutions: eg national or international interoperability standards may solve the problem with a simpler pathway</p> <p>Labelling protocols, standardisation, reducing variation, automated</p>	<p>Who is the idea for? E.g. end users like patients, types of health staff etc...Be specific</p> <p>Data management staff, doctors, patients</p>
<p>What benefits might the idea deliver & to whom? Describe the benefits e.g. access, simplicity, time-saving, safety, less effort etc</p> <p>Using a common ledger/database for data management will avoid reconciliation issues and get everyone to access data from the same data point, thus reducing access issues. Blockchain's nature makes sure no single point of failure and all data to be registered 'forever'.</p> <p>Blockchain networks are virtually unhackable thus providing a secure source of information for hosp</p> <p>Blockchain logic could be programmed to restrict/allow certain information to be shared with doctors or hospitals in a distributed way, thus increasing interoperability across practices/clinics whilst respecting possible data privacy concerns.</p> <p>Always cybercriminals can hack the unhackable.</p>	<p>Would this help with reporting fields for data for evaluation purposes?</p> <p>Users love it?</p> <p>Reduces data integration and reconciliation issues and gives more control over user data.</p>	<p>Name your idea Put your idea name in the box at the top</p> <p>Medica Block</p>

_IDEA 3

TOGETHER BETTER APP

Unlocking emotional support networks using an innovative application

Emotional Support



Emotional support is essential to the success of a clinical pathway, and particularly in the case of CRC. The 'Together Better App' concept explores the use of an application that would enable patients to easily access emotional support networks, mental health specialists, holistic experts, and fellow patients alike.

On a technical level, the team identified AI algorithms as a potential driver of this solution, which could be used to connect the people sharing similar issues, or who have relevant expertise, and who have similar interests and backgrounds within a city or region. Building on this idea, we considered the creation in the future of a metaverse-style environment that could give a degree of freedom to bedridden patients, giving them the ability to connect with other patients in a mood-boosting digital space. This approach could be used to not only connect people with the same condition, but to connect those at the same point in the pathway, or with people who are newly diagnosed with those that have been through it.

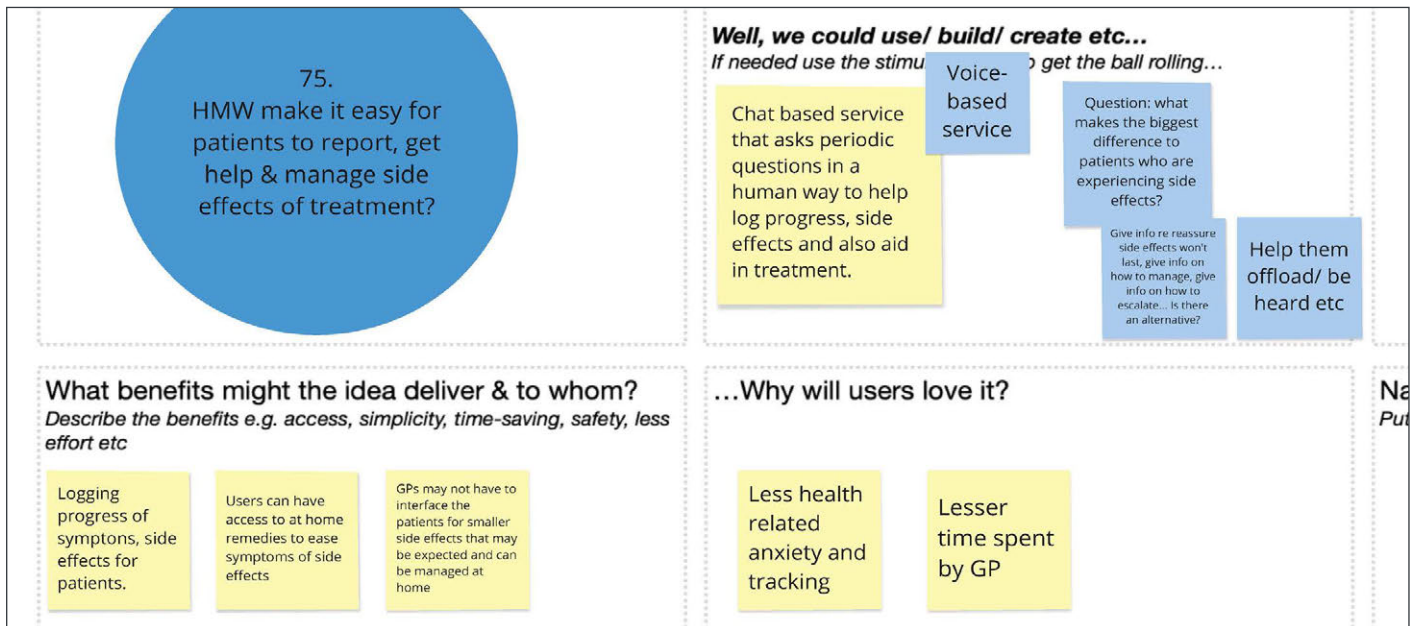
A solution based on this concept would go a long way towards reducing the isolation that can be felt by patients with serious conditions, providing a greater sense of comfort and understanding at each stage of their journey. Not only could this become a powerful emotional support network for patients, but our experts believe that the sharing of common patient experiences could also be insightful and valuable to the treatment of CRC as well.

Alexis Schizas once again validated the potential impact of this concept, stating that in his experience as a CRC surgeon, patients often ask whether they can speak to other patients. He also pointed out that some patients ask whether they can speak to fellow patients of a similar ethnic or religious background, which is a further capability an AI-driven app could facilitate.

_IDEA 4

TOGETHER BETTER APP

A voice-based solution to enhance monitoring
and access to support



For this concept, the team explored ways to help patients report and get help to manage treatment side effects and not drop out of a programme. Following contributions from patients and experts alike in our workshops, it was decided that this idea should focus on the implementation of a voice-based service. The core use case for this solution would be to reassure patients, to provide them with information on how to manage their side effects, and to explain how to escalate the issue if necessary.

In addition to making advice and support accessible to patients, this solution could be used to consistently log the progress of symptoms and side effects for patients, while reducing unnecessary interfacing for GPs. The central reasons the team believes users would love this concept is its ability to mitigate health related anxiety for patients, and because it could reduce the unnecessary manual workload for doctors.

As an extension of this idea, the team reviewed ways to ensure that patients are monitored between appointments, pinpointing automated outreach and remote monitoring as key technologies for doing so. We theorised whether an 'Alexa-style' system could be introduced to not only streamline the process and make access easier and more human, but to also make it available in many languages or for people who are visually impaired.

This idea would help reduce patient anxiety by enabling their agency – i.e. the ability to report issues – while keeping them connected in a more proactive, personable way. While empowering patients and improving their comfort, this idea also has the potential to save significant time for healthcare professionals by managing more routine data collection, while also providing a more effective way to detect signs of deterioration and the need for an intervention early on.

_IDEA 5

VR RELIEF EXPERIENCE

VR patient wellbeing technology to transform remote care

What's the 'How Might We..?' question?
 Add the HMW or its number you've selected here...

73.
 HMW make it easy for patients to access & suppliers to provide wellbeing & resilience building support e.g. help with sleep, diet etc before, during and after their treatment?

The technology driving this potential solution would also mean that patients would have access to urgent pain relief or mental health support anytime, anywhere, revolutionising the way that patients are cared for when they are outside of clinical settings. Alexis believes that a solution like this is highly important, on account of the fact that healthcare services do not focus enough on care that is needed before and after treatment.

