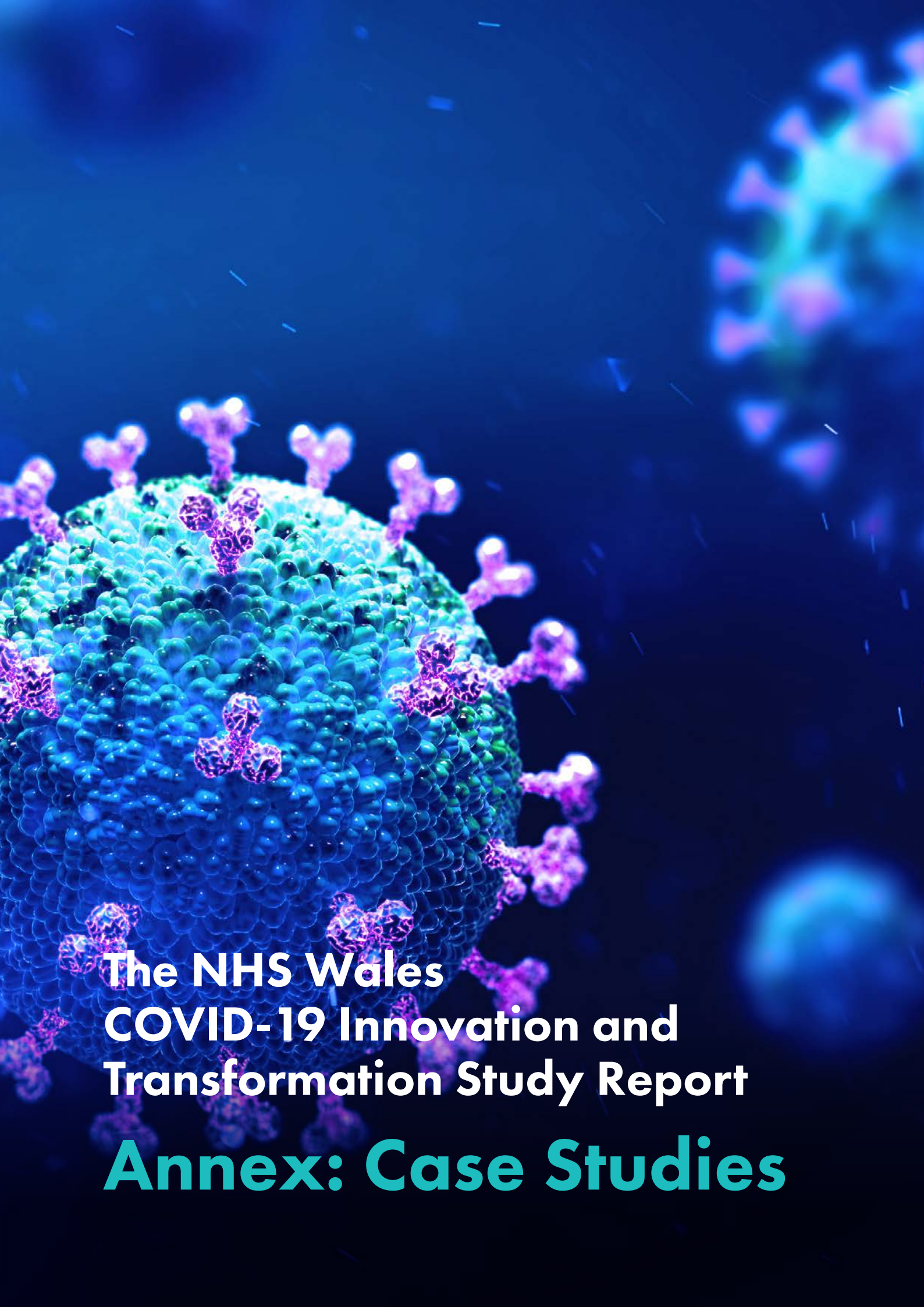
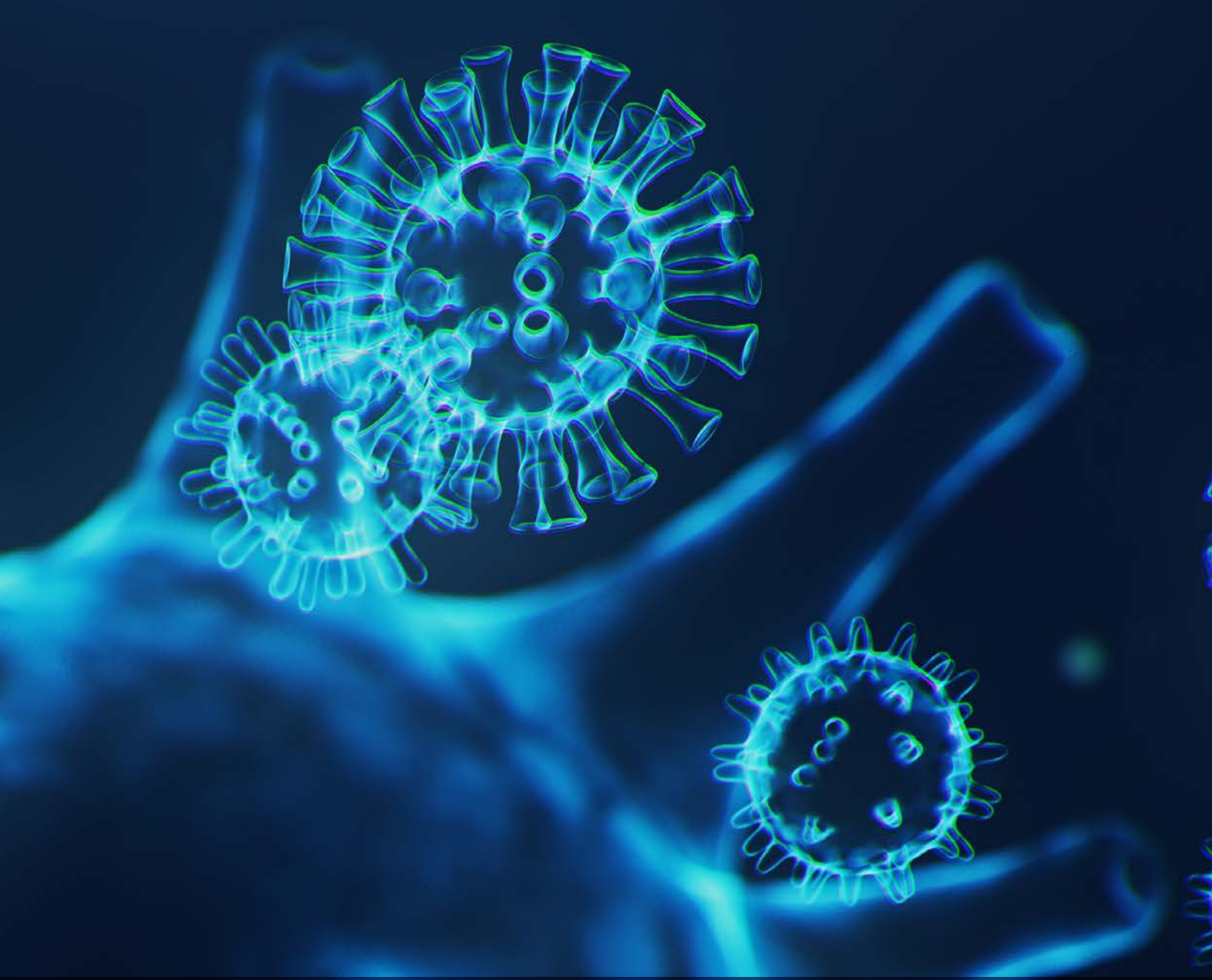


The NHS Wales COVID-19 Innovation and Transformation Study Report

Annex: Case Studies



Contents

Introduction

This Annex to the main NHS Wales COVID-19 Innovation and Transformation Study Report outlines the **37** Case studies from all Health Boards that have been developed during our research study as a follow-up to the analysis of the initial datasets. These included the surveys conducted in 2020 by Aneurin Bevan University Health Board, the Bevan Commission, Allied Health Professionals (AHP) and Healthcare Science (HCS) (see section "Datasets" in the Appendix to the main Report), in order to investigate the **key themes** identified through the analysis of these datasets**.**

To facilitate the reading, we have reported the **key themes** from the main Report; these can be found on page 4.

Case studies have been selected using the following **criteria** applied to the aforementioned datasets:

- coverage of all the themes identified within the data;
- coverage of all the Health Boards included in the data sets.

Through these criteria, 90 cases were identified for further investigation; enquiries put to the appropriate contact points yielded 37 final cases for investigation through in-depth semi-structured interviews. These were then condensed in the outline case studies presented in this Annex to the main Report.

The case studies capture the complex dynamics at play; as such, they often encompass more than one of the key themes.

Through this methodology and in the spirit of the research informing this report, we have ensured that we have captured the experiences of as many representatives as possible whilst ensuring that the evaluation of the case studies will not discount any key factors. Such an approach maximises the lessons learned and guidelines and recommendations that constitute part of the key learning in the final report.

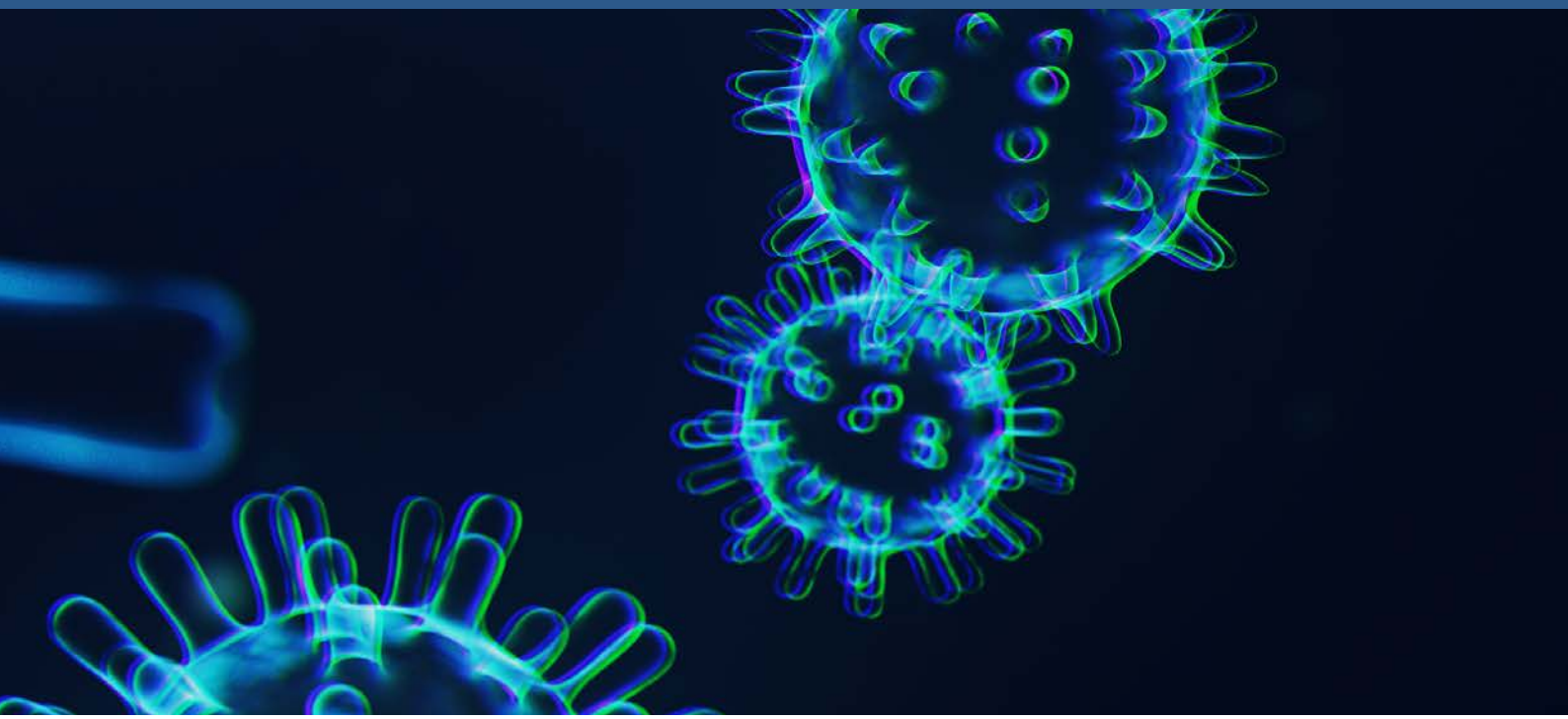
The case studies will help highlight the transformation details of both simple and complex innovations and the dramatic difference they made to delivering healthcare in Wales.

Findings from the case studies analysis were subsequently **validated through four focus groups** of expert stakeholders.

You are encouraged to refer to the main report for the list of recommendations, the key themes and the individual studies conducted.

We hope you will enjoy reading through these case studies, that you will find stimuli for further reflection and that this reading can serve as a source for inspiration to help you evaluate and effect positive and meaningful change within your specific environment.

N.B.: The case studies are set out in alphabetical order of the lead respondent.



Key themes

Our analysis of the broad range of qualitative data (*please refer to the main NHS COVID-19 Innovation and Transformation Study Report*) revealed **seven key themes**, which we have explored further with the case studies:

More agile use of resource

- Significant reallocation of resources took place, some reported this was very easy, others said it was process heavy (informal vs. formal arrangements).
- Barriers were identified in redeploying staff to priority areas at pace.
- Access to funding for innovative and transformative ideas was readily available to some colleagues but not others.

Staff well-being

- Interventions introduced to support the emotional and mental health of colleagues were reported, and were positively received.
- The impacts of these interventions have varied across a diverse workforce, highlighting the need for a wider range of interventions (in partnership with other organisations).
- Frontline colleagues have reported a need for different support, provided in more accessible ways.
- Clear communication was highlighted as an essential element of staff well-being.

Working together

- A sense of real pride in the way staff pulled together through a difficult, high pressure time was clear from the responses.
- Staff reported feeling empowered and valued through being able to design and implement new innovation and transformation projects.
- Multi-Disciplinary Teams and networked approaches were used more widely to make the most of varied skills to tackle new challenges.
- Positive community spirit, cohesion and resilience were reported, involving third sector colleagues and organisations.

Accelerated decision-making

- Due to revised governance arrangements, many staff reported that decisions were made at a faster pace (described as "reductions in red tape"). This made a big impact and was welcomed.
- Staff felt empowered to make decisions based on their knowledge and experience.
- This enabled staff in some areas to try new and different things, leading to shifts and changes in service provision.
- Staff views highlighted a real need to capitalise on this momentum to change and transform 'the way we do business going forward'.
- Many staff fear a return to old ways of working, where they are not able to make the changes to services they feel are needed.