The team wanted to devise a way to make it easier for patients to access wellbeing support in areas like sleep and diet, whether before, during or after treatment. In the case of the VR Relief Experience idea, we wanted to not only make it easier for patients to gain access to this kind of support, but also easier for suppliers to provide it.

In terms of format and technology, a potential solution based on this idea would involve third-wave CBT support being offered via VR and a mobile app to enhance support and resilience. The team brainstormed how running this service might fall under Corporate Social Responsibility (CSR), whereby the rate at which suppliers and providers access the service would be tracked via a directory. Using a 'pay-per-click' model, an annual rebate would be issued to providers and suppliers based on their usage.

What's the idea?
 Answer the HMW question by describing the idea/ how it works...

We could use/ build/ create etc...
 Use the stimulus above to get the ball rolling...

...Why will users love it?

Could we take a CSR route with rebate to third sector providers/suppliers based on how they/when they access these services via a directory that we build? Promise to patients that we do this which would motivate people to access it more often?

How we risk and mitigate: Alexis back to running the project/ create message

From a clinician perspective do they really care about these 'softer' elements? Demand to come from patients

Integrated/ added value service

Build in a sleep & cancer service? Alex

Sleep education, hygiene & therapy?

Third-wave CBT through VR or mobile app to build resilience and support pain management

Pain relief, greater resilience, psychological acceptance

_IDEA 6

EXERCISE TREATMENT PLAN

Harnessing virtual delivery methods to drive effective
exercise therapies

<p>1. What's the 'How Might We...?' question <i>Add the HMW number or copy paste the HMW...</i></p> <p>74. HMW might we help patients engage with exercise and/or physiotherapy before, during & after treatment?</p> <p>74. HMW might we help patients engage with exercise and/or physiotherapy during & after treatment?</p> <p>Do we need to look at virtual reality as a function within our offer generally</p>	<p>2. What's the idea? <i>Answer the HMW question by describing the idea in a few lines - i.e. what it is and how it works...</i></p> <p>Make exercise a core component of the journey right from diagnosis, highlighting the benefits of being healthy before treatment starts, how it helps during treatment and how crucial it is for good recovery.</p> <p>Recommend The Bowel Cancer Recovery Toolkit by Sarah Russell and the Cancer Exercise app in Appstore</p> <p>Get a PT involved who could evaluate each person individually and map out a personalised plan.</p> <p>(logically links in with number 73)</p>	<p>3. Who is the idea for? <i>E.g. patients, carers, healthcare staff etc...</i></p> <p>Related to the prehab support can also help with reprioritising waiting lists etc</p> <p>Bake into every pathway question sets.. Maybe bring a social part to it?</p> <p>Virtual delivery</p>
<p>4. What benefits would the idea bring & to whom? <i>Describe the benefits e.g. access, simplicity, time-saving, safety, less effort etc</i></p> <p>Exercise came out as a good contributor towards reducing recurrence with some studies showing that keeping active after diagnosis can reduce the risk of colon cancer recurrence by 20 – 30%.</p> <p>Benefits NHS and patients</p> <p>Using existing resources, lower introduction cost and could be piloted / implemented very quickly.</p>	<p>5. ...Why will users love it?</p> <p>The likely contribution to reducing recurrence will reduce burden to NHS to enable them to treat new patients.</p>	<p>6. Name your idea <i>Put your idea name in the box at the top</i></p> <p>Well, its really just recommending stuff that already exists</p>

This idea was built around the need to encourage patients to engage in exercise and physiotherapy before, during, and after treatment. The team assessed ways to use virtual delivery methods to ensure that exercise is a core component of the journey from diagnosis to recovery. While virtual reality and other technologies would be used to direct and support patients through exercise sessions, a personal trainer would be involved to evaluate each person and map out bespoke plans.

When exploring this concept, the team referenced The Bowel Cancer Recovery Toolkit by Sarah Russell, as well as a cancer exercise app that can be located within the App Store. Taking inspiration from these models, our idea would be designed in such a way as to be more immersive and interactive, while being easy and quick to implement by leveraging existing resources.

To reiterate the importance of this concept, studies have revealed that consistent and effective exercise after diagnosis can reduce the risk of recurrence by as much as 20 to 30%. It is for this reason that we believe users will want to engage with the solution, as it empowers patients to play a part in recovery and mitigation. This concept would also simultaneously reduce pressure on the NHS by helping to significantly reduce recurrence, enabling specialists to allocate more time to other pressing issues.

_IDEA 7

BE YOUR OWN NURSE

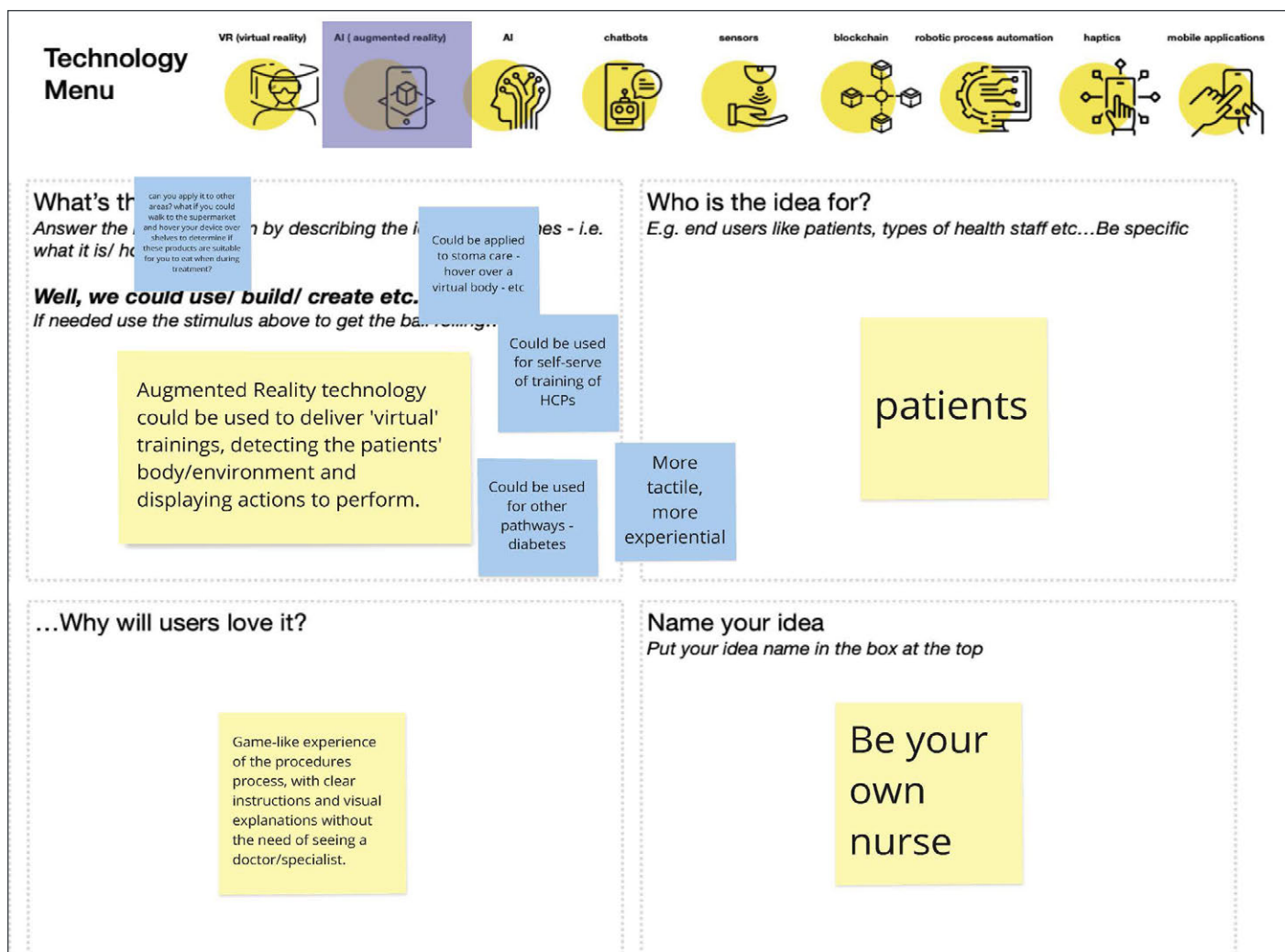
Empowering patients to self-serve using
an Augmented Reality solution