Sustaining the pace of innovation and change

- A feeling of confidence and ability to try new things and provide services in new ways was a major theme.
- As well as improving the service, this had a positive effect on staff morale and patient outcomes.
- Strong views that NHS Wales needs to capitalise upon the 'COVID-19 platform' and current change-receptive state to make changes to services, based on what has worked so far, have emerged.

Digital access and confidence

- There is strong evidence of an effective uptake and use of digital technologies by staff, both in providing patient services and internal working and communication.
- Digital technology provided more choice and control to patients over service use and self-treatment.
- The question of 'digital by default' vs. 'digital by choice' needs to be addressed to ensure digital inclusion.

Embracing new technology

- The systematic (rapid) acceptance and adoption of technologies has been critical in responding to the pandemic.
- It is clear that the use of technology is considered essential in responding to the stabilisation and reconstruction of services.

In addition, the following **wider themes** emerged:

- COVID-19 provides a broad platform for innovation and transformation.
- NHS Wales has a significant role to play in carbon reduction, particularly through the use of technology. The environmental impact of service change should be measured.

The seven key themes are detailed in Pages 11-19 of the main Report.

Case Studies

The case studies will help highlight the transformation details of both simple and complex innovations and the dramatic difference they made to delivering healthcare in Wales.

List of case studies

Case Study

Digital mental health provision for Children and Young People

Alka Ahuja, Professor and Consultant Child and Adolescent Psychiatrist,
Aneurin Bevan University Health Board

BACKGROUND

Professor Alka Ahuja is a Consultant Child and Adolescent Psychiatrist at Aneurin Bevan University Health Board and an Honorary Professor at the University of South Wales.

Prior to the COVID-19 pandemic, her team had been piloting video appointments for young people with mental health problems. This is something they had long been keen on as they engage with family and friends this way.

They carried out a user consultation/evaluation, focusing on how young people were using it and asking young people, family and medical professionals about their experiences. In March 2020, when COVID-19 began to spread across Wales, they needed to ensure they could offer remote care and support to the public while protecting themselves and other patients, as well as treating and supporting those who tested positive for COVID-19.

They started engaging with GP practices and primary care colleagues from different departments – e.g. researchers, project managers, trainers, informatics – who had never met before, to form a team to drive forward the digital appointment model.

AIMS

The small team worked long hours to develop a high-quality technical toolkit, clinical toolkit and training that could be rolled out to thousands of people in GP practices across Wales.

Mike Ogonovsky was tasked with the role of senior responsible officer and the team met virtually every morning to discuss daily goals and deadlines. Under normal circumstances, it would take a couple of years to roll this programme out, but COVID-19 accelerated the need/demand.

They started roll-out in primary care and within six weeks had implemented the solution across 90 per cent of GP practices. GPs could now offer flexible ways to engage with patients who really needed appointments, which meant the GPs could work either from home or their practice – GP staff themselves had times when they needed to self-isolate. The team then rolled it out for all hospital and community care appointments, and subsequently across all NHS Wales Health Boards and the Welsh Ambulance Service NHS Trust, enabling them to also offer virtual video or telephone appointments instead of the usual face-to-face.

Care home residents became the most vulnerable and fragile people, living in communities who were not getting the support they needed, so the team provided training and equipment to staff/residents so that they could still attend GP appointments.

The solution was then made live in dentistry, optometry and pharmacy so they too could offer video consultations as an alternative to face-to-face appointments.

From October 2020, they started offering health and care engagement with schools so children and young people could maintain access to the healthcare they needed for their physical, mental and emotional well-being.

CHALLENGES

They faced several challenges, for example rolling out to patients with mental health conditions who were initially quite worried. Staff equally shared concerns on the ability to assess things like non-verbal communication, body language and other behaviours. This was overcome by developing clear guidance and strategies.

Another challenge was negotiating the 'red tape' and usual decision-making protocols, although this appeared to be a lot easier during the COVID-19 pandemic.

"There were often times the workforce themselves fell ill which had a negative impact on the momentum. The challenge of working within a team that had never met

before was quite difficult but having daily virtual meetings kept them very focused, offered clarity and bonded us together."

Identifying resources was also a challenge. Equipment like headsets and cameras was limited as everybody was transitioning to video appointments, along with the additional complexity of the service going live on a mass scale.

Working with different Health Boards and encouraging adoption presented multiple challenges as it cannot be done by the switch of a button. New processes had to be incorporated into workflows for frontline staff, along with raising their awareness and knowledge of the revised service engagement so they could make patients and families aware of the changes.

OUTCOMES

Initially, the team was unsure of the success of virtual/digital appointments. There is some evidence from people engaging in health services this way in countries like Canada and Australia and so now they are looking to evaluate and generate evidence of where this approach works and where it doesn't – as, to date, they have limited knowledge as to how these methods compare to face-to-face.

Having conducted over 100,000 digital/telephony consultations in the last nine months, they have now gathered evaluation data from more than 26,000 people who have been willing to tell them what is working, what isn't working and where. They have interviewed 300 professionals, patients and families which is going to evidence the successes and inform how they sustain and continue to develop the service for the future.

There were a number of positive experiences which commenced with Welsh Government recommending a single designated platform for patient digital engagement, Attend Anywhere. This approved, safe and secure platform is user friendly, has a virtual waiting room and the patient doesn't need to download an app.

Wales's population and healthcare staff are widely spread across a rural and urban split. The team found clear and frequent engagement with those further into the implementation process was very positive, and considerable sharing of good practice or learning from others' mistakes extremely beneficial.

There were minimal negative experiences – more frustrations when it came to rolling out the service and some resistance from clinicians, but not from patients or families. There was also nervousness on managing risk and identifying who responsibility and accountability sat with but as it grew and became a national programme, they identified that people would either be on board or do nothing.

The team did experience some negativity when commencing evaluation because a lot of people didn't understand its value. In response, they published a newsletter to disseminate why they were doing it, and share hints/tips and what others found helpful, which eliminated the negativity.

One final negative they found was that those in health settings struggled with things like Wi-Fi bandwidth, and patients struggled with Wi-Fi connection or not having the capability, although the team felt these were beyond their control.

In the last few months, the team has been awarded a number of prestigious awards which mean so much to them and acknowledges the work they are doing. It also reinforces the message that they are providing high-quality work that is recognised nationally and internationally.

NEXT STEPS

In summary, the team managed to develop a tool for the clinicians of the future and collated evidence to show what works and where. It will not replace all face-to-face consultation but will be an alternative, flexible option that can be offered to patients who are restricted from attending consistently face-to-face, and also benefit patients who need more time to be seen face-to-face and ultimately improve patient outcomes as well as reducing impact on the carbon footprint.

The team had one patient with a cancer diagnosis who didn't want to attend the appointment on his own. His children joined the video call from London and Singapore which would not have been possible with a face-to-face appointment.

Organisationally, they learned that with a common goal and clear communication channels a lot of things can be done. Having trust in the team and belief in the people you work with is critical, especially when you've never met them before.

Case Study

Implementing a high-quality menu-based virtual rehab platform for cardiac patients during the COVID-19 pandemic

Hassan Al-Kaabi, Cardiac Exercise Specialist, Aneurin Bevan University Health Board

BACKGROUND

Hassan Al-Kaabi is a Cardiac Exercise Specialist at Aneurin Bevan University Health Board. His background is in Sport and Exercise Science and in 2014 he completed a Master's degree in Cardiac Rehab. Hassan chairs the education group, a ten-strong team.

Hassan has been working in the Health Board for just under five years and currently works in cardiac rehabilitation which includes the treatment of patients who have had a cardiac event such as an MI, heart attack, surgery, stents, etc. After their event patients stay with the department for around 8 weeks and Hassan and his team facilitate their exercise, nutrition, occupational therapy, and nursing.

CHALLENGES

When setting up Education Plus, the team were initially met with barriers, in particular related to the acceptance of their solution and approach within the hierarchy. Being relatively new to the department, Hassan was concerned with trying to obtain buy-in from senior staff without alienating those who may have been resistant to change; as he was quite new, he was afraid of "stepping on the toes" of seasoned professionals who were questioning the need to develop new resources when there were programmes such as those from the British Heart Foundation already in existence and with a website presence (as well as DVD resources).

Thanks to the dynamism of the education group, with their multidisciplinary background, forward-thinking mindset and substantial effort, Education Plus started to gain traction and more staff started to get involved. A virtuous circle ensued whereby increased involvement generated greater confidence in the programme, which promoted increased use by, and advocacy to, all parties involved (patients and staff).

AIMS

Pre-COVID-19, the cardiac rehabilitation programme was delivered face-to-face. Generally, patients would be brought into the gym and be provided with educational activities in a group environment, however, when COVID-19 hit, these face-to-face services had to stop.

Hassan and his team were quickly forced to complete their services over the phone which was proving to be challenging, especially when providing advice to patients who had recently undergone surgery, due to issues such as the lack of monitoring capability for vitals (i.e., blood pressure, heart rate, etc.). The team also struggled with providing their patients with thorough education and so Hassan rallied the Education Group in their Health Board and Cardiac Rehab department to ensure they were able to successfully help their patients.

As a result, the Education Plus programme was started. Positioned as a menu-based virtual rehab programme, the programme allowed the team to get their services online and to give patients the option to use their online services via YouTube and/or Facebook. The programme included a closed Facebook group for patients who were part of the eight-week programme so patients could interact with one another and access education material such as PDF's, PowerPoints, and videos to help aid their recovery and build rapport.

"When the pandemic started, it could have been easy just to continue doing [our consultations] over the phone and just wait until coronavirus passed. I think it may be quite a while before everything does go back to normal or what normal is going to be, so I think that [implementing] an online service is something that should have been done quite a while ago."

Hassan Al-Kaabi

OUTCOMES

The team's effort has provided patients with an enhanced ability to access their content online, while adhering to COVID-19 restrictions. Getting patients into the hospital for rehab can be difficult, whether it be due to travel restrictions, lockdown, etc., and combined with the fact that only 66% of patients were attending rehab, being able to provide a menu-based online rehabilitation resource has offered a powerful tool to increase uptake and scale up to many more patients. The feedback from patients has been very positive to date, in particular the ability to interact with other patients and with the team and they have noticed uptake from all age groups, including the elderly. All staff are now on board with the programme, allowing for regular interaction with patients online and the continued creation of educational resources ranging from resistance training, cardiovascular exercises, as well as online education such as those provided by dietetic services, occupational therapy etc.

This online educational programme – which originated from the willingness to safeguard the level of care and support pre-COVID-19 – albeit born out of necessity, has enabled the team to, going forward, provide patients with the choice of how their education can be carried out, without sacrificing on the quality, and to retain aspects such as patients' camaraderie, which are very important to the rehabilitation dynamic. Hassan acknowledges that online resources were, in hindsight, long overdue and by taking advantage of the opportunity COVID-19 presented, now the Health Board has a resilient and flexible mechanism for many patients to access cardiac rehabilitation in the future.

NEXT STEPS

The next steps for Hassan and his team will be to review the progress of the programme and continue to obtain reviews and thoughts from patients. They have been tracking progress so far and will be regularly reviewing it to help bolster the patient experience as time goes on. Additionally, they created a satisfaction questionnaire to learn more about the patient experience.

At present roughly 50% of their patients are currently making use of their online resources and the team aims to increase this number by the end of the year. With constant feedback from their patients, they will continue to promote the programme, create engaging content, and improve their services. As technology develops and access improves, the number of patients benefiting from the service will likely go up.

" I love seeing patients face to face, and I think that's imperative, but, going forward, it's all about [the] patient being able to choose [whether] to come in face to face but also have the high standard, quality care with online accessibility."

Hassan Al-Kaabi

Case Study

Restructuring pathology placements for University students during the COVID-19 pandemic

Victoria Bradley, Senior Lecturer and Clinical Learning Facilitator, Cardiff Metropolitan University

BACKGROUND

Victoria Bradley is a Senior Lecturer and Clinical Learning Facilitator at Cardiff Metropolitan University. She teaches foundation healthcare science, biomedical science, and healthcare science at an Undergraduate level, and runs a Master's level Biomedical Science class.

As the Clinical Learning Facilitator, Victoria manages the placements for health care science students who go out to NHS pathology laboratories to train to become biomedical scientists.

AIMS

Due to the pandemic, Victoria and her students were faced with a pause in regular activity. Many of her third-year students who were already out on placements had their placements suspended, while others were able to stay in placement labs by simply volunteering. When placements returned, Victoria had to work closely with the placement providers to ensure the students could meet all their training education needs to gain Certified Professional Coder (CPC) registration. In some cases, certain ervices within pathology had been shut down and thus, Victoria had to work with the placement provider to come up with reasonable adjustments.

To ensure all students were able to gain their CPC registration, Victoria and her team chose to utilise e-learning to cross-reference the skills required for those affected learning outcomes with other tasks to develop and evidence the students' knowledge and understanding necessary to meet the learning requirements. As there was also the opportunity for students to become registered as biomedical scientists on the Temporary Health and Care Professions Register, Victoria also worked with the placement providers to support as many students as they could in getting onto the temporary register so that they could become part of the workforce dealing with the influx of patient's samples brought on by the COVID-19 pandemic. This posed as a great opportunity for cross-discipline training as, while some areas of pathology saw a drop in workload, others were inundated with work and required assistance.

CHALLENGES

For first- and second-year students, Victoria noted that placements had been completely cancelled. Some were offered work in various roles through Health Education and Improvement Wales (HEIW), and many volunteered for work in NHS laboratories, however, most were entirely away from laboratories. For Victoria this posed a great challenge as students were not receiving a full education. To combat this, Victoria and her team worked with placement providers to identify the evidence, information, and skills that students would usually gain on placement. Once they knew what elements could be done remotely with support from trainers, the team ensured that students had access to a virtual learning environment to submit their findings and evidence of their training via email, telephone, and Teams meetings. This allowed students to learn while developing a relationship with their placement trainer who they would likely go on to work with in their third and final placement.

While placement learning challenges were resolved, Victoria was also faced with the challenge of making up for the 15 weeks of learning many students missed over the last year. To combat this, the team decided to extend the final placement within the third year to 35 weeks so that each student is given additional training in a laboratory setting to meet the knowledge and skill requirements for the academic elements of their programme and the training standards for the Institute of Biomedical Science and CPC registration.

Alongside placement and learning challenges, Victoria and her team were also faced with the challenge of working remotely. Victoria notes that it was not always easy getting hold of the relevant people and that she did not want to overburden the pathology staff who were constantly navigating a rapidly changing environment.

OUTCOMES

While the rearrangement of thousands of placements is an achievement in itself, Victoria notes that she was pleased with the increase in communication and relationships between her team and their placement providers. Having worked quite closely with the pathology laboratories across Wales, the team already had a great relationship with their providers, however, Victoria notes that their close interaction and effort helped them solidify these relationships and help ensure a seamless recovery from the pandemic.