Improving workflows with innovation will be essential to transforming the CRC care pathway, so the team explored ways for patients to self-serve more effectively, particularly in relation to routine procedures like physiotherapy. In this instance, the group assessed the potential effectiveness of augmented and virtual reality (AR and VR) to drive this solution, which could be used to detect the patient's movements and environment while delivering virtual training sessions.

While this idea may offer an effective solution that would encourage patients on the CRC care pathway to engage in crucial exercises,

the methodology could also be used for stoma care, and for completely different pathways like diabetes. Using this solution would empower patients with direct and reliable feedback, while also offering them a visual understanding of the procedure and their progress.

To further incentivise patients to use the solution and to enhance the overall experience, gamification could be leveraged to make instructions easy to follow and engaging. Other primary benefits of this solution include its ability to be used as a training tool for new and existing healthcare professionals, and the total amount of GP and specialist time that it can save.

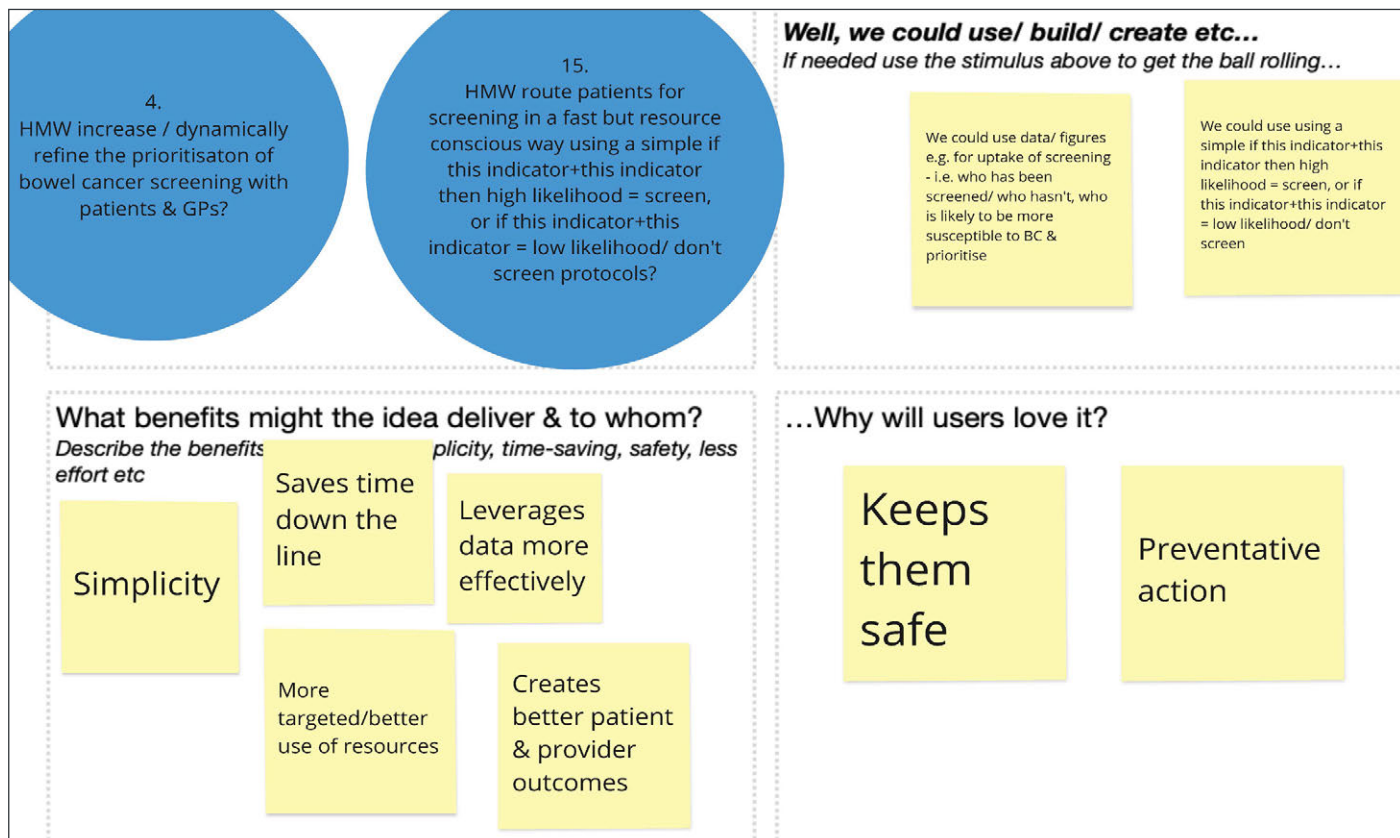


_IDEA 8

DATA-DRIVEN SCREENING

Leveraging data analysis to speed up screening and early detection

Early Detection



Early detection is a factor of the utmost importance when it comes to treating bowel cancer patients, and has a great impact on their journey along the CRC care pathway. The experts and patients involved in the sessions were determined to assess how the prioritisation of bowel cancer screening could be dynamically refined and improved overall. It is important that patients are screened in a rapid but resource-conscious way, which would require a method of quickly assessing specific indicators.

Data is central in this solution, and the group decided that figures relating to uptake of screening could be assessed to determine who would be most susceptible to missing early detection. A simple process of assessing

whether a person has been screened already or not, and then comparing the outcome with other factors such as age and conditions like obesity, would present a quick and effective prioritisation scheme.

Simplicity is one of the central benefits of this potentially highly effective solution, particularly in terms of how much time it could save for patients further down the line. The idea would also equip healthcare providers to leverage data much more effectively, and to use resources in a more efficient, targeted manner. In summary, this straightforward solution would significantly enhance both patient and provider outcomes.

_IDEA 9

TOTAL AND HOLISTIC RISK SCORE

Reducing colonoscopy waiting times with a dynamic risk stratification tool

Given the time-critical nature of CRC diagnosis and treatment, waiting times and long delays are an unparalleled problem that must be addressed. During the workshops, the group set out to identify ways in which colonoscopy waiting lists in secondary care could be minimised.

An idea was created that involves the reviewing of all referrals using a risk stratification tool, supplemented with additional medical information and the results from early tests. A further test would then also be implemented to confirm a patient's risk level, ensuring that the most critical cases are accelerated accordingly through the CRC care pathway.

By using this approach to filter patients, high risk cases would be treated earlier and given the appropriate tests. In addition to providing urgent care to those that need it most, this system would also provide clarity and relief to lower risk cases, empowering patients and reducing anxiety. Clinicians would also benefit from this solution as they would be able to channel their energy and resources into dealing with the most urgent cases.

A solution with these capabilities would have a powerful impact on patient and clinician confidence alike, as it would ensure that each and every patient was at the correct stage of their individual clinical journeys. It would also provide the necessary reassurance that all underlying factors had been considered, validating the respective waiting times for each patient.

What's the idea?

Answer the HMW question by describing the idea in a few lines - i.e. what it is/ how it works...

Well, we could use/ build/ create etc...

If needed use the stimulus above to get the ball rolling...

Review all referrals with benefits of a risk stratification tool and additional medical information or early tests

Do a further test, get patient to do a survey, dismiss of list if not as urgent, risk lower etc

_IDEA 10

PREHAB AND DIGITAL PATHWAY SUPPORT

Tech-driven monitoring and reprioritisation for
end-to-end CRC support

<p>What's the 'How Might We...?' question? Add the HMW or its number you've selected here...</p> <p>74. HMW might we help patients engage with exercise and/or physiotherapy before, during & after treatment?</p> <p>11. HMW improve pre-assessment/ diagnosis support?</p>	<p>What's the idea? Answer the HMW question by describing the idea in a few lines - i.e. what it is/ how it works...</p> <p>Well, we could use/ build/ create etc... If needed use the stimulus above to get the ball rolling...</p> <p>Prehabilitation programme ie allow for patients to be monitored and supported throughout the pathway - with information from referral to diagnosis to pre surgery to rehabilitation post surgery - sequential information and well being support. In addition by monitoring progress this could also flag up re-prioritisation for patients on waiting list</p>	<p>Who is the idea for? E.g. end users like patients, types of health staff etc...Be specific</p> <p>Patients</p>
<p>What benefits might the idea deliver & to whom? Describe the benefits e.g. access, simplicity, time-saving, safety, less effort etc</p> <p>More engaged patients Overview of patient progress by accountable clinician</p>	<p>...W</p> <p>Patients will feel connected and not lost in system Better prepared for surgery</p>	<p>Name your idea Put your idea name in the box at the top</p> <p>Prehab and digital pathway support</p>

As our experts and patients continued to explore solutions to delays and waiting times on the CRC pathway, the team developed a further idea, this time focusing on the improvement of pre-assessment and diagnosis support. The idea can be described as a prehabilitation programme that would enable patients to be monitored and supported in an innovative way throughout their CRC journey.

These benefits would ultimately result in more engaged patients who are more comfortable and better prepared for surgeries and other treatments, which in turn supports the work and capacity of stretched healthcare professionals. It is also worth reiterating the immense improvement in patient mental health that this form of dynamic monitoring and subsequent reprioritisation would afford.

The solution would provide support from diagnosis through to post-surgery rehabilitation and eventually to recovery, helping them to never feel lost in the system, and to be well prepared for vital surgeries. By monitoring patient progress using a tech-driven approach, time would not only be saved for clinicians directly, but the monitoring could facilitate dynamic reprioritisation for patients on the waiting list to ensure that accuracy is maintained. This would also further empower and reassure patients, preventing them from the concern that their condition had worsened without being accelerated towards treatment and support.

_IDEA 11

RECURRENCE RISK REMOTE MONITORING

Deploying ambient sensors for tailored monitoring to
reduce patient isolation

Preventing recurrence in the post-treatment phase is made less efficient by the manual nature of the existing process, requiring in-person check-ups that are infrequent for patients and time consuming for clinicians. To solve this, the team asked themselves how the process could be de-manualised to improve the patient follow-up system.

The result was the formulation of an idea for a solution that would use tailored remote monitoring via an app, in combination with ambient sensors. The idea is not to replace traditional follow-up procedures with this solution, but to supplement the post-surgery treatment.

Using the app and the ambient sensors it would be connected to, patients could self-report on things like pelvic pain, weight changes, appetite, energy levels, or bowel activity. This would alert clinicians to the need to prioritise or accelerate follow-up checks for patients showing signs of early recurrence, empowering professionals to intervene more proactively. In addition to streamlining and enhancing the visibility and decision-making of HCPs, it would also make patients feel reassured and cared for from afar, preventing them from feeling isolated between in-person check-ups.

<p>What's the 'How Might We..?' question? <i>Add the HMW or its number you've selected here...</i></p> <p>13. HMW de-manualise & improve the patient follow-up system?</p>	<p>What's the idea? <i>Answer the HMW question by describing the idea in a few lines - i.e. what it is/ how it works...</i></p> <p>Well, we could use/ build/ create etc... <i>If needed use the stimulus above to get the ball rolling...</i></p> <p>Use tailored remote monitoring based on risk of recurrence. Likely via app</p>
---	--

_IDEA 12

AUTOMATED EMAILS AND TEXT MESSAGES

Autonomous communication to promote patient self-care
and provide guidance

<p>What's the 'How Might We...' question? Add the HMW or its number you've selected here...</p> <p>14. HMW make waiting less stressful/ more mentally healthy, more informative & useful for patients?</p>	<p>What's the idea? Answer the HMW question by describing the idea in a few lines - i.e. what it is/ how it works...</p> <p>Well, we could use/ build/ create etc... If needed use the stimulus above to get the ball rolling...</p> <p>Series of automated emails / text messages "counting down" to procedure but with "what you can do" tips in meantime</p>	<p>Who is the idea for? E.g. end users like patients, types of health staff etc...Be specific</p> <p>Patients</p>
<p>What benefits might the idea deliver & to whom? Describe the benefits e.g. access, simplicity, time-saving, safety, less effort etc</p> <p>Patients will feel more involved in the interim, and "pre-hab" messages / signposts to support can be drip-fed in</p> <p>Encourages self-care and prehabilitation</p>	<p>...Why will users love it?</p> <p>Will fill the "empty space" in between appointment being set and treatment date occurring</p> <p>Proactive - may help with sense of powerlessness</p>	<p>Name your idea Put your idea name in the box at the top</p>

By leveraging existing communication channels like text messages and emails, the team identified an opportunity to make waiting less stressful, more mentally healthy, and more informative for patients. The idea is centred around a series of automated messages that work like a countdown to upcoming CRC care procedures, providing useful tips on how to prepare in the meantime. These packets of information could also be shared in a format that enables patients to interact with it, further enhancing the experience and empowering patients.

The immediate benefit of this idea is that it will support patients to feel more involved during the interim phases, with 'pre-hab' messages signposting important factors that encourage self-care. In addition to enhancing the wellbeing of CRC patients, clinicians and healthcare providers will also benefit from not needing to answer or pre-empt as many queries, saving them valuable care providing time.

Above all, a solution based on this concept would fill the empty space in between appointment dates, which patients involved in the workshops cited as being very difficult. Experts involved in the process also identified the potential for some of the ideas we have mentioned to operate in concert, via a system that would be highly autonomous, accessible, and empowering for both patients and healthcare professionals alike.

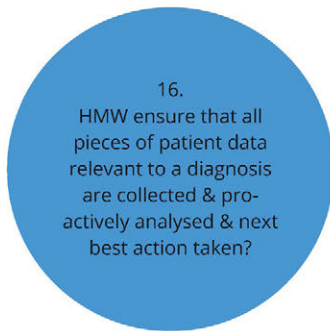
_IDEA 13

AI IN PATIENT ASSESSMENT

AI-enabled data processing service to support clinician
decision-making and care strategy

What's the 'How Might We..?' question?

Add the HMW or its number you've selected here...



What's the idea?

Answer the HMW question by describing the idea in a few lines - i.e. what it is/ how it works...

Well, we could use/ build/ create etc...

If needed use the stimulus above to get the ball rolling...