Additionally, Victoria highlights the benefits deriving from blending the students interaction through digital forms of communication, which was very different from meeting face-to-face. She praises this way of communication for providing students with easier access to their support services and opening positive communication channels between her team and their students. Victoria and her students also benefitted from the acquisition of better digital skills and communication tools, which will likely be utilised in the future.

Finally, when looking at the pathology workforce across Wales, Victoria notes that the changes they made to their Year Three students' placements had a positive impact on the Welsh workforce, especially for students who were at the stage where they were able to enter the temporary HPC register and become a part of that workforce.

NEXT STEPS

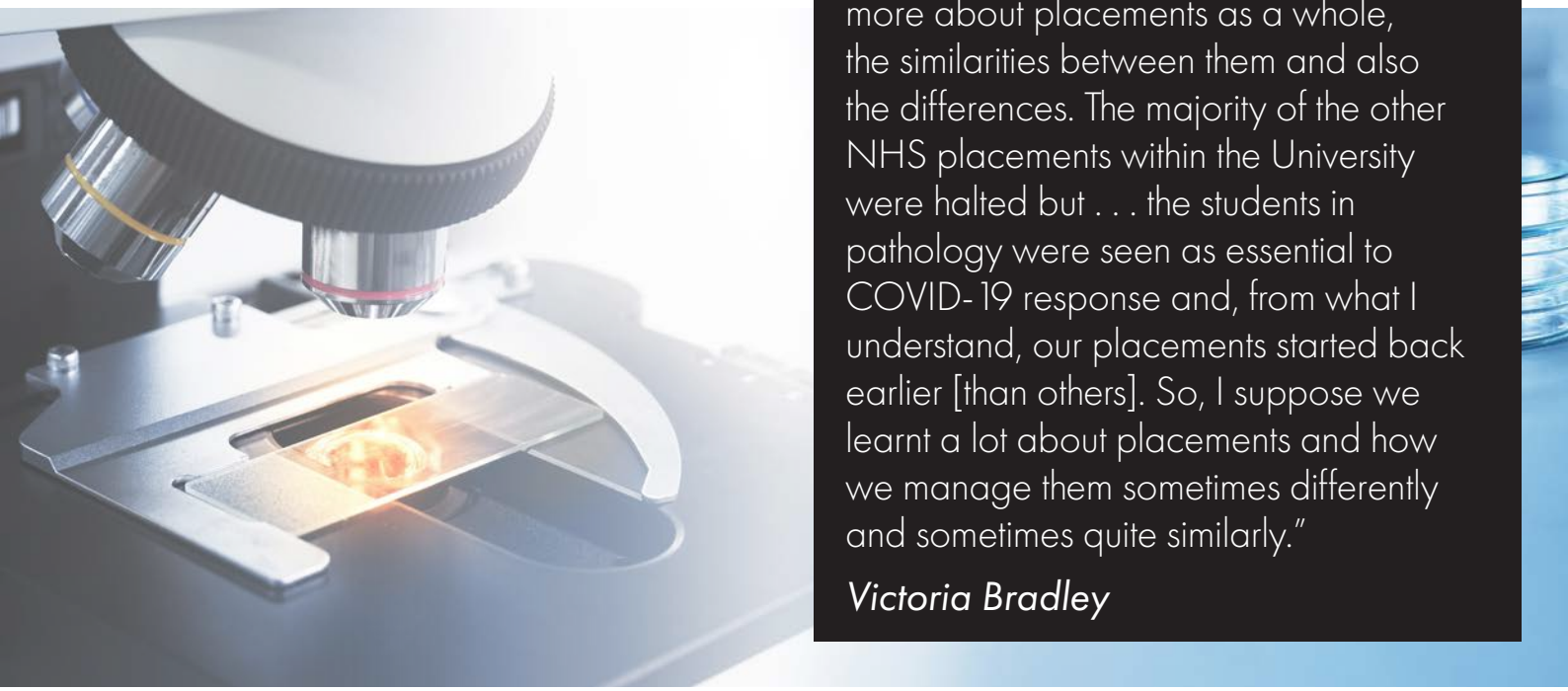
The team will be reviewing the learning around placements and their management for long-term future development.

The impact of this year's cancelled placements is going to be felt for the next few academic years, and for many (at the time of writing this report) the status of their placement which needs to be extended until September, is still uncertain due to impact on placement providers. Victoria and her team will continue to support each student and will continue to put contingency plans in place should further cancellations occur. Placements will continue using different areas within laboratories, which will allow them to provide the evidence needed for the placement.

Victoria notes that her team will also continue to incorporate a more virtual approach to maintaining communication channels with their students and placement providers, whilst maintaining the face to face interaction to some extent, which is still necessary to evaluate aspects such as body language in students, as well as to maintain relationships with placement providers.

"I suppose [the pandemic has caused us to] talk a lot more about placements, because I'm not the only person who manages placements within the University. We have a number of other NHS placements, so we've learned more about placements as a whole, the similarities between them and also the differences. The majority of the other NHS placements within the University were halted but . . . the students in pathology were seen as essential to COVID-19 response and, from what I understand, our placements started back earlier [than others]. So, I suppose we learnt a lot about placements and how we manage them sometimes differently and sometimes quite similarly."

Victoria Bradley



Case Study

Using art to facilitate discussions with young people during the COVID-19 pandemic

Eleanor Davis, Arts and Health Project Officer with the Iceberg Transformation Programme, Aneurin Bevan University Health Board

BACKGROUND

Eleanor Davis is the Arts and Health Project Officer with the Iceberg Transformation Programme. The goal of the Iceberg Transformation programme is to make mental health services embedded within all places where children and young people live.

Eleanor's role is to explore how creativity and the arts can help support the delivery of mental health services to children and she works with individuals and teams who are regularly in contact with young people.

AIMS

Having only begun her role six weeks before the first lockdown started, Eleanor was planning to work closely with the Transformation Programme's ten partners to directly weave the art of creativity into the delivery of children's mental health services. When the pandemic hit, contact with young people dropped significantly and Eleanor notes that there was substantial uncertainty around how professionals would be able to interact with children and young people virtually.

Because of the difficulties in maintaining contact with young people and those working directly with them, Eleanor changed tactics and developed an initial concept for a "postcard" which rapidly evolved into a "virtual postcard".

The project was supported by Arts Council Wales; this allowed her to develop the concept into a project with the larger scope: "I'm thinking of you" was born as a project.

The aim of the project was to explore how artists' interventions could help support mental health and well-being of families, offer connection and comfort during lockdown and address social isolation and loneliness.

Through this project, Eleanor worked with local, Wales-based artists, to highlight the five ways of well-being via art.

Eleanor also aimed to show the community the power of having faith in the fact that ideas can grow and develop amidst uncertainty and of exploring new "territories" – the way Eleanor worked on this project which was radically different from the traditional "best practice" approaches of working with young people – and that there were different means of engaging or participating, as well as means of support available should they need them.

CHALLENGES

The main challenge Eleanor faced during the pandemic was finding project partners that were able to keep in contact with young people during lockdown. In many cases, Eleanor found her partners and the community were providing their contributions with interventions such as information packs but weren't directly working with young people, which was a core area for the Arts programme.

Eleanor also noted a main challenge was getting young people to engage when they were struggling to adapt to a new way of life. Not being able to meet them face-to-face, or speak to them on a personal, physical level, was highly challenging and Eleanor struggled at the beginning with finding ways to reach out. The programme however started quickly to develop organically, initially through word of mouth among group working with young people and artists. Subsequently, the programme grew and was formalised as a 12-week programme.

Anthony Shapland – "Unearthed" © 2020 Anthony Shapland

OUTCOMES

One achievement Eleanor noted was that young artists self-selected themselves and came forward to participate in the programme of their own accord. Every artist was paid the same. The artists worked independently and collaboratively with young people to produce 61 artworks. This engagement from young people that developed so organically felt really positive – given that it had started without their engagement.

Eleanor also highlighted the benefits of being able to showcase so many different types and ways of expression, and to do so in an egalitarian fashion, enabled by social media. Having given the artists full creative freedom, the project resulted in numerous different perspectives and types of artwork being created that spoke to many different types of people.

Additionally, Eleanor was very pleased to highlight the depth of discussions that came from the artwork each artist produced. Hard hitting themes such as Black Lives Matter and other topics were discussed in depth due to the need to respond to the artworks being created and led to them having difficult and meaningful discussions quite quickly.

This project shows that when exploring ways of making an impact, sometimes being able to pursue *"a new level of freedom, like a permission to be able to respond to people's needs"*, as Eleanor puts it, may open up new and exciting avenues to help society and especially those most vulnerable.

NEXT STEPS

While Eleanor would love to recommission 50+ artists over the coming months, she notes that people are now a lot less hesitant about engaging and youth professionals are now delivering services online.

If this project were to be replicated and taken forward, it will be important to avoid putting too constraining frameworks in place, but to allow the creative expression within a loose framework of the theme of exploration, and to trust that creativity and genuine interest in the value of the art will lead to something interesting.

Eleanor's next steps will likely be focused on supporting low-income families and may have a lack of resources to express themselves creatively. This could start by using the artworks produced during the 12 week programme as a provocative trigger to stimulate a deeper engagement with people.

Additionally, Eleanor is considering looking at projects that make use of billboards and public spaces to create a public gallery that allows youths to express themselves, as well as finding effective ways to use social media by NHS teams to help spread the positive messages coming from such projects.

"We had some really hard hitting topics being raised in the artworks, like BLM, how police were responsible to young people adhering to COVID-19 rules and how the virus was portrayed as having a potentially racial dimension. It was great to be able to work with a group of young people as curators to navigate how to share these artworks, what the message is, and how do we make the project inclusive. Often you'd have to work with young people for a long time to get that sort of depth of discussion." *Eleanor Davis*

Credits: Aya and Deborah © 2020

Case Study

How the use of a virtual interface for remote access to the balance clinic reduced patient wait times by 307% during the COVID-19 pandemic

Hannah Derry-Sumner, Clinical Scientist and Lead of the Balance Investigation team, Cardiff and Vale University Health Board

BACKGROUND

Hannah Derry-Sumner is a Clinical Scientist who leads the Balance Investigation team at Cardiff and Vale University Health Board. Hannah has spent many years working on dizzy patients and currently works in the hospital's Audiology department. The department hosts 34 clinical members of staff across the audiology discipline, including hearing, paediatrics, and cochlear implants. Hannah has three fully qualified people on the balance team, with an additional trainee on board.

The audiology department assesses all aspects of hearing and balance for those patients who have hearing and balance disorders. They regularly fit hearing aids, assess people for cochlear implants and the balance team regularly get involved with these activities. Generally, the team get referrals straight from GPs, but they are hoping to roll out their services to primary care access to see people with certain balance problems within the primary care setting.

CHALLENGES

The main challenge faced by Hannah and team was the availability of technology, in particular internet access, by some of the patients, which at times forced them to revert back to telephone. Hannah noted that while some people preferred face-to-face interactions, most people did not challenge the virtual interface and were happy to comply, helping reduce physical contact and adhering to COVID-19 prevention measures.

A further challenge arose during the second wave of the pandemic, due to redeployments to COVID-19 wards which reduced the team capacity.

Finally, bureaucratic hurdles were also faced by the team when trying to rapidly produce video resources for patients.

AIMS

At the beginning of the pandemic, Hannah's team had to cancel all their patients appointments because they didn't know how safe it was to see people face-to-face. At that point, there was about a 19-week waiting list to get an appointment in audiology for a balance assessment so having to cancel all scheduled appointments was by no means ideal. As people kept getting referred to their department, and wait times were increasing to up to 40 weeks, the team knew they had to begin investigating safe ways to triage patients.

Virtual triage had been briefly discussed pre-COVID-19, however they were never able to evaluate its clinical output. Regardless, Hannah began contacting the patients via telephone to determine ways to conduct virtual treatment. For certain patients, such as those diagnosed with Benign Paroxysmal Positional Vertigo (BPPV), Hannah felt there was scope for self-treatment and so the team began coming up with resources they could send to patients via post or email.

The team worked to develop a secure digital platform based on Patients Know Best, that allowed for interaction between clinicians and patients and began sharing documents such as informational leaflets on how to treat your diagnosis from home. This platform resulted in a decrease in patients who needed physical appointments and allowed for the team to discharge a substantial number of patients without needing to physically see them.

OUTCOMES

Hannah notes that through the implementation of their virtual interface, the team were able to offer this self treatment modality to a number of patients and reduce the waiting list from 40 to 13 weeks. Additionally, overall waiting time for a first appointment has been significantly reduced and the clinic has also noted an increase in efficiency, which Hannah believes to be a major plus.

The team has been able to refine the patient pathway and improve the efficiency of the referral pathway as a result of the implementation of the self treatment and its combination with the visits for the non clear-cut cases.

In relation to the treatment of BPPV, Hannah noted that it is a highly prominent diagnosis amongst the elderly population and, given the pandemic, they proceeded with prioritising these cases to be able to successfully reduce the number of elderly patients being brought into hospital for BPPV related falls through this strategic decision, which saves money and resources.

Finally, Hannah notes that she's very proud of the beneficial impact the team and their virtual interface has had on their patient's quality of life and the service they receive. During the pandemic, people were genuinely relieved to not have to come into the hospital to receive treatment and being able to do a lot of the triage process from their home was quite comforting.

NEXT STEPS

One of the next steps for Hannah and her team is to create a video or obtain video resources to send out to patients promoting best practice and home treatment options, which they were unable to do due to red tape within the departments and a lack of resources.

Additionally, the team will be completing an audit focused on the impact that the change of waiting times had on patient outcomes, which Hannah is keen to read, and will continue using their virtual interface to triage patients going forward, to help improve the service and incorporate the learning from the use of a digital platform to encourage its use by other departments.

"I was quite excited to try and make [the virtual interface] work, because I feel that the impact of it has been really beneficial for the patients: they get a better access to the service. Also, some people are genuinely relieved not to have to come into the hospital to have a treatment and that they can manage it themselves at home, so I think it's been really beneficial and I'm excited about it."

Hannah Derry-Sumner

Case Study

Streamlining abortion consultations and treatment during the COVID-19 pandemic

Dr Jane Dickson, Clinical Director, Consultant in Sexual Reproductive Healthcare, Aneurin Bevan University Health Board

BACKGROUND

Dr Jane Dickson is a Consultant in Sexual Reproductive Health Care at the Aneurin Bevan University Health Board. Jane is the lead for the abortion service and also serves as the Clinical Director of sexual and reproductive health services for the Health Board.

As the Clinical Director, Jane is responsible for the oversight and governance of all sexual and reproductive health services in Gwent. These services include concerns related to contraception, sexual health testing, vasectomy, psychosexual counselling, sexual assaults, and more.