Building on use of cancer clinical decision support tools, We could use forms of AI to support clinicians to identify and review relevant patient information - this could flag up any concerning symptoms and also help clinicians to identify tests the patient requires before an urgent referral is sent

What benefits might the idea deliver & to whom?

Describe the benefits e.g. access, simplicity, time-saving, safety, less effort etc

1. Primary care clinicians - support ability to diagnose patients
2. Secondary care clinicians - could support an improvement in cancer conversion rate

...Why will users love it?

Builds on recommended practice to use CDS tools and already exists

Improving the effectiveness of referrals has the potential to increase the efficiency and effectiveness of the entire pathway, making it another priority during our agile workshops. To formulate an idea, the team set about generating concepts designed to ensure that all elements of patient data that are relevant to a diagnosis are collected and proactively analysed to inform next steps.

The experts and patients in the session came up with an idea for a clinical decision support tool that would utilise Artificial Intelligence (AI) - i.e. computer algorithms - to review patient information more effectively, flagging any concerning symptoms in an innovative way. This would empower patients while also making the

job of clinicians easier by informing them of the various tests the patient requires before urgent referral is sent. A further benefit this solution would enable for healthcare professionals is the ability to easily discern which transactions would be appropriate and necessary.

This solution would equip primary care clinicians with a greater ability to diagnose patients, while it would enable secondary care clinicians to improve the cancer conversion rate. Inexperienced primary care professionals would also benefit from the solution because of the way it supports the review of patients. This would be relevant for GPs, practice nurses, and even pharmacists.

_IDEA 14

ACTIVE WAITING LIST MANAGEMENT

Flexible data-driven monitoring to manage waiting lists
with real-time precision

Effective Referrals

The patients involved in the process identified the waiting time between the first GP appointment and the first specialist appointment as a key pain point. The team theorised that this could be enabled by incorporating elements of ideas 8, 10 and 13, ensuring that the solution is data-driven, based on key risk factors, and incorporates effective prehabilitation. The use of remote monitoring and ambient sensors, as referenced in idea 11, could also be at the core of this solution.

The concept would create a system for patients when they are in between appointments and other pathway phases that don't currently exist, significantly empowering the patient. To ensure that the solution was capable of active waiting list management, it would need to be automated to enhance responsiveness and flexibility. Clinicians would also benefit directly from this solution as it would alleviate a huge amount of admin, which currently consumes an immense amount of time for GPs and nurses in particular.

<p>What's the 'How Might We...?' question? Add the HMW or its number to the box selected here...</p> <p>18. HMW reduce the wait between GP appointment & first specialist appointment?</p>	<p>What's the idea? Answer the HMW question by describing the idea in a few lines - i.e. what it is/ how it works...</p> <p>Well, we could use/ build/ create etc... If needed use this box to get the ball rolling...</p> <p>Active management of waiting with option to reprioritisation</p>	<p>Who is the idea for? E.g. end users like patients, types of health staff etc...Be specific</p> <p>Clinicians</p>
---	--	--

_IDEA 15

GETTING IT RIGHT

Rapid early assessment of co-morbidities to streamline diagnosis
and treatment planning

<p>1. What's the 'How Might We..?' question Add the HMW number or copy paste the HMW...</p> <p>21. HMW make it easier/ faster for GPs/ specialists to identify patients with comorbidities that might cause a delay in the delivery of a diagnosis or treatment?</p>	<p>2. What's the idea? Answer the HMW question by describing the idea in a few lines - i.e. what it is and how it works...</p> <p>Well, we could... ensure GP's consider the patients comorbidities that may influence their ability to attend for investigations, such as significant mental health issues, English not being the first language so not always understanding the process. Behaviour of non compliance in the past. Frailty, dementia, poor mobility, other significant illnesses That the patient understands the 2WW pathway, and the importance of attending/ being available. Use the stimulus to get the ball rolling...</p> <p>Feedback to GP re referrals, esp from STT service, good and not so good [Even if 'straight to test' we don't know they don't speak English etc GP should say need to meet face-to-face (can be done video consults with interpreter within 24 hours/ get failed appointments/ not fit - ringfenced slots for endoscopies & 31/62/31 day pathway)]</p>	<p>3. Who is the idea for? For everyone as if this is not done at the outset of the patient's journey, it causes delay, non attendance at appointments, potential loss to the system/ follow up. It would reduce wasted appointment slots, therefore cost saving to healthcare Meets the metrics for cancer pathway, prevents patients being on the list in excess of the expected days, which is mainly due to lack of coordination, non attendance et. E.g. patients, carers, healthcare staff etc...</p>
<p>4. What benefits would the idea bring & to whom? Describe the benefits e.g. access, simplicity, time-saving, safety, less effort etc Reduces delays in the patients pathway, quicker time to diagnosis, completion of process This would reduce anxiety Commissioners would love the reduction in wasted appointments Cancer Alliances; would meet the pathway metrics</p>	<p>5. ...Why will users love it? Reduces frustration, but better for patients Secondary care would feel that GP's give all the info and think about the process when referring in via the 2WW pathway</p>	<p>6. Name your idea Put your idea name in the box at the top</p>

Comorbidities can cause significant delays to diagnosis and treatment, so it is essential that they are identified swiftly as part of an effective referral process. The team highlighted the vital importance of assessing comorbidities at the very start of a patient's journey, particularly those that may prevent them from attending investigations. Relevant examples in this context could include mental health issues or obesity.

Using a solution with these capabilities, clinicians would be better equipped to achieve improved cancer pathway metrics, and patients would be considerably less likely to wait longer than expected for vital treatment. Co-ordination of the CRC care pathway and many others would become more effective, and patient anxiety would be mitigated across the board.

This idea focuses on the need for GPs to prioritise the assessment of comorbidities early so as to improve the efficiency of the whole CRC care pathway. Putting this solution into action would reduce delays and non-attendance at appointments, which would optimise the use of specialist time and precious resources. The solution would reduce frustration in general, and it would improve the secondary care for patients immensely.

_IDEA 16

CLOUD-BASED COLLABORATION

Creating a common knowledge base to dismantle siloes,
reduce clinician admin and resolve issues faster

<p>38. HMW improve/ standardise/ speed up communications between all medical professionals involved in a patients care?</p>	<p>Well, we could use/ build/ create etc... <i>If needed use the stimulus above to get the ball rolling...</i></p> <p>Not a fully formed-idea, but increasing usage of (or creating an NHS proprietary version of) modern cloud-based task-driven communication/collaboration/automation tools like Salesforce, Slack, Trello, Jira, Zapier, and of course Miro</p>
<p>What benefits might the idea deliver & to whom? <i>Describe the benefits e.g. access, simplicity, time-saving, safety, less port etc</i></p> <p>Speed</p>	<p>...Why will users love it?</p> <p>More joined-up communication</p> <p>Can "collaborate" on certain tasks regarding a patient, just like on a Trello card or Jira ticket</p>

For any clinical pathway to function well, effective communication is of integral importance. This is particularly true of the CRC care pathway due to its complex nature, so the team dedicated workshop time to address this challenge and generate ideas that could improve CRC care communication. Speed and simplicity were key factors at the heart of the team's ideation, and these outcomes steered their thinking.

The team developed a concept that would leverage technology to create a common knowledge base to streamline and guide the patient journey, in combination with a patient-facing interface. The ultimate goal of the solution would be to provide clarity and transparency to the patient journey, and provide an easy way to interact with the clinicians involved in the process.

The experts involved in the ideation process said that this concept could be a cloud-based, task-driven form of communication, functioning like Salesforce, Slack, Trello or Jira. For collaborative problem-solving activities, the platform could also include features comparable to those offered by MIRO.