The abortion care service provides support to approximately one and a half thousand women a year across Gwent. Her team try to keep the majority of the care in-house, however, capacity is limited and, in the past, approximately between 10-20% of their activity was referred into third sector provision with BPAS, the British Pregnancy Advisory Service in Cardiff.

Since the COVID-19 pandemic began, Jane's team at the abortion care service has been able to streamline their services and are now doing the vast majority of care in-house.

AIMS

When the pandemic hit, the Abortion Care Services team found themselves in a good position as guidance was provided by the Royal College of Obstetricians and Gynaecologists (RCOG) who provide national care standards.

In the past every woman who requested an abortion rang for an appointment via the direct access telephone line and were usually provided with an in-person appointment set for 1-2 weeks' time. This appointment would take roughly 2 hours and would include a scan followed by a meeting with both a nurse and a doctor to consider the best way forward.

The new RCOG guidance aimed to reduce face-to-face meetings, limit patient exposure, provide information in an easy-to-digest format, and speed up the consultation process. The new process highlighted that not every woman needed to have a scan: if she was sure of her date, last period, and other concerning factors, she could actually have her treatment provided without the need for a scan.

Under the new RCOG process, most patients were provided with a telephone-based consultation within 1-2 days of reaching out, as opposed to the previous 1-2 week wait for in-person appointments. Following their appointment, a patient would have the choice of picking up their prescription from the clinic or having it posted out to them. The team produced a video resource to greatly help the patient feel more connected with the service. They also enabled sign-off by the two consultants before the patient's visit to the clinic to pick up the medication, without the need for further face to face interaction with multiple staff and the exchange of forms. For those emergency cases, an emergency line and visits for scans were also set up.

CHALLENGES

While the process was, in theory, seamless, Jane's team faced challenges around posting prescriptions out to patients. A patient must be within a certain timeframe of their pregnancy to legally take abortion medication and, with the delays in postage caused by the COVID-19 pandemic, the service was faced with considering whether the patient would receive their prescription on time. To ensure medication was received on time, this challenge was tackled by the team suggesting patients either picked-up their prescription in person or sent a representative to do so for them.

Another challenge the team faced was the loss of capacity in relation to surgical abortions. Due to the incredible rise in COVID-19 cases, hospitals deemed surgical abortions to be non-emergency procedures, so many women were pushed towards having medical abortions.

OUTCOMES

This approach greatly streamlined the abortion process for many of their patients. The team received outstanding patient feedback and found that there was much more of a sense of engagement with the service. Additionally, they saw an increase in cases with lower gestation rates which resulted in fewer failed abortion procedures and complications.

With the elimination of additional administration and long clinic wait times characteristic of the pre-COVID-19 approach, this process also cleared up time and space for women who needed surgical abortions to be seen in the community clinic as opposed to a hospital.

Overall, this change greatly enhanced patients' experience: reducing wait times, number of appointments and complications; increasing the robustness of prescribing and legal procedures; improving the patient's experience and condition, and contraception uptake; all the while maintaining a personal and human nature.

NEXT STEPS

Jane and her team have noted that this new model and associated processes should be kept in place post-lockdown as they have given them a chance to innovate and make necessary changes to an old, stagnant process.

The content the team created during their time in lockdown, including informational videos, were very well received and they would like to continue producing similar content and to ensure women are well informed and feel more involved in their care.

At present, the team does not have any plans to revert to their old model of care and hopes to help maintain a similar model in clinics across Wales, since all abortion leads have become more cohesive and interaction has improved. Jane also advocates for the law related to the consumption of the first abortion inducing tablet to be kept in place post-COVID-19, allowing women to take the pill at home rather than at a clinic or hospital, enabling early treatment whilst preserving the paramount safety requirements.

"Just because you've done something one way for a long time, that doesn't mean it always has to stay that way. . . . It's quite difficult to change anything from the standard way [but] it actually gave us a real opportunity to innovate. We learned that it was safe and we learned that we could provide a better quality service."

Jane Dickson

Case Study

Utilising technology and stock management tools to remotely audit nursing homes during the COVID-19 pandemic

John Dicomidis, Pharmacist, Governance team, Aneurin Bevan University Health Board

BACKGROUND

John Dicomidis is a Pharmacist who works in the Governance team within the Aneurin Bevan University Health Board (ABUHB).

At present, John's role includes checking that nursing homes are complying with the requirements the board sets, specifically focusing on their medication. His role, until recently, was totally unique and for quite some time, he was the only pharmacist working in care homes. The nature of John's role means he physically visits nursing homes on a regular basis to review their process, how medication is ordered, stored, administered, and disposed of.

John also assists the nursing team if any medication problems occur, or investigations are launched.

Recently John has been getting involved in more than just strictly pharmacy related tasks as, through regular interaction with the nursing team, he has found himself occasionally supporting them when needed.

AIMS

Pre-COVID-19, John's role required him to physically visit care homes to audit their process. However, when the pandemic hit, his role slowed down, and he was forced to re-evaluate his process before re-initiating it. To meet pandemic restrictions, John decided to work remotely and send the care homes audits to fill out and return to him. To ensure accuracy, John requested they provide their MA charts for him to review. John also has access to each care home's electronic master chart, enabling him to double check their responses and feedback accordingly.

With this change in procedure, John has also implemented communication channels with additional parties such as GPs and pharmacies. Should there be discrepancies or questions regarding prescriptions, John notes that the new procedures call for him to send a report to both the additional party and the nursing home to ensure clarity is achieved.

Additionally, John highlights the pilot project he's implemented using stock management platform, My Health Online, in nursing homes. Currently this has been implemented in several of the care homes he audits, and it has been a great success so far.

John also discussed the substantial scope for implementing online ordering systems for tools such as dressings within nursing homes.

CHALLENGES

Given his unique position, one challenge John regularly faces is being overworked. He has over 50 nursing homes under his care, and as the sole pharmacist on these accounts, this can be overwhelming. Due to his ability to work remotely, he is currently assisting immunisation teams in Indonesia, alongside his regular duties, and stresses the need for change in the near future.

Additionally, being on a team of one for so long, John also notes that he regularly feels like he's a lone voice and struggles to facilitate change within his department or gain buy-in for procedures that will make his job easier. However, his team is slowly beginning to grow, and change is on the horizon.

OUTCOMES

One of John's main achievements within his role is the ability to actively provide advice and assistance to nursing homes via email.

Whereas previously he would go into the homes, they can now reach him via email when they need to, allowing him to provide that extra level of support and confidence they need.

Additionally, John's work resulted in a wider adoption as he has also been advising the other Health Boards in Wales remotely and assisting Swansea in implementing My Health Online to their programmes.

NEXT STEPS

Looking to the future, John notes the need to ensure that adequate time and resources are allocated to enable innovation and facilitate innovative ideas long-term. Although it is now online, the audit he regularly provides to each nursing home consists of circa 200 questions and while it is only administered once a year, there is a significant resource implication in auditing a large number of nursing homes.

Additionally, John stresses that for innovation to be encouraged, one needs "thinking time" to come up with and promote an idea, as well as sufficient capacity to put said idea into play and to facilitate its development. This is currently very difficult to achieve and as such there is a risk that good ideas may fail to be exploited as they may not be conveyed to the right channels, which may result in demotivation and discouragement.

"[With COVID-19 restrictions in place] I can't go into the nursing homes and check stock. I could, but I don't think it's ethical at the moment to introduce somebody new. . . . I'm quite good at seeing a problem and thinking I've seen something over there that might help – enter My Health Online. We knew about My Health Online a little bit and I thought, I wonder if this could help the nursing homes. So, we tried it in one home, and it was a big success."

John Dicomidis

Case Study

Multidisciplinary working and digitisation to boost critical care provision

Marilize du Preez, Improvement and Transformation Lead and Clinical Specialist Physiotherapist, Hywel Dda University Health Board

BACKGROUND

Marilize du Preez is the Improvement and Transformation Lead at Hywel Dda University Health Board, and a clinical specialist physiotherapist in critical care.

Marilize is currently doing work around COVID-19 Pathways and "long COVID".

AIMS

During the first wave of COVID-19, Marilize – along with other therapy colleagues – went back into clinical practice to support critical care in the field hospitals.

They did a lot of upskilling to be able to work across different professions in critical care. For example, some physiotherapists upskilled to carry out traditional nursing tasks to increase nursing capacity. Meanwhile, critical care bank nurse staffing was adapted by broadening it to include allied health professionals.

As this occurred, occupational therapy appointments were rapidly transitioned from face-to-face home visits to remote consultations using Attend Anywhere. Therapists only did home visits if the patient anticipated or reported a problem. Marilize and her colleagues also created digital communications and video resources for patients on a range of topics. For example, the podiatry service created videos on how to clip toenails, which was identified as needed by patients during the pandemic. These were accessed on the internet through specific QR codes which linked to, for example, a bank of physiotherapy, or paediatric resources.

Another service transformation supported by the team was helping some of the workforce to move away from a 'staff-to-patient ratio' to a 'team-to-patient ratio'. This involved scanning the horizon and identifying the skillsets needed, as opposed to the physical staff needed. For example, some porters now have a split role between domestics and ward support.

The team also opened a command centre which centralised PPE, infection control, HR and workforce recruitment so that any query went to one point of contact. This made it a lot easier for staff working on the frontline.

CHALLENGES

Obvious challenges were social distancing and PPE, particularly when it came to reaching patients that were at-risk or shielding. Difficulties maintaining and accessing both respectively meant that many community services stopped. So to continue supporting patients, staff phoned them directly to triage, while offering advice to reduce risks for the most vulnerable and frail or elderly.

Another challenge was that some patients delayed reporting symptoms because they were frightened to go into a hospital. This meant that when they were admitted, they were very sick which impacted on health outcomes.

OUTCOMES

Working with multiple professions increased capacity to ensure quality and safety, particularly in the field hospitals. This also prevented the type of harm and infection that can come from putting people in an environment that is not designed to be a hospital, and maintained a positive patient experience.

This multi-disciplinary working also created resilience across the workforce by bringing people together that traditionally do not work with each other. Many quickly bonded through their shared experience and having to prioritise as a team.

The team learned the benefits that can come from doing things virtually.

Having Microsoft Teams ensured staff travelled considerably less and could be more productive with their time. The ability to link between systems also reduced time/effort and made everything more efficient.

Establishing new relationships was initially quite challenging but trust was developed quickly which is always a positive when implementing change programmes.

Initially the team felt frustrated that they had not been able to transform services as rapidly before the pandemic, especially in terms of IT, virtual communications and use of Attend Anywhere.

The innovative practices created a feeling of pride, as did the ability to pull together as a new team with colleagues keen to learn different skills, and use their abilities in new ways.

There was less bureaucracy which made operational or frontline staff feel a lot more empowered. Prior to the pandemic, if a team needed to take on an additional task, it required approvals from various clinical decision groups, a governance group and senior management, instead of a single approval and operational teams being allowed to wrap a competency framework around it, train people and implement.

Virtual consultations are being adopted long-term, and the learning so far is being built in to the clinical strategy and future guidance, e.g. in terms of building hospitals, streamlining or splitting sites, and workforce design.

Another sustainable change would be to update health policies, allowing them to become greener and economical through reduced travel and increased use of technology as well as previous travel budgets being invested elsewhere in health.

To take the innovation forward, the team believes that looking at the wider workforce through a team approach lens, mapping/scoping it, and working out how everyone could integrate better and learn from each other could improve patient outcomes.

In addition, some of the bureaucracy that is not needed in the system and that adds no value or quality to the overall outcome or solution being sought should be eliminated.

Reviewing patient experience and outcome evidence and data from field hospitals – specifically relating to those who would normally have been discharged home (rather than sending them to a step-down facility which subsequently improved their mobility, increased their strength/resilience and their functional outcomes) – could be of significant benefit and potentially reduce packages of care by keeping patients in a different setting for longer.

NEXT STEPS

Retaining a multi-disciplinary approach is vital. Having a multi-skilled sustainable workforce that is not just reliant on one profession proved to be of significant value – it takes a lot more than one type of role to make an intensive/critical care unit run effectively.

The team is now looking to change the approach to what is needed for the patient, regardless of whether they are in critical care, a field hospital, or a care home. They want to focus on asking what is needed around a patient, instead of asking what workforce is needed.

Task-based and skill-based approaches using the delegation framework to build up a sustainable workforce would be a positive next step, and Marilize and the team are keen to scale-up and spread their innovative practices across other parts of the Health Board workforce.

> " . . . [T]here's value in exploring different types of critical care workforce that are fundamental to critical care . . . to actually develop a sustainable workforce that's not just reliant on one profession . . . looking through a team lens, what is needed for patients regardless of the setting, and use a delegation framework to build up a sustainable workforce."
>
> *Marilize du Preez*

Case Study

Accelerating the use of technology across primary care, secondary care, and local authority during the COVID-19 pandemic

Michelle Dunning, Primary Care Service Manager, Hywel Dda University Health Board

BACKGROUND

Michelle Dunning is a Primary Care Service Manager working in Hywel Dda University Health Board.

Michelle works in North Ceredigion, alongside 7 GP practices, the county team in the Health Board and the local authority.

Michelle's role is administrative, and she is mainly responsible for ensuring that the General Medical Services (GMS) contract is adhered to.

Michelle also assists with helping the locality develop services and is very much a catalyst for integrated work between GP practices and other agencies in the locality.

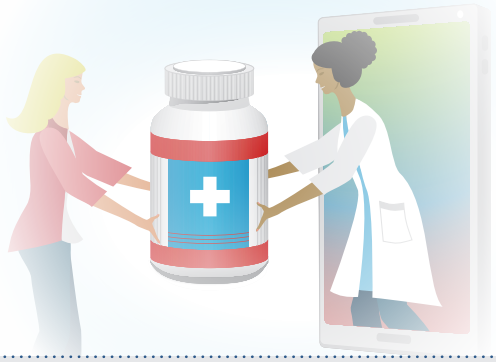
AIMS

COVID-19 significantly increased the need for primary care services to be provided digitally and the process of taking their services online was accelerated at a fast pace to ensure patients were cared for in a timely manner.

The first change introduced was the implementation of eConsult. The patient submits an online form (an eConsult) to the practice. The practice reviews the eConsult and decides on the right care for the individual. This reduced the need for patients to attend the surgery.

This was a great success and favoured by patients.

GPs also began to implement video and telephone consultations which previously had been met with resistance.



CHALLENGES

The biggest challenge the practice team faced was when they attempted to do virtual ward rounds within care homes. Some Wi-Fi systems within these facilities did not have sufficient strength to allow for virtual visits, and in many cases the team had to encourage these premises to upgrade their Wi-Fi to allow for virtual care. To combat this challenge, iPads were delivered to many of the privately run care homes to enable virtual support and demonstrate the benefit of having a virtual ward.