Key benefits brought about by this concept would include enhanced speed, more joined-up communication, and more dynamic options for clinician collaboration. While patients would benefit as a result of a more effective communication solution, healthcare professionals such as GPs, physiotherapists, and multidisciplinary healthcare teams would benefit directly. This is due to the fact that it would dismantle existing siloes, alleviate many arduous admin tasks, and help to resolve problems more rapidly.

_IDEA 17

DISCREET SPONSOR APP

A buddy system delivered via instant messaging to
connect current and former patients

Continuing on the topic of CRC care pathway communication, the team turned their attention to a communication solution with a strong focus on directly improving the experience of patients. We set out to identify a discreet and simple way for patients to both monitor and better understand their symptoms. The concept would also need to enable patients to communicate their symptoms to HCPs and family members more seamlessly, in a way that avoids embarrassment and discomfort.

As part of this concept, we simultaneously assessed how patients could reach emotional support networks more easily, such as mental health specialists, holistic experts, and fellow patients going through the same process. The team came up with the idea of using a discreet sponsor or buddy system that would be delivered via a simple application like WhatsApp.

This idea would work by aligning patients with a designated 'buddy', a person who has already been through the treatment and can help to support and motivate the current patient. Buddies would have to complete a form of training, and they would be able to either remain anonymous or use a pseudonym if preferable. This could be especially effective for helping patients to manage chemotherapy, the stage of cancer at diagnosis, and other challenging moments on the pathway.

What's the 'How Might We..?' question?

Add the HMW or its number you've selected here...

41.

HMW create a discreet/simple way for patients to understand & monitor symptoms, & communicate them to HCPs & family members so they feel less embarrassed & can be better supported?

44.

HMW help patients reach emotional support networks (incl. mental health specialists, holistic experts and fellow patients) in all stages of the cancer pathway?

What benefits might the idea deliver & to whom?

Describe the benefits e.g. access, simplicity, time-saving, safety, less effort etc

Patients get designated a "Buddy" who has been through treatment, (anonymous / pseudonym potentially) to help motivate & support.

Buddies to have completed training.

People who have experienced similar things - ie chemo, stage of cancer at diagnosis, etc, could be paired with each other.

Healthcare professionals to oversee multiple buddies to deal with situations that may arise.

_IDEA 18

VIDEObLOG

Building a comprehensive visual playbook to support patients
and carers along the CRC care journey

...Why will users love it?

1. way to connect to other patients in a passive way (dont need to have an active conversation given the sensitivity of the topic)

2. facilitated way to talk about a topic that may feel embarrassing for patient and carer

Creating a synergy of understanding between HCPs, patients, and their carers is critical, and the team identified that education is at the heart of the solution. The experts and patients in our sessions combined their experience to theorise a simple way for patients, family members and carers to be educated on symptoms and patient needs more effectively. The goal of this was to come up with a concept that would make patients feel that their needs are fully understood and supported.

This idea involves the creation of a comprehensive visual playbook for patients and carers, which would serve as a consolidated means of communications needs, feelings, and frustrations. The core of this model would involve the sharing of stories and experiences of other patients and carers who have been through a CRC care journey.

Users would love to use a solution like this because of the passive way of communicating with other patients that it offers. Video stories and cases would help to provide a sense of comfort and insight without having to facilitate active conversations, which could be difficult on account of the topic's sensitive nature.

_IDEA 19

BUDDY SCHEME

A technology-driven solution that connects current
and previous patients

<p>What's the 'How Might We..?' question? Add the HMW or its number you've selected here...</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid blue; border-radius: 50%; padding: 10px; background-color: #007bff; color: white; text-align: center;"> <p>44. HMW help patients reach emotional support networks (incl. mental health specialists, holistic experts and fellow patients) in all stages of the cancer pathway?</p> </div> <div style="border: 1px solid lightblue; border-radius: 50%; padding: 10px; background-color: #add8e6; color: black; text-align: center;"> <p>46. HMW improve the support system for families & friends?</p> </div> </div>	<p>What's the idea? Answer the HMW question by describing the idea in a few lines - i.e. what it is/ how it works...</p> <p>Well, we could use/ build/ create etc... If needed use the stimulus above to get the ball rolling...</p> <div style="border: 1px solid black; padding: 5px; background-color: #fff9c4;"> <p>A 'mentor' scheme could be setup where previous patients or patient families could be linked up with current patients and families to provide guidance and support on the whole experience and process.</p> </div>	<p>Who is the idea for? E.g. end users like patients, types of health staff etc...Be specific</p> <div style="border: 1px solid black; padding: 5px; background-color: #fff9c4;"> <p>Patients, families, previous patients</p> </div>
<p>What benefits might the idea deliver & to whom? Describe the benefits e.g. access, simplicity, time-saving, safety, less effort etc</p> <div style="border: 1px solid black; padding: 5px; background-color: #fff9c4;"> <p>Patients and families could get an insight and advice from the only people that understand them (previous patients and their families) both from a logistics point of view (what to get, from where, what are the best options, etc) as well as from an emotional point of view (preparation for hardest stages, visit planning, etc)</p> </div>	<p>...Why will users love it?</p> <div style="border: 1px solid black; padding: 5px; background-color: #fff9c4;"> <p>Patients & families will get a view from the only people that really understand what they are passing through, and previous patients and families will get to reuse all the information and knowledge they collected through the process instead of simply forgetting it without use.</p> </div>	<p>Name your idea Put your idea name in the box at the top</p> <div style="border: 1px solid black; padding: 5px; background-color: #fff9c4; text-align: center;"> <p>Buddy scheme</p> </div>

Providing adequate emotional support for the patients navigating this extremely challenging journey is critical to the success of the pathway from the patient's perspective. Leveraging the insights from the patients participating in the ideation process, we explored a range of ways for patients and carers to access support, and to improve the overall support system itself.

Importantly, this approach ensures that patients and their families are interacting with people who truly understand their position on both practical and emotional levels. The reuse of previous information is also extremely valuable, and it will indirectly benefit healthcare professionals by helping to better prepare current patients for treatment and surgery.

The Buddy Scheme would be a mentor programme that would be established to connect previous patients and their families with current patients, providing guidance on the whole experience and process. This would be designed to enable interaction between former and current patients to provide emotional support, but also to share useful information and tips that enhanced their journeys. This model would be particularly useful in preparation for the hardest stages.

_IDEA 20

CONNECTED CARE

Implementing AI to standardise referrals and form-filling to save clinician capacity and cost

Standardisation is critical when innovating and enhancing a complex system, particularly data needs to be harnessed and processes need to be simplified. With this challenge in mind, we explored ideas that would enable protocols to be introduced and certain processes to be simplified, such as form-filling, referrals, and e-consent. Above all, the team wanted to come up with a concept that would reduce variation and prevent data being missed.

The team developed an idea that would put artificial intelligence (AI) at the core of the solution, handling the standardisation of referrals, form-filling, and routing. In concert

with this AI tool, a set of standard protocols and labels could be created that would help healthcare professionals to mitigate variation. This would also help with identifying the right approach first time, subsequently enhancing patient outcomes overall.

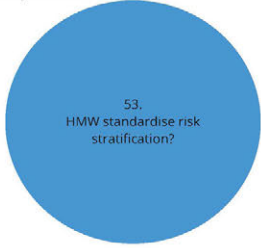
In addition to the benefits already cited, the solution would also enhance patient routing, whether going from screening to treatment, or being dismissed from a specific list. The concept would increase database and waiting list accuracy, while also saving considerable time and cost.