Working arrangements and approaches required significant changes in the early days of the pandemic. The team set up a regular morning call with relevant parties such as the site manager at Bronglais General Hospital, the local authority, a district nursing team member, a primary care representative, therapies, etc. to ensure each area was able to provide a strong overview of what challenges they faced that day, with regards to patient flow, bed availability, and workforce. This meeting was set up to enable collaborative working at the onset of the pandemic; however, it will continue as the daily support has been greatly valued.

The COVID-19 pandemic served as an enabler for change rather than a barrier. Due to the fast movement and outbreak of the disease, many people did not have time to consider other options, and, in some cases, colleagues motivated each other to find positive ways of moving forward rather than negatively responding to change.

OUTCOMES

Michelle and team were pleased with how care homes responded quickly to the idea of virtual wards and getting their technology upgraded to allow for virtual care.

Furthermore, accelerating the use of technology across primary care, secondary care and the local authority encouraged collaborative working amongst the wider team.

For many practices in rural areas, using technology has allowed staff to connect with each other on a regular basis without having to travel.

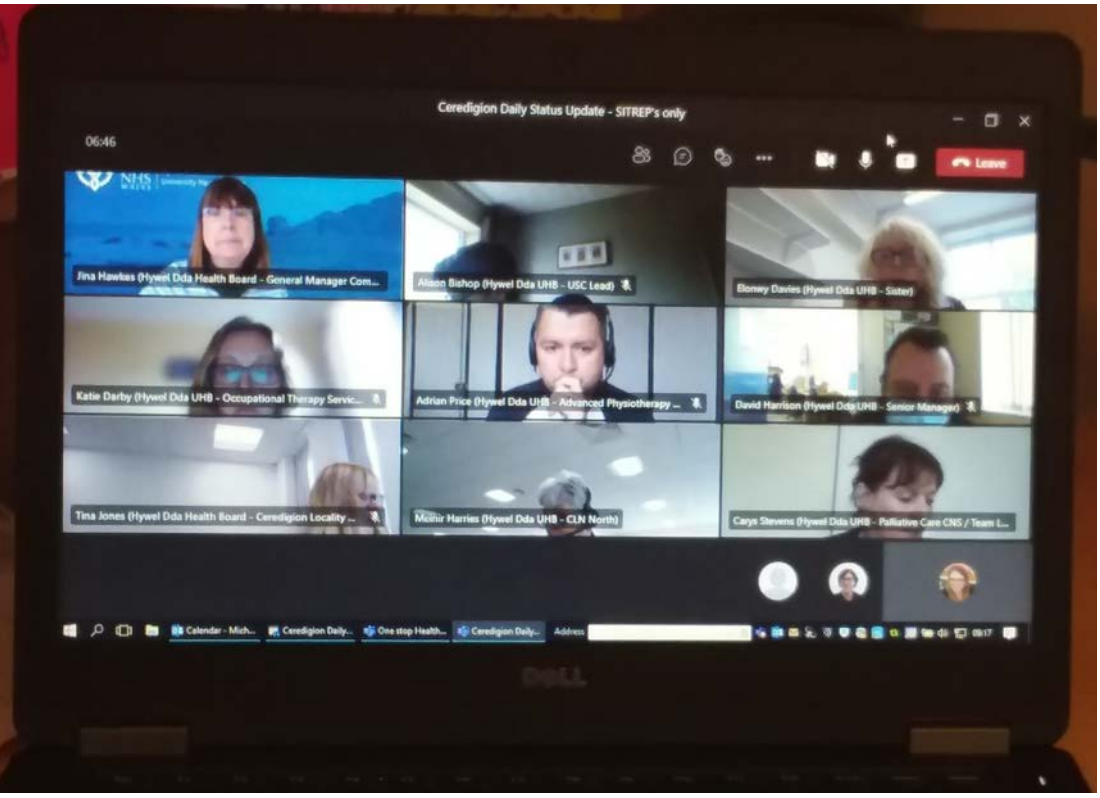
The use of virtual wards reduced the number of face-to-face contacts throughout the pandemic thus eliminating the risk of spreading COVID-19 amongst both patients and the health care professionals.

NEXT STEPS

Upon seeing the success of their regular virtual call and its ability to allow teams to work closely with the local authority, this service change is something they will continue with post COVID-19. However, they will be looking at ways to avoid screen fatigue and ensure digital burnout does not occur within the team using this method of engaging patients.

In relation to virtual services, Michelle's cluster has been developing the use of technology for specific conditions or service delivery for some time and they will continue to explore further within their locality and determine how things can be done differently to help decrease travel times and distances for both patients and practitioners.

The pandemic has caused many to realise that people can work effectively at home and that not everybody has to be physically in their place of work 100% of the time to be efficient or undertake their professional responsibilities and daily tasks effectively.



"Accelerating the use of technology across primary care, secondary care, and local authority has actually encouraged collaborative working."

Michelle Dunning

Case Study

Enhancing Office 365 to facilitate communication and productivity during the COVID-19 pandemic

Gerald Evans, Software Developer, Hywel Dda University Health Board

BACKGROUND

Gerald Evans works as a Software Developer for the University Health Board.

He has been an employee of the Health Board for over a decade and started off in an entry level role helping with first line support.

Gerald's role generally includes the development of bespoke customisations for Microsoft products, the critical care system, and some of the legacy interfaces.

AIMS

Gerald notes that at the start of the pandemic, the development team were tasked with coming up with customised light and flexible software solutions.

Just prior to the first wave of the pandemic, the team had started to work with Office 365, therefore, they were able to adapt some of their coding light solutions building on Office365 and customise them accordingly to meet the needs of the team. The team started with the development, followed by the wrappers, in order to avoid hindering the development's speed. The team also engaged with external consultants where available, for specific aspects of the package development and deployment.

Gerald highlights that scope for people to embrace technological changes and innovations was significantly increased and his team noted a positive movement away from outdated Excel spreadsheet-based approaches towards small software packages that can offer more tailored and effective solutions.

CHALLENGES

Gerald highlighted some recurrent challenges that he and his team faced, such as the recurrent issue of resistance and opposition to new innovations, especially when it comes to technology.

He mentions that in the health sector especially, many people are "creatures of habit" and as such, in the past there was substantial resistance to change: once staff became well trained in a new process, they were happy to adopt and use it and were likely to form a mistrust to anything else.

Some delays were also caused by the need to wait for approvals at a national level.

OUTCOMES

Gerald and his team were quick to embrace Office 365 at the start of the pandemic and implemented the power apps suite with Microsoft. As the 365 software was generally web based, they were able to roll out their developments much quicker and were able to offer people flexibility to customise things and have bespoke solutions.

In the case of the 365 rollout, Gerald highlights that the services drove solutions as opposed to the software, and the availability of quickly developed light versions of software was a great benefit.

The work conducted by the team played a significant role in allowing the wider teams to cooperate within social distancing measures and to work remotely, enabling safeguarding of staff, digitisation of certain services, and the completion of core administrative tasks such as logging, archiving and the general management of the COVID-19 contact centre.

The impact that the work of Gerald and team is making to the running of services is visible to them as they engage directly with the end users and service users, and it is making a fundamental change to their daily routines. The provision of these solutions is contributing to helps users reduce their stress and worries.

Reflecting on lessons learned, Gerald notes that often in their line of work people tend to "over-analyse" when evaluating whether to implement a change, and tend to be "their own worst enemy when it comes to making changes"; however, when there is a will to get a solution or a project over the line, the feeling of delivering something useful and helpful to users puts a "little smile on your face when you drive home".

NEXT STEPS

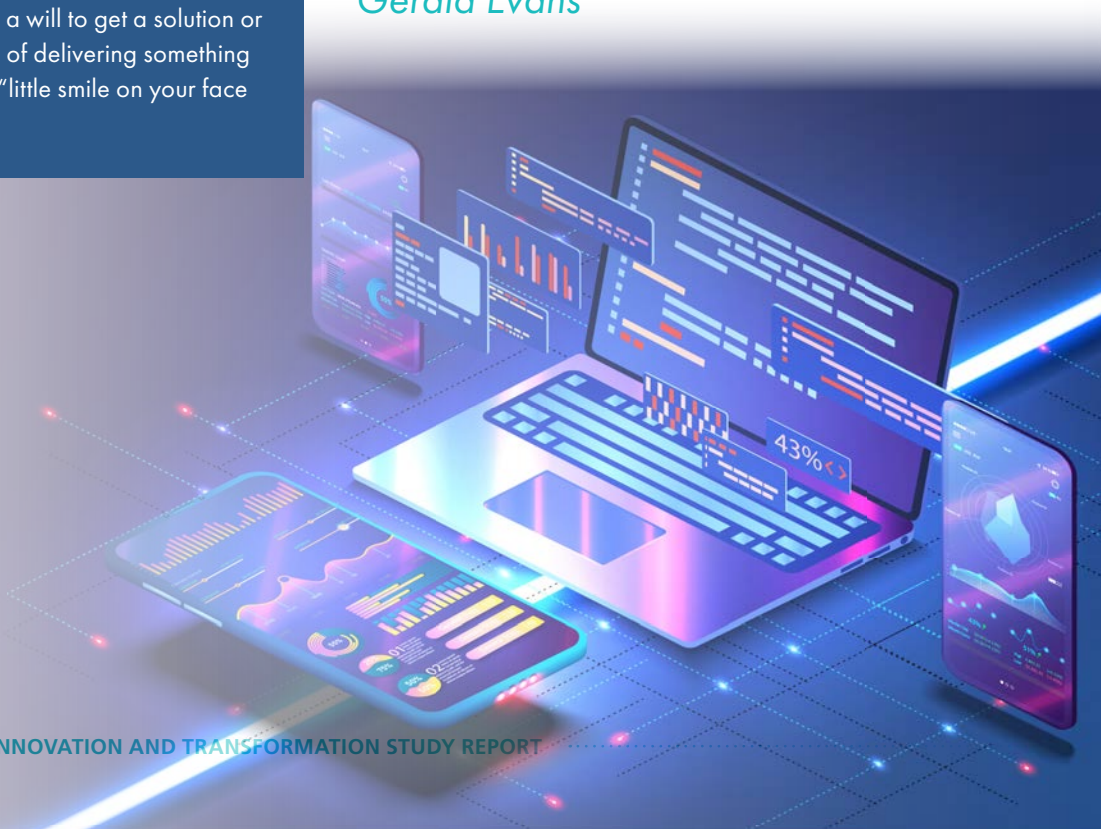
Moving forward, Gerald and his team will be focusing on turning some of the latest solutions and "knee jerk developments" into more robust, solid solutions.

They want to capitalise on the momentum behind the increased adoption of the solutions they are developing to make sure that the uptake can be maximised through encouraging the sharing of the positive experiences of the solution. Increase of speed of adoption can be done through workshops and demonstrations, followed by "task and finish groups" to evaluate the development of expanded solutions and support.

Additionally, they want to work on rolling out a software that allows the sharing of information, nationally, amongst the Health Boards.

"I think what interested me about this sort of interview or request was, we've done so much development for COVID-19 and made so many significant changes to certain services. It would be nice to make sure that we don't miss the trick and we do follow-up and get these things implemented and continue with the good work."

Gerald Evans



Case Study

Advocating for an increase in communication and awareness for COVID-19 patients and their families

Dr Jo Furnival-Doran, Physiotherapist, Hywel Dda University Health Board

BACKGROUND

Jo Furnival-Doran is a Physiotherapist based in the Hywel Dda University Health Board. At present, Jo has a two-pronged post – she is partially involved in a Macmillan Cancer Rehabilitation project, and she also works in lymphoedema.

The project Jo is currently working on with Macmillan started roughly two years ago and is due to finish at the end of March. The project is focused on cancer rehabilitation and looks at innovations in practice and ways of embedding rehabilitation services into current service. Through this project Jo hopes to assist in enabling the formation of a rehab service.

On the other side of her job, Jo has been working as a Lymphoedema clinic lead for Hywel Dda (based in Pembrokeshire) for quite a few years and currently performs very clinically driven work with cancer patients within the lymphoedema world, with links to Lymphoedema Network Wales.

AIMS

After she and her family members contracted COVID-19 in the early days of the pandemic, Jo began thinking about the differences in outcomes and how people feel both emotionally and physically, as they recover from a traumatic illness.

Jo reflected, from a clinical point of view, on the challenges and lack of support faced by community teams when delivering care at home, and on whether change was required when considering extensive physical presence of AHP workforce in patients' homes, or whether simple changes to the routine of the visits would greatly reduce interaction with patients whilst still delivering the required service, in turn lowering anxiety in AHP workforce caused by the risk of contagion.

CHALLENGES

A personal challenge Jo faced while her and her family suffered from acute COVID-19 (April-June 2020) was the lack of support for community teams throughout the beginning of the pandemic. Jo noted that many health care professionals were very fearful of stepping into a COVID-19-positive household and while she knew the resources to call for support, she was aware that many of her colleagues and other COVID-19 patients did not. Upon returning to work, Jo raised this topic with her managers and highlighted the need for an increase in communication, awareness and guidance.

While trying to promote change and advocating that additional support be provided to Healthcare professionals within her Health Board, Jo realised the difficulties involved in effectively feeding her experiences and suggestions back, which called for the need to have more effective communication channels during the initial stages of the pandemic (the dynamic improved in the subsequent months).

When reflecting on the treatment of her father-in-law, who was in very poor health since March 2020 before testing positive for COVID-19, Jo also noted that there were communication issues at the beginning between her family and the GP, prompting unnecessary stress within their household.

OUTCOMES

While trying to advocate the importance of additional support being given to COVID-19 patients, Jo was given the opportunity to complete a patient experience story which she believes allowed her to reflect and hopefully inform future service changes within the Health Board.

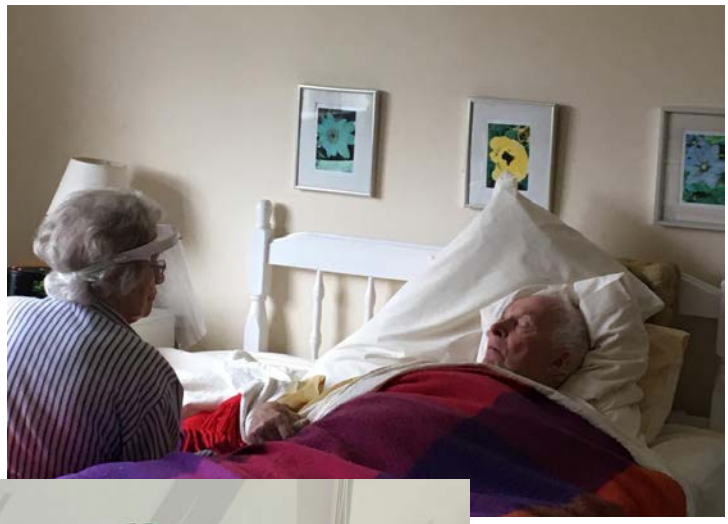
Through the experience of dealing with the "Blue Team" of the hospital directly for her father in law, Jo had the opportunity to appreciate the quality and level of the hospital facilities, as well as the support, guidance from, and regular interaction with the staff who guided them through his treatment, timelines, therapy services, occupational therapy, and the delivery and use of equipment within the home.

Jo's sharing of the experience may serve as a trigger to evaluate the services and help inform future service changes within the Health Board, to potentially clarifying and simplifying the pathways and the development and nurturing of more open communication channels between hospital, GP, patients as well as their families, when dealing with complex care scenarios that would greatly benefit from people's experiences in such difficult situations.

NEXT STEPS

On a personal level Jo mentions that she will also be taking time to reflect and positively embrace the situation.

As a result of the personal experience and reflections, Jo is now looking at developing a COVID-19-related respiratory breathing activity, and she is currently in discussion with a respiratory specialist physio colleague based in Glangwili to develop an audio app to support people in getting a bit more active to aid recovery. As an offspring from these discussions, Jo will also be looking to evaluate a similar pathway for patients who have had chemotherapy.



"As well as feeling immense support and gratitude for the teams that were involved and enabled my father-in-law to stay at home [during his COVID-19 treatment], I also felt that really there needed to be more input. There needs to be better streams of communication and awareness [for patients and their families]."

Jo Furnival-Doran

Case Study

Investigating the use of Convalescent Plasma in the treatment of COVID-19

Chloe George, Head of Blood Component Development and Lead Scientist for Transfusion Medicine, Welsh Blood Service

BACKGROUND

Chloe George is the Head of Blood Component Development and the Lead Scientist for Transfusion Medicine at the Welsh Blood Service. Chloe's role is predominantly a scientific role where she leads in projects and new developments with blood components.

Chloe works at the headquarters of the Welsh Blood Service outside of Cardiff. She runs the Blood Components Development Laboratory, which is a scientific department that uses blood donations from across Wales to look at ways of developing and manufacturing new blood components.

AIMS

Early in the pandemic, Chloe and her team were approached by Welsh Government to investigate a new component called Convalescent Plasma. Convalescent Plasma is plasma taken from blood donors who have recently recovered from an infectious disease such as COVID-19.

With the aim of treating hospitalised COVID-19 patients, Chloe's team were asked to assist in scoping out a programme that would bleed people who were convalescing from COVID-19 to enable the supply of Convalescent Plasma.

CHALLENGES

One of the main challenges Chloe's team faced when developing this programme was the increasing strain in terms of staffing and availability. They also struggled with the public's ability to access collection centres and realised many of their operational delivery models need to be changed.

As this was a new programme and ultimately a new disease, the team struggled with setting up a whole new stream of donors that they had not accessed before for Convalescent Plasma. They also found delivering new developments in a very short period of time very challenging. Chloe notes that setting up a programme such as this would have usually taken a year and a half to two years, however, the constraints of the pandemic meant that they were only given few months to deliver results.

One of the most challenging areas of this project was that, since the component did not have a proven efficacy for treating COVID-19 but was worthwhile as a potential treatment option to be evaluated, at the outset Chloe struggled to get buy-in and resources from NHS given the general resource and time constraints on staff caused by the pandemic.

OUTCOMES

While the set-up of this programme was incredibly stressful, Chloe states that the team saw incredible collaboration across the NHS, different Health Boards, and different organisations within NHS Wales. Her project involved collaborations with the Community Efficiency Centre in Cardiff, Public Health Wales, Welsh Government, and the wider industry, and Chloe notes that the way in which everyone was coming together to meet a common goal was inspiring.

Technology wise, Chloe notes that her team, along with many of their partners and collaborators, used video conferencing to connect with each other. Additionally, she was also able to bring in some technology, called Plasmapheresis, for bleeding donors in different ways.

Another achievement Chloe mentions is the increase in the speed at which things moved during the pandemic and how agile the NHS has been able to be in relation to her project. She mentions that things have happened far quicker than they would have pre-pandemic and that shows the commitment of everyone that she worked with to try to achieve a common goal.

The team reached far and wide to experts across the world to discuss their experiences and how they had set up similar programmes. There was an amazing feeling of a diverse multidisciplinary professional collaboration with the common goal of *"making something happen quickly and to try and prevent duplication of effort"*.

NEXT STEPS

Regarding Chloe's Convalescent Plasma project, the next steps were to depend heavily on the results of the clinical trial.

The trials for Convalescent Plasma have since reported (RECOVERY and REMAP-CAP) and efficacy of CP was not shown. As a result Chloe's team are no longer bleeding donors for this product. However, they will capitalise on this positive experience of a highly collaborative project to explore new opportunities for further collaboration.

"Things have happened far quicker than they ever would have in a non-pandemic time and [this shows] just how hard and committed everybody that I've worked with on my project has been to try to achieve a common goal."

Chloe George

Case Study

Clinical engineering innovation for NHS service delivery improvements (rehabilitation engineering)

Professor Colin Gibson, Head of Rehabilitation Engineering, Artificial Limb and Appliance Service (ALAS), Cardiff and Vale University Health Board

BACKGROUND

This project was led by Professor Colin Gibson, Consultant Clinical Engineer and Head of Rehabilitation Engineering at the Artificial Limb and Appliance Service (ALAS) at Cardiff and Vale University Health Board. Colin works with a team of approximately 45 scientists, practitioners and associates/affiliates.

As a group lead for clinical engineering in Wales, Colin and his multi-disciplinary team are heavily engaged in the in-house design and manufacture of novel and innovative solutions for NHS Wales service delivery. The team was also involved in advising on procurement of relevant equipment that met the rigorous standards for use in NHS Wales.

CHALLENGES

The pressure of the COVID-19 pandemic was a significant challenge, in terms of the need for equipment such as ventilators which were in high demand. The team was able to adapt quickly, however, by removing barriers to allow service innovation and transformation to be implemented more efficiently.

Uncertainty during the constantly evolving pandemic was also a challenge. The team was inundated with a high volume of requests for new or urgent equipment to support NHS Wales services, when usually this equipment must be fully approved, quality assured and then commissioned ahead of deployment.

As NHS Wales services rushed to procure additional ventilators, suppliers ran out of products and procurement teams had to source from China and other countries where products were below the standards required for use in NHS Wales. This could be attributed to the fact that procurement of equipment was undertaken by NHS Wales personnel who did not have the relevant training, expertise and experience to recognise the regulatory standards required of equipment used in critical care settings. As soon as this challenge was realised, the clinical engineering team was increasingly used to advise on regulatory requirements and support the increased demand.

AIMS

During the first wave of the COVID-19 pandemic, the team witnessed a major impact on medium to long term rehabilitation of patients who had first-hand experience of, or were indirectly impacted by COVID-19. It was during this phase that much of the early innovation took place as it was necessary to identify stresses in service delivery and lack of medical equipment in acute areas such as critical care.

The overall aims for Colin, his colleagues and the clinical engineering team were to match engineering solutions to clinical needs effectively and efficiently and to meet the rapidly increasing demands of NHS Wales patients with ever diminishing resources (in terms of medicine and medical devices).

The team acted quickly and worked to navigate the normal barriers to implementing innovation in NHS Wales, recognising they were on a steep learning curve operating under COVID-19 pandemic conditions. They showed themselves to be very efficient in responding to the circumstances by bringing together the skills and expertise of clinical engineers from across the NHS in Wales, the UK and beyond. Through this network the team aimed to swiftly consolidate problems associated with NHS Wales service provision and present solutions which streamlined the upskilling process, drawing upon best practice from partners across the UK.

This case study shows that *"we can do things differently in NHS Wales successfully"*. It also shows that when previous concerns such as budgets and requirements to demonstrate need/value through lengthy business cases are removed due to necessity, it does not impede implementation of real progress when it comes to deploying innovations during a period of high pressure.

The team was pleasantly surprised that by removing aspects of bureaucracy or process, change and innovation could be implemented and delivered often to time and to cost. This demonstrates that NHS Wales can do things substantially differently by taking a streamlined approach.

Another key aim was to begin sharing information on problems and solutions as quickly as possible in order to deal with the increase in demand for equipment such as ventilators.

OUTCOMES

The team effectively congregated a UK-wide network of clinical engineers to share problems and solutions which assimilated into practice within very short timeframes. The skills, knowledge and expertise of the clinical engineering team – particularly in advising on clinically relevant and regulatory standards on equipment procured by NHS Wales to meet the ever-growing demand – was well-received by colleagues and recognised as a step change in the way that clinical engineering teams are viewed and valued in NHS Wales.

This case shows the ability within NHS Wales to react more quickly to problems in the future by engaging with national networks to innovatively understand, consolidate and assimilate solutions to current and developing problems; it is an *"exemplar of empowering of those at the 'sharp end' of clinical service delivery to take more rapid, efficient, effective and inclusive decisions"*.

This case also resulted in improved shared learning and experiences, through working together in a true multi-disciplinary approach to deal with challenges and provide solutions to emerging problems. It gave personnel the opportunity to make a rapid impact while also getting recognition for positive outcomes. This further supports the evidence that greater autonomy should be given to NHS Wales staff and their opinions should be heard.

NEXT STEPS

We must recognise that there is a more efficient method of working in NHS Wales which gives more responsibility to all disciplines. Learnings from this case need to be consolidated and disseminated so that solutions to challenges in NHS Wales, whether under extreme conditions or not, can translate into everyday practice and have a long-lasting effect.

It is clear through this case that there is a need and desire to think differently to deliver high-quality services within the required governance and regulatory frameworks across NHS Wales, but without the inertia of bureaucratic management structures.

Trusting colleagues with the relevant skills, knowledge and expertise to deliver services through multi-disciplinary approaches, using digital communications platforms to support teams, has been significant in making innovation happen. In order to take this forward, it is widely recognised that NHS Wales needs to enable all employees to have a voice on how to do things better.

The clinical innovation team's work shows the new means and methods to provide effective, efficient and high standard/quality service provision in NHS Wales, and have identified a less restrictive way of delivering it. Strides now need to be taken to *"make sure that they [NHS Wales] include all the relevant professional groups"*.

"I think the organisation has learned that it needs to take much more of a multidisciplinary approach to things."

Colin Gibson

Case Study

Delivering quality child and adolescent mental health services during the COVID-19 pandemic

Professor Euan Hails, Consultant Nurse in Specialist Child and Adolescent Mental Health Services, Aneurin Bevan University Health Board

BACKGROUND

Euan Hails works at the Aneurin Bevan University Health Board (ABUHB) as a Consultant Nurse in Specialist Child and Adolescent Mental Health Services (CAMHS). He is also a Visiting Professor at the University of South Wales.

Euan works in a child and adolescent mental health services department, part of the Family and Therapies division at ABUHB. His department offers all services to young people under the age of 18 with mild to severe mental health problems.

The department has also been linked with other areas at ABUHB that offer services to people with more moderate problems like Primary Care.

CHALLENGES

The main issue Euan and his team faced was increased sickness in staff and the people they were attempting to work with. Additionally, they were faced with a lack of resources and, as the pandemic grew, there was a significant decrease in available beds for emergency CAMH services.

Alongside the noted challenges, Euan also highlights fatigue and exhaustion as being a major challenge the team faced due to their increased service hours.

AIMS

When the pandemic hit, Euan and his team quickly realised the impact the pandemic would likely have on the mental health of children and adolescents across the UK.

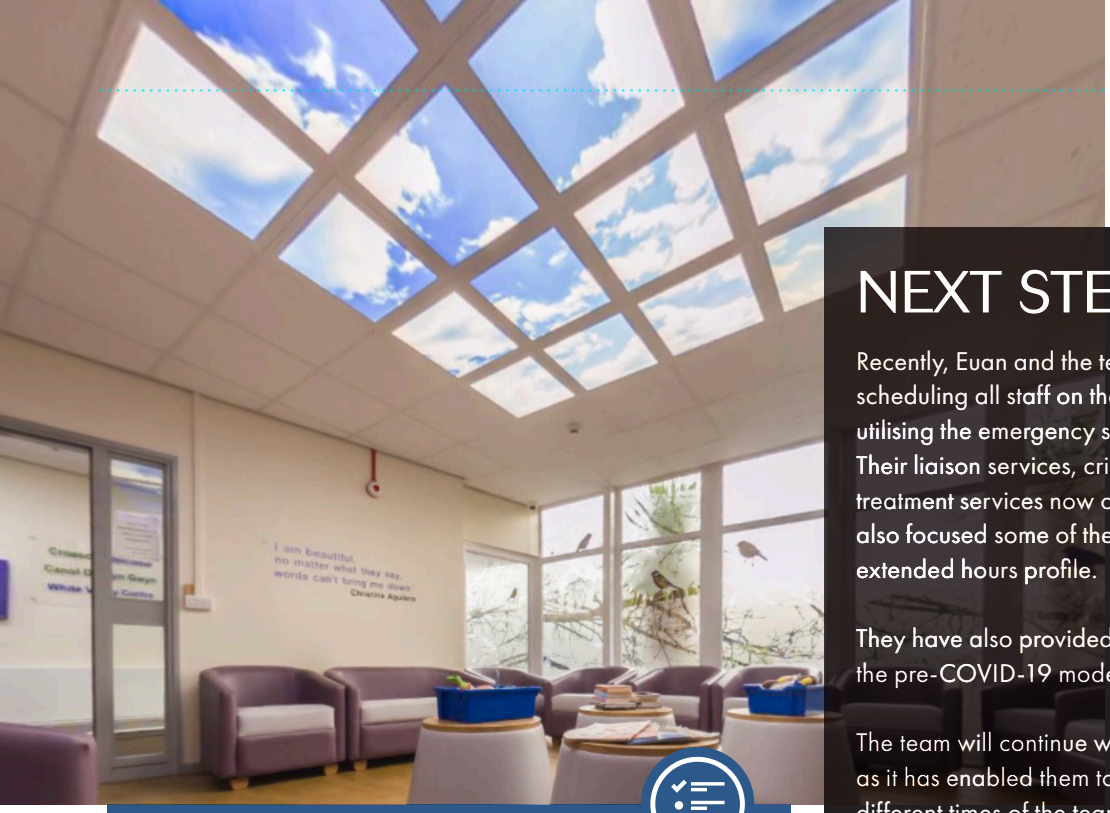
To help combat this impact, they quickly increased their services from a nine to five weekday model with a liaison emergency service on a Saturday and Sunday, to a 24/7 model. To help facilitate this change, they brought in all available staff, including members from their extended CAMH services from nursing, occupational therapy, etc.

Euan and his team also extended the helpline, which was initially used as a professional based helpline.

The team extended this line to 24 hours a day and opened it up to relatives, carers, parents, etc., of young people who were within their services so they could get immediate contact with clinicians if the need were to arise.

"I think we've learned that: we don't have to all be in the office; we don't have to work between 9 to 5; we can consider and develop innovation quickly; we can support and adopt innovation quickly; we are able to understand the new digital platforms."