<p>What's the 'How Might We..?' question? Add the HMW or its number you've selected here...</p> <div style="border: 1px solid black; border-radius: 50%; width: 100px; height: 100px; display: flex; align-items: center; justify-content: center; margin: 20px auto;"> <p>52. HMW intro protocols & standardise form-filling e.g. referrals, e-consent etc forms so data isn't missed & variation is reduced?</p> </div>	<p>What's the idea? Answer the HMW question by describing the idea in a few lines - i.e. what it is/ how it works...</p> <p>Well, we could use/ build/ create etc... If needed use the stimulus above to get the ball rolling...</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>Create a set of standard protocols/ labels that staff & an AI use to standardise referral form filling & routing</p> </div>	<p>Who is the idea for? E.g. end users like patients, types of health staff etc...Be specific</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>a) how can we introduce the right routing 'protocols' to get a 'right first time approach' to form filling and do it in a way where data is not missed so reduce variation/ waiting time? Also do data entry does not need to be duplicated?</p> </div>
<p>What benefits might the idea deliver & to whom? Describe the benefits e.g. access, simplicity, time-saving, safety, less effort etc</p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; margin: 5px;">Simplifies/ reduces variation</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">Right first time aiding outcomes</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">Correct routing (e.g. to next stage of screening or treatment process or dismiss from list)</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">Save time & money</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">Get people who need treatment prioritised</div> <div style="border: 1px solid black; padding: 5px; margin: 5px;">Increase accuracy of lists</div> </div>	<p>...Why will users love it?</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>(If a patient) saves on unnecessary waiting/ not knowing/ uncertainty</p> </div>	<p>Name your idea Put your idea name in the box at the top</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%; text-align: center;"> <p>Connected Care</p> </div>

_IDEA 21

EARLY ACTION

Automating data handling and analysis to evaluate patient risk levels with greater accuracy

<p>What's the 'How Might We..?' question? Add the HMW or its number you've selected here...</p> <div style="text-align: center;">  <p>53. HMW standardise risk stratification?</p> </div>	<p>What's the idea? Answer the HMW question by describing the idea in a few lines - i.e. what it is/ how it works...</p> <p>Well, we could use/ build/ create etc... If needed use the stimulus above to get the ball rolling...</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p><small>AI to identify what data is missing/as well analyse large volumes of data in some patients notes to help evaluate risk. Also systems that allow you to get missing information to decide next step of pathway. Needs to have been agreed by involved on pathway and transparent to patient, so they can understand why risk they have been assigned.</small></p> </div>	<p>Who is the idea for? E.g. end users like patients, types of health staff etc...Be specific</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%; background-color: #fff9c4;"> <p>Patients and carers</p> </div>
---	--	--

This idea was influenced by the need to improve the standardisation of risk stratification, which ultimately would result in patients being routed and triaged more effectively. AI technology would be used to analyse and determine where crucial data gaps are, while also reviewing large volumes of patient notes to better evaluate risk levels in each case. This more granular, automated approach would provide healthcare professionals with more information to work with when determining the appropriate next steps.

Transparency would be central to the success of this idea, as insight into the process would help patients to understand their level of risk, their position in waiting lists, and why specific treatments are necessary for them. This method could also be used to connect proactive diagnosis and colonoscopy lists with waiting list management, increasing the efficacy of the overall pathway.

Appropriate and accurate risk stratification empowers patients, provides peace of mind, and helps healthcare professionals to operate in a data-driven way. Using AI to leverage data would not only help to bring about greater accuracy on the CRC care pathway, but it would also mitigate complaints, communication issues and lacking preparedness among patients.

_IDEA 22

PRE-OP

An online pre-assessment solution that would prevent patients needing to repeatedly fill in forms

<p>1. What's the 'How Might We..?' question <i>Add the HMW number or copy paste the HMW...</i></p> <p>65. HMW make it simple/ easy/ quicker for patients to fill out pre-op assessment forms</p> <p>65. HMW make it simple/ easy/ quicker for patients to fill out e.g. pre-op assessment forms?</p>	<p>2. What's the idea? <i>Answer the HMW question by describing the idea in a few lines - i.e. what it is and how it works...</i></p> <p>Conduct an online pre-op assessment that stays with the patients record and is accessible / editable to patient and health care professionals</p> <p>Unfortunately for a national roll out this would need IT engagement to see if an off the shelf app could meet requirements or if a bespoke solution is required.</p> <p>Maybe do a mobile app as a pilot ????</p> <p>Well, we could... <i>Use the stimulus to get the ball rolling...</i></p>	<p>3. Who is the idea for? <i>E.g. patients, carers, healthcare staff etc...</i></p> <p>NHS / patients(?)</p>
<p>4. What benefits would the idea bring & to whom? <i>Describe the benefits e.g. access, simplicity, time-saving, safety, less effort etc</i></p> <p>NHS – standardised data capture as I'm sure each health authority has their own; identify earlier any issues with the patient so operation slots can be freed up and re-filled, and if other appointments need to be made for the patient before surgery</p>	<p>5. ...Why will users love it?</p> <p>As a patient got a bit frustrated answering the same questions multiple times.</p> <p>Save time by removing duplication</p>	<p>6. Name your idea <i>Put your idea name in the box at the top</i></p> <p>PRE-OP</p>

The act of filling in forms was also highlighted by patients in our sessions as a difficult and sometimes unpleasant process, particularly in the case of pre-op assessment forms. Using the pre-op form example, this has to be done at an extremely challenging time for the patient and their family, and this can make it a considerably more complicated and unpleasant task.

For an idea that would be a solution to this pain point, the team considered the use of an online pre-assessment that would stay with the patient's records and could be accessed and edited by the patient and the HCPs involved in the journey. While a national roll-out with significant IT engagement may not be feasible in the short-term, but an off-the-shelf application could be leveraged with similarly beneficial outcomes. This approach could be carried out using a mobile app as an initial pilot project.

A patient involved in the workshop recalled having had to answer the same questions numerous times, which significantly worsened the quality of the experience. Because of this, a solution based on this concept should also be equipped to prevent duplication throughout the pathway. Carrying out this process with patients as early as possible in the journey would also be beneficial, because it could be used to prevent duplication later on, but also because the data could be used to identify other issues earlier and prioritise patients accordingly.

_IDEA 23

QR MASTER

Using QR codes and an app-based solution to streamline the pathway for patients and professionals

What benefits might the idea deliver & to whom?

Describe the benefits e.g. access, simplicity, time-saving, safety, less effort etc

easy
access

time-
saving

...Why will users love it?

no need to
download
yet another
app

A significant amount of specialist care takes place throughout the CRC care pathway, and the individuals responsible for it need to be less weighed down by admin tasks that add little value. To reduce time-consuming admin for specialist staff, the team came up with the idea of attributing a QR code to every hospital bed that would link to a mobile app.

Using the QR code and the associated app, patients could be directed to helpful services and to fill out important medical documentation.

This would enable specialist staff to spend more time administering the care that they have been specially trained to provide, enhancing the overall CRC care journey for both patients and healthcare professionals alike. The QR code could also pull information from existing patient records, helping to further streamline the process for patients and staff.

_IDEA 24

DIRECT PATIENT ASSESSMENT

A pre-referral test driven by AI to enhance precision
and resource efficiency

4. What benefits would the idea bring & to whom?

*Benefit patients allowing access to tests and referrals without having to take time out to see GP
Reduce GP appointments*

5. ...Why will users love it?

Access healthcare easier and correct patients sent for further investigations

Many experts emphasised the importance of enabling early testing for CRC, especially because early interventions help deliver far better outcomes and survival rates for patients (Public Health England research suggests that only 10% of patients survive at the latest stage). Early testing and early intervention also keeps costs down, as more resources are required to deliver care to patients tackling later stages of the disease.

Another point was how some patients might be worried about, for example, blood in their stool, but may be unable to access a medical review and the correct advice easily and quickly.

Patients can also be referred unnecessarily by GPs in some cases. For example, a GP might be under time pressure in the clinic but not be sure of what the patient is presenting, an example could be determining whether CRC symptoms are being presented, or something like haemorrhoids. Understandably, the GP and the patient will want a correct diagnosis, so the GP may refer the patient unnecessarily. In some instances, this can lead to patient anxiety while wasting time for the CRC team.

These thoughts led the team to conceptualise a patient self-serve idea that uses an AI algorithm to take and blend data from the existing Faecal Immune Test (or FIT), with patient symptom data and other clinical data. The use of 'look alike' data

could also be integrated easily to automatically and accurately triage the patient.

The direct patient assessment tool would be used prior to a GP consultation and before any potential referral. The patient would do the test at home and the GP would receive the result quickly. Depending on the result, the patient can then be directed to the correct type of care, be that a referral, further investigation, or to treatment for other conditions. Others built on this, adding that for example, if a patient was automatically referred and a diagnosis of possible CRC returned, the result could be automatically relayed back to the GP and other relevant specialists. Follow-up investigations could then be scheduled with no need for the GP or other professionals to do any admin or paperwork.

The benefit of deploying a pre-referral test before the actual referral is that it has the potential to save a lot of time, money and anxiety for patients, GPs and specialist teams. It gives the patient more agency and autonomy, and gives time back to the GP and the specialist teams. Numbers of appointments would be reduced, and less time would be spent on the referral process and on admin. As such, this idea releases more capacity for all healthcare workers, enabling them to use the resources they have more effectively and efficiently.

NEXT STEPS

The insidious nature of colorectal cancer intensifies the need for early detection and timely treatment to increase survival rates. This reality underlines why it is so vital that the CRC care pathway is as effective as possible for patients and experts alike. As many specialists on this project, including those at Harvard Medical School reminds us:

“This is often a hidden cancer because it doesn’t usually cause symptoms in its early stages.”¹

Accordingly, we intend to waste no time in commencing our next steps, with plans to share the ideas outlined in this paper with top healthcare decision-makers across the UK and the wider world. In addition to raising awareness through the communication and publication of the white paper, we also intend to participate in roundtables to engage directly with key decision-makers, building on the human-centred thinking that began in our workshops.

We believe that the concepts our team have identified and tested will contribute to the empowerment of patients throughout their CRC journey, while simultaneously unshackling healthcare professionals from admin burdens that result in reduced quality of care and burnout. It is our ambition to highlight the potential of our approach to not only transform single pathways and aspects of healthcare, but to eventually empower every person in the healthcare ecosystem.

¹ <https://www.health.harvard.edu/topics/colorectal-cancer>

CONTRIBUTORS ROLL CALL

Collaborators on this project include:

CORE TEAM

Alex Barclay, Founder/ Head of Design, Fuzzy and Alvarez & Marsal

Noel O’Kelly, Clinical Director, Spirit Health

Jamie Starr, Marketing Director – Health Transformation & Group Comms, Spirit Health

Karolina Thakker, Service Design and Speculative Design specialist, Fuzzy

Nini Lin, Service Design and Product Design specialist, Fuzzy & Royal College of Art

Tom Ball, Copywriting

NHS CANCER SPECIALISTS

From Guy’s and St Thomas’ NHS Foundation Trust

Alexis Schizas, Lower GI Consultant Surgeon

Akinluyi (Didi) Emmanuel, Chief Biomedical Engineer & Head of Clinical Engineering

Harriet Rudd Jones, General Manager, Cancer & Surgery Clinical Group

Alice Jenner, Head of Strategy, Cancer and Surgery

Harriet Watson, Consultant Nurse

Kasia Owczarczyk, Consultant in Clinical Oncology

Gehan Soosaipillai, Medical Oncology Consultant, specialising in palliative care

Jose Roca, Medical Oncology Specialist

Marcia O’Reilly, GSTT Cancer Data Team Manager

Leanne Smythe, Programme Lead, Cancer Service Improvement, Cancer & Surgery Clinical Group

Caroline Jane Bowring, Programme Lead, Cancer Service Improvement, Cancer & Surgery Clinical Group

Ella O’Regan, Head of Transformation, Centre for Innovation, Transformation & Improvement (CITI)

From North Middlesex University Hospital NHS Trust

Pauline McCulloch, Macmillan Colorectal Clinical Nurse Specialist, MacMillan

Jennifer O’Neill, Macmillan Colorectal Clinical Nurse Specialist, MacMillan

From X24, NHS England and NHS Improvement

Nicola Hart, NHS England & NHS Improvement

Scott Pygall, Macmillan Information and Support Centre Manager

Kristen Foerster, NHS England & NHS Improvement

Other Specialists

Masood Nazir, Director & Chief Clinical Information Officer, Hall Green Health & NHS Birmingham & Solihull CCG

Jamal Syed, Operational Manager, Hall Green Health

Emma Widlake, Cancer Care Nurse, University Hospital Southampton NHS Foundation Trust

Baljit Singh, Consultant Colorectal Surgeon, University Hospitals Leicester

Shonette Charles, Senior Service Manager for Endoscopy and Bowel Cancer Screening, King’s College Hospital NHS Foundation Trust

Andrea Lodge, Macmillan Information & Support Centre Manager, University Hospital, Southampton NHS Foundation Trust

CONTRIBUTORS ROLL CALL

Collaborators on this project include:

PATIENT GROUPS, CHARITIES & SUPPORT ORGANISATIONS

Sarah Rowcliffe, Manager, Romsey Cancer Support Centre, Jane Scarth House

Corrie Drumm, Policy and Campaigns Manager (England), Bowel Cancer UK

Jennifer Bamforth, Head of Policy and Campaigns (England), Bowel Cancer UK

Lottie Ion, Quality & Evidence Researcher, Maggie's

Alison Allan, Alison Allan, Maggie's Fife

Mark McClelland, Patient Eye Witness, n/a

Rachel Billsberry Grass, CEO, Wessex Cancer Trust

DESIGN TEAM

Prof Clive Grinyer, Head MA Service Design, Royal College of Art

Emma Parnell, Service Design, Freelance

From the Royal College of Art

Debra Babalola

Shefali Bohra

Apichaya Nalamlieng

Emma Parnell

Ziwei Tang

Purvi Gupta

Nilay Kachalia

INNOVATION NETWORKS

Anna Wykes, Programme Manager, Cancer Care, Wessex Academic Health Science Network

Ruth Thomas, Scientific Director, NHS England & NHS Improvement

OTHER SPECIALISTS (SLEEP, BUSINESS & TECHNOLOGY)

Katharina Lederle, Head of Sleep, Somnia

From Alvarez & Marsal

David Champeaux

Julia Schweintek

Amanda Ramsay-Dunn

John Morgan

Ricardo Vera Sánchez

Miguel Briaes Romanillos

From Spirit Health

Chris Barker, CEO

Jim Swift, Health Economist

Bruce Adams, Sales Director

Jane van Aken, Director of Service Development

CONTACTS

Alex Barclay at Fuzzy

alex@fuzzy.org

+44 (0) 7966 135 195

Dr Noel O'Kelly at Spirit Health

digital@spirit-health.com

+44 (0)116 286 5000