Euan Hails



OUTCOMES

The first achievement Euan highlighted was the glowing feedback his team received from parents, relatives, carers and even the Children's Commissioner for Wales who praised the innovative service on the Welsh news.

While the pandemic had negative effects on many, Euan also notes that it had a very positive effect on their service offering and allowed them to provide a much more focused and targeted service to the population that they were working with. In addition, the data accumulated and analysed during the past 15 months has now allowed them to streamline the 'on call' hours.

Additionally, he notes that they are now a much more cohesive CAMHS unit, and the pandemic has made it a lot easier for people to work together. The unit now regularly collaborates with their partners such as social services, educators, etc., and has increased their communication with school health nurses and health visitors which has helped to expand their service offering and reach a slightly different target population, with a more flexible consumption model.

When it comes to offering physical psychological therapies, Euan notes that the overarching model is still one-to-one appointments. However, during the pandemic, the team rolled out the NHS's Attend Anywhere platform across their service so they could offer new assessments and complete ongoing work and psychological work online while adhering to COVID-19 guidance.

Euan notes that this platform has had a great impact on saving funds and has been very positively received by patients and their families.

NEXT STEPS

Recently, Euan and the team had moved away from scheduling all staff on the 24/7 rotas and instead they are utilising the emergency services to assist in providing support. Their liaison services, crisis services, and intensive support and treatment services now offer extended hours and they have also focused some of their senior therapeutic staff onto an extended hours profile.

They have also provided their staff with the ability to return to the pre-COVID-19 model, should they wish to do so.

The team will continue with extended hours, perhaps not 24/7, as it has enabled them to offer therapeutic interventions at different times of the team and to an extent, it's lengthened the delivery day for many, opening additional support for those that really need it, whilst streamlining the services.

In the future, Euan's team and other CAMHS teams, as well as other NHS Wales colleagues, will be reviewing their most current services to develop an even closer relationship in order to share innovations and developments. Additional engagement is also being drawn with other NHS Wales colleagues such as senior nurses, to discuss innovations, knowledge and training sharing, as well as contingency measures.

"In a way, [the pandemic] has broadened our understanding of what we can deliver as a mental health service, because most CAMH services will be face-to-face, one to one, unless you're delivering a group and that that will be obviously in situ."

"We've now realised that we can deliver quite a lot of our service, which doesn't come at the detriment of the core service that we're delivering, either digitally or remotely or . . . using other formats."

Euan Hails

Case Study

COVID-19 CPAP ventilator

Prof. Chris Hopkins, Consultant Clinical Scientist and Head of Clinical Engineering, Hywel Dda University Health Board

BACKGROUND

Chris Hopkins is a Consultant Clinical Scientist and Head of Clinical Engineering in Hywel Dda University Health Board.

Chris' department has responsibility across four of the acute sites for just over twenty eight thousand medical devices, ranging from the more complex set of devices like anaesthetic machines and critical care ventilators, all the way down to the simpler manual blood pressure devices.

The team provides a complete lifecycle management, from procurement, through to commissioning checks, logging and tracking, regular maintenance and repairs, and provide consultancy services for industry partners around regulations, supporting them with processes such as CE Marking. They also have a medical device training function for clinical end user training as well as training on all of these devices.

The team has also recently moved more across into the research arena and are deeply involved in app development and new novel medical device development.

"I think in the NHS some of the problems in the past would have been individual organisations [being sometimes] quite protective over their innovations and the new ideas . . . "

AIMS

For this innovation Chris worked with clinical engineering colleagues and Dr Rhys Thomas, Senior Consultant at Glangwili Hospital in Carmarthen. They were also supported by South Wales manufacturer CR Clarke & Co.

The team responded to concerns over the lack of continuous airway pressure (CPAP) ventilators – due to increased demand caused by the pandemic – across the UK. Taking on the challenge, they brought medical and technical expertise together to invent a simpler but equally effective device that can be used in and outside of intensive care units (ICU).

Chris worked closely with Dr Thomas on the design and prototyping, as well as regulatory aspects to make sure the device was safe and met the framework in a timely manner. Dr Thomas, having a wealth of experience of working in resuscitation, also consulted with doctors in Italy as the virus rapidly spread across the globe.

In just three days, the team created a machine which helps patients breathe and cleans viral particles from air in a room, ensuring that patients are only supplied with purified air. The ventilator does not replace ICU ventilators but is designed to be used before patients require such intensive care treatment, and prevent them needing to enter the ICU.

CR Clarke & Co. took the design/production forward and completed it at an accelerated rate.

This rapid development is, the team believes, a testament to the power of using local expertise, gaining the confidence of Welsh Government, and their own commitment. Together this enabled production to go ahead.

This also demonstrates that innovation can happen at pace in Wales, even when faced with incomparable challenges.

"I think [now] the mindset has changed, things have changed enormously: we've moved away from that "protectionism". . . . [P]eople are far more collaborative around new ideas and innovations, and there is very much a sharing approach.
I think that will mature over time."
Chris Hopkins

CHALLENGES

Funding is always a challenge in development of new technology, but the team found that the finance department was supportive and recognised the potential from the business case presented.

The rapid pace of product development was quite political and there were technical aspects of the device that could have caused problems. This meant that managing the expectations of Welsh Government and clinical consultants was initially a challenge.

Assurance that the device had gone through appropriate regulatory checks and essential safety checks slowed development at times, which caused frustration. Mitigating these requirements consistently was critical to its overall success.

OUTCOMES

Developing new initiatives, services and products that produce better health outcomes for everyone – based on learning and continuous improvement – is very important.

Due to regulatory requirements, developing and taking a medical device to full commercial development can be quite timely and costly for a company. Many industry partners have not entered into this arena for a number of reasons – e.g. not enough experience or past performance; difficulties with quality marking process. But this innovation has shown how Health Boards can support local industry partners in Wales, and the Welsh circular economy.

The team learned how to deliver quality and safety with less bureaucracy and more efficient decision making and approval processes. Everything happened a lot quicker during the pandemic, which they believe needs to be maintained going forward. Sometimes it can take months to procure medical equipment.

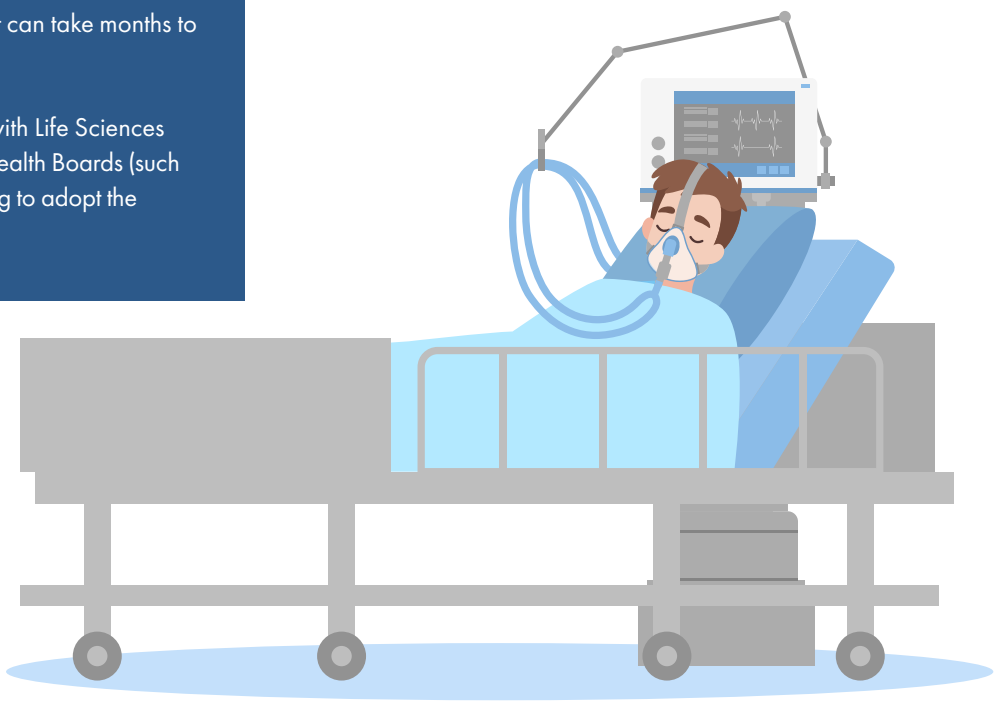
This innovation also strengthened links with Life Sciences Hub Wales, and others in NHS Wales Health Boards (such as Cardiff and Vale) who are now looking to adopt the ventilator.

NEXT STEPS

The CPAP ventilator has been approved by regulators and undergone clinical trials and patient evaluation which are looking extremely promising.

It is hoped the adoption and spread of this innovation will continue throughout Wales, the UK and globally. The team are continuing to engage with different stakeholders and communicate the innovation through organisations such as the Bevan Commission.

They are also working with the Bevan Commission's exemplar programme to continue developing research, improvements and innovation through more regional approaches.



Case Study

The Advanced Digital Physical Engineering Hub

Jason Ingham, Area Maxillofacial and Dental Laboratory, Prince Charles Hospital, Cwm Taf Morgannwg University Health Board

BACKGROUND

Jason Ingham runs the Dental and Maxillofacial laboratory within Prince Charles Hospital. The lab constructs orthodontic appliances and services the area at both community and NHS hospital levels. The laboratory also does restorative work for community cases, also focusing on more complex cases, such as oncology patients, that cannot be adequately treated by a dentist, for example.

Traditionally, their service has been predominantly "analog", whereby every stage of their traditional workflow has been based on physical steps (e.g. take an impression of a patient's jaw, cast, use of wax, or acrylics). Over the last seven years, the team has been trying to move into a more digital workflow, wherever possible, to streamline the service.

AIMS

When the pandemic hit, all the core and routine work at the laboratory stopped, including the dentistry and elective surgical procedures. The team evaluated their collective skill set and capabilities; they also evaluated how such skills and capabilities could be augmented through the use of technological tools available in the market, and how different groups in other countries were contributing to the development of solutions to help tackle clinical practice during the pandemic.

The team started with the development and rapid production initially of door handles and free door openers for different designs in the Hospital. These initial successful projects rapidly escalated as their offer of services and further products developed gained the attention of the Innovation team leader for the Hospital.

A project was therefore set up rapidly to obtain funding for a range of equipment and materials the team had identified as potentially useful to enable the development of more products for an expanding range of clinical settings and the needs of Paediatrics, Clinical Engineering, Respiratory, etc., components for out of service infusion pumps; valves for CPR machines emergency repairs. The team was then put in touch with the University of South Wales and worked with them on a range of needle probes and laser probes. In October, they also received a Welsh Government grant as part of a group to produce rapid tests.

In setting up such a model the team initially aimed at improving the sustainability of the Hospital activities and the resilience of the supply chains, by providing in-house capabilities to design and develop a range of tools, the supply of which was proving to be difficult during emergency times. The team considered the existing fragmented situation within an hospital setting, whereby there may be a number of different teams pursuing similar work (for example, using 3D equipment and new digital equipment) but working in silos, which severely limits the ability to learn from each other. The ultimate vision therefore became the creation and enabling of a collaborative work and learning space and ecosystem by providing the right environment and capabilities for diverse stakeholders to access, use, learn and improve.

CHALLENGES

When starting with this project, Jason and team had to consider: the need for more comprehensive standards to work to; the lack of formal design education within the team – this was overcome early on partially through external engineers from outside companies, and the training and upskilling they did on tools and software for the team; lack of communication between different departments to raise awareness.

Having external third parties working on NHS matters was something the team required further reassurances on, as it would fall within a "grey area", which, whilst acceptable during a crisis, would require better framing for a long term operation. Jason also identified a number of significant challenges that need to be overcome in order for the vision to be achieved going forward.

- Staff time and manpower: the team will inevitably have to go back to their normal activities as the restrictions and the pandemic improve.
- Bureaucracy and authorisations by management: in order for this project to be formally established and to receive funding as a formal entity within the Hospital, the evidence of savings enabled by the project is not in itself enough without a formal structure.

OUTCOMES

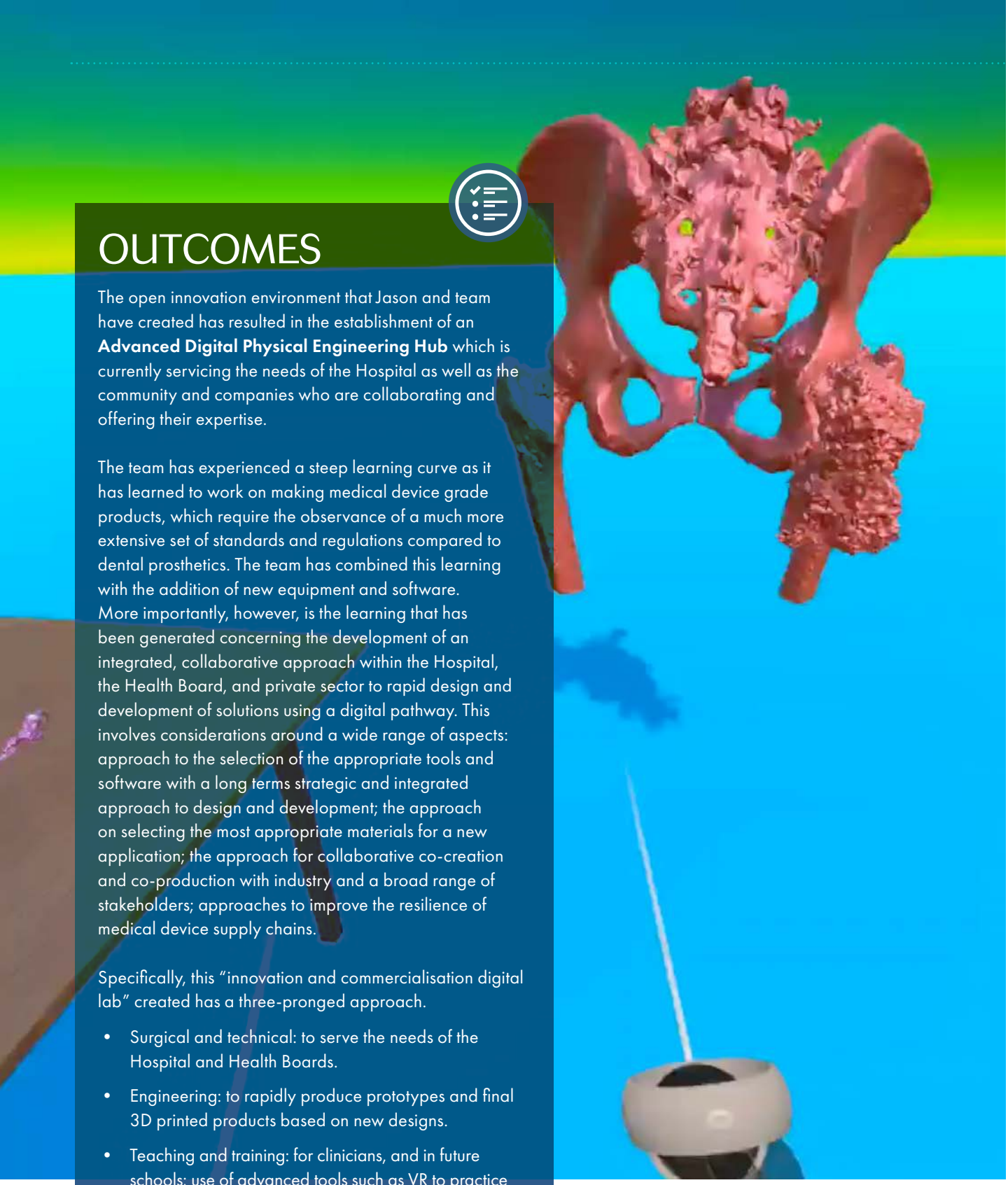
The open innovation environment that Jason and team have created has resulted in the establishment of an **Advanced Digital Physical Engineering Hub** which is currently servicing the needs of the Hospital as well as the community and companies who are collaborating and offering their expertise.

The team has experienced a steep learning curve as it has learned to work on making medical device grade products, which require the observance of a much more extensive set of standards and regulations compared to dental prosthetics. The team has combined this learning with the addition of new equipment and software. More importantly, however, is the learning that has been generated concerning the development of an integrated, collaborative approach within the Hospital, the Health Board, and private sector to rapid design and development of solutions using a digital pathway. This involves considerations around a wide range of aspects: approach to the selection of the appropriate tools and software with a long terms strategic and integrated approach to design and development; the approach on selecting the most appropriate materials for a new application; the approach for collaborative co-creation and co-production with industry and a broad range of stakeholders; approaches to improve the resilience of medical device supply chains.

Specifically, this "innovation and commercialisation digital lab" created has a three-pronged approach.

- Surgical and technical: to serve the needs of the Hospital and Health Boards.
- Engineering: to rapidly produce prototypes and final 3D printed products based on new designs.
- Teaching and training: for clinicians, and in future schools; use of advanced tools such as VR to practice on models derived from CT scans prior to an operation.

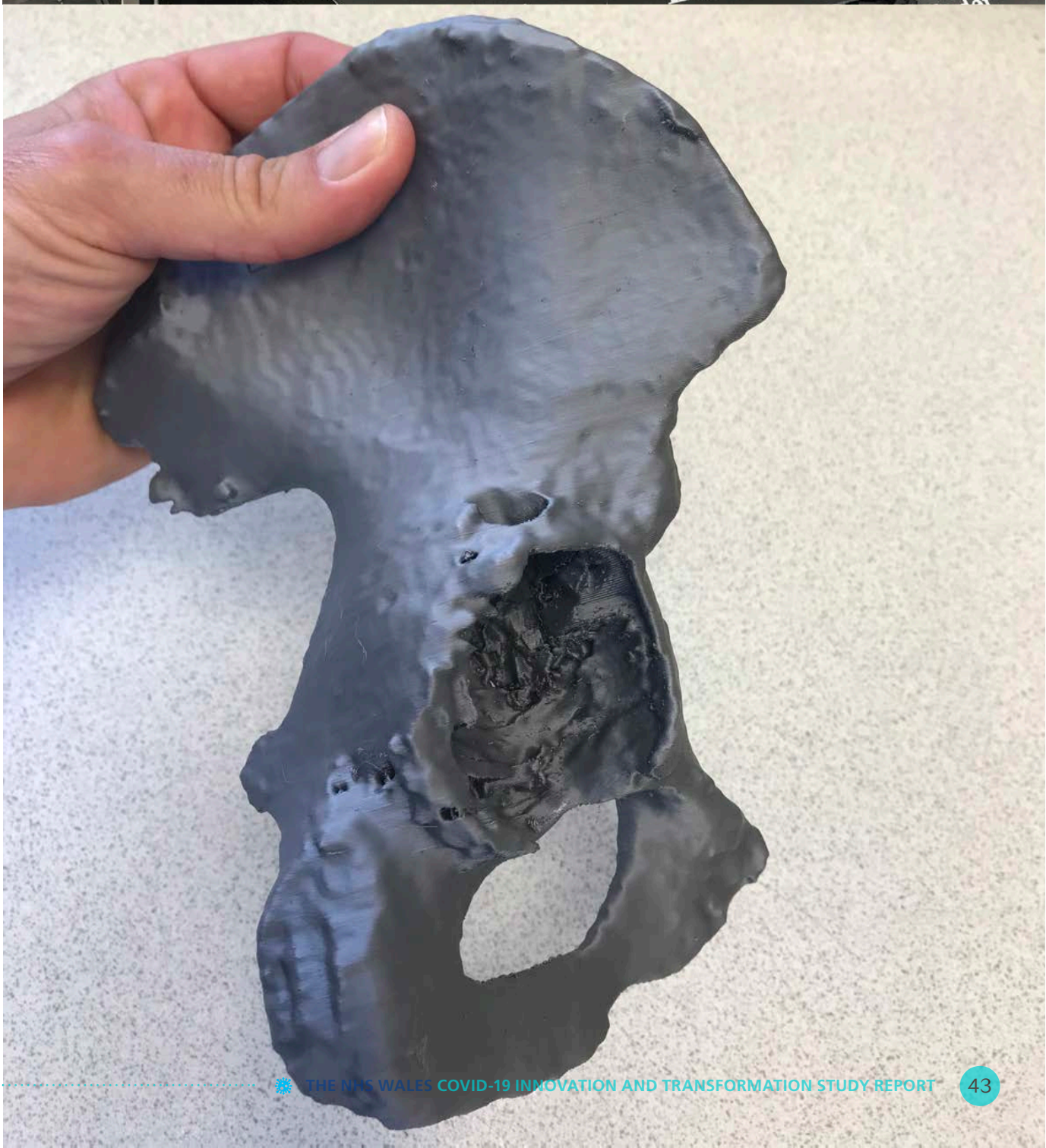
Amidst the horrors of the pandemic, the team has managed to enjoy the challenges and has taken a proactive approach to taking the opportunity to stimulate collaboration and communication as applied to supporting the clinical practice, and the work they did has had a tangible impact on their job satisfaction and attitude towards their work and the strength and unity of the team, as well as to the Hospital and patients, ultimately.



"I think it is quite an important thing for us to have a collaborative approach within the Hospital. . . . One of the major successes that's come out of this is the fact that people are talking to each other."

Jason Ingham


Ender



"If we don't lose that ethos [of helping each other], then as we go forward, we can sort of build almost a unity back into the NHS."

Jason Ingham

NEXT STEPS

Whilst Jason's engagement will remain primarily from a clinical standpoint, the work has now expanded internally to include Chemical Engineering development services, which may be provided to other Health Boards. Externally, a number of companies are actively engaged in providing support as well as developing new solutions which the lab can potentially find a commercial avenue for. The team hopes that the Hub will be used by other Health Boards and hospitals and will become a national resource. To increase the adoption of the service, Jason recommends an increase in communication and sharing of experiences, which can help to identify common problems and needs in the potential "end users" of the service. This will also help with further promoting a general culture of communication and collaboration across the NHS and Health Boards. Publications and further dissemination by those clinicians who have already benefitted from the service will further enhance the uptake of the lab.

Jason advocates for the need to have dedicated staff with the skills profile (CAD/CAM, digital design and manufacturing, and standards and regulations) that they have identified as key to enable the sustainability of their Hub.

The team also hopes to be able to retain their evolved digital workflow in their day-to-day operation, with a long term aim to lead to an increase in the use of digital technologies to help clinicians streamline their operations, saving time and money, to the ultimate benefit of both patients and NHS Wales.

Case Study

Improving supply chain resilience for critical personal protective equipment through NHS Wales Shared Services Partnership (NWSSP) Procurement Service strategic intervention

Jonathan Irvine, Director of Procurement and Health Courier Services, NHS Wales Shared Services Partnership (NWSSP) Procurement Services and Claire Salisbury MBE, Assistant Director of Procurement, NHS Wales Shared Services Partnership (NWSSP) Procurement Services, Executive Procurement Lead, Cardiff and Vale University Health Board

BACKGROUND

Jonathan Irvine and Claire Salisbury are part of the leadership team of the NHS Wales Shared Services Partnership (NWSSP) Procurement Services. NWSSP Procurement Services provides a sourcing, supply chain and purchasing service to Health Boards and NHS Trusts across Wales. The organisation supports Welsh Government in the deployment of its procurement strategy and provides procurement expertise across multiple specialist project areas.

As the COVID-19 pandemic hit, Jonathan and Claire worked closely and tirelessly as a team on three main areas; one of them concerned the operations surrounding PPE procurement, in particular the sourcing, securing and supply of a range of PPE items which had proved extremely difficult to secure on the global market.

AIMS

Early on in the pandemic, it became apparent that specific items such as Type IIR face masks (fluid resistant surgical masks) were experiencing a global supply shortage caused by unprecedented high demand due to global competition from governments to secure orders and the dependence on the manufacturing base located mostly in the Far East. In addition to this, established PPE wholesalers and contractors did not have the necessary contacts with the overseas manufacturers to secure production capacity.

The team identified the need to secure significant quantities through non-conventional supply chains. Jonathan and Claire worked with agents who had direct links with supply lines in South East Asia (China, Thailand) as well as other countries (e.g. Turkey), including handlers and quality control expertise on the ground within the regions.

Jonathan and Claire established a contract with a Welsh based sourcing agent that had direct links with the relevant source regions. This then allowed NWSSP to establish direct contracts with the manufacturer for production of the masks. Through this approach, the team aimed to secure the best value for money, with staff employed directly to ensure quality control at the manufacturer's premises, the thorough evaluation of the necessary certifications, with internal sign off prior to the sign off of the contract, which was perfected directly with the factory.

The unique approach the team adopted was that of the purchase and transfer of funds through the use of escrow accounts, which would only release payments upon meeting a certain number of pre-determined conditions, such as STS certification (quality assurance); transport in branded NHS Wales packages and cases and monitored and vetted air freight. The legal ownership of the product was tracked end-to-end, leading to final sign-off. Crucially, the team aimed at securing the contract for all four-nation s, not just for NHS Wales, to ensure the benefits could accrue to the whole of the UK, whilst also taking into account National Health Service-specific requirements for PPE items (e.g. masks changes for Northern Ireland and Scotland).

CHALLENGES

The key challenge with this product was securing the production capacity ahead of global competition, managing the price point and co-ordinating the contract on behalf of all four UK nations.

The team realised very early on that in order to be able to deliver for the nation and the UK as a whole, an extraordinary amount of effort was necessary, with a commitment that would go beyond a traditional 9 to 5 working day, and a corresponding burden of the responsibility for the success or failure of the task.

OUTCOMES

Jonathan and Claire were able to successfully secure the contract which led to the successful deployment of vital PPE within NHS Wales and the UK.

The approach that the team took to overcoming the PPE shortage was critical to enable Wales to have the necessary supplies: without going directly to the manufacturers and at much higher pace and speed than through the traditional routes, Wales would have not been able to secure the products and to do so at the negotiated prices. Most importantly, this ensured frontline staff were protected, thus saving lives.

To date, and to the best of the team's knowledge, this is the only Welsh-led, true four-nation joint PPE procurement exercise, and also the only project of this kind in the UK.

The profile of Procurement has been raised significantly within Wales and the wider UK. The success of this project demonstrated the importance of Procurement in assisting delivery of key government policy drivers. It is important that, as a profession, Procurement continue to build on this success and develop their services accordingly. These successes also resulted in a National Award, as well as in the award to Claire of an MBE for Services to Procurement in response to the COVID-19 pandemic, in January 2021. This also recognised Claire's work leading Cardiff and Vale University Health Board's response to the pandemic.

NHS Wales Shared Services Procurement is now seen as the "go to" entity in relation to procurement pandemic response, and has seen a rise of requests for advice, support and solutions for key Government Policy areas such as development of the foundational economy and decarbonisation strategy delivery. Currently the organisation is supporting the Government of India and UK's efforts to provide vital equipment to India.

There is a lot to reflect upon from this experience. The successes and the unique approach adopted highlights the importance of having a close relationship with the source of supply, as well as the importance of carefully planning the financial envelope at the foundation of a large public sector contractual arrangement.

The team have emphasised the need to: think more "outside the box"; improve the understanding of globalisation with its advantages as well as, crucially, its disadvantages; increase resilience and decrease overreliance on multinational corporations.

How procurement services worked in the past may now not necessarily be effective or efficient in the post-pandemic world, and forging closer relationships and regular interactions with sourcing agents and factories is key for future supply chain and healthcare sector resilience, as well as to improve outcomes of contracts negotiations. This requires time, commitment and considerable effort and continuity. Procurement services need to reflect this and to find ways to retain and develop staff for longer term structural robustness.

NEXT STEPS

Jonathan and Claire are currently looking to redesign and realign the entire procurement structure in Wales, to overhaul and completely refresh the category strategy management, to implement a national operating model that can be more agile and meet customer demand.

Health Boards have demonstrated they are able to work collaboratively, therefore the team will endeavour to build on this positive dynamic to make significant improvements, using CAVUHB as a platform for the initial pilot.

Case Study

Implementing virtual video consultations into foot wound and musculoskeletal care during the COVID-19 pandemic

Angela Jones, Specialist Podiatrist, Cardiff and Vale University Health Board

BACKGROUND

Angela Jones is a specialised podiatrist within Cardiff and Vale University Health Board and works in a multidisciplinary team for foot wounds and musculoskeletal diseases.

Angela is also the digital coordinator for both her service and the Health Board and in this role, she looks after the patient administration system and digital enterprises that might benefit the podiatry programme.

AIMS

Angela and her team adopted several new interventions during the pandemic, the biggest of which was enabled by the implementation of the "Attend Anywhere" video conferencing platform that allowed her team to facilitate virtual consultations with patients.

When the pandemic hit, Angela and team were forced to close their regular service and several staff members were re-deployed. This, paired with social distancing measures, meant their clinical capacity was significantly reduced, and many patients were self-managing wounds longer than usual. Implementation of Attend Anywhere enabled the team to successfully triage and prioritise patients and identify who needed immediate, in-person care.

Angela oversaw the implementation of a digital referral system/chat system between wards that allowed practitioners to digitally communicate with one another, rather than physically attending separate wards and putting others at risk.

This allowed referrals to the service along with digital images taken by either the medical illustrations team or the patient themselves. This was highly useful in guiding nurses and reducing the flow of patients onto the ward.

CHALLENGES

As the team were experienced in implementing digital platforms, they did not face any major challenges apart from the need for the platform to be rolled out quickly with little notice to staff and limited training.

The speed of roll-out also resulted in a small number of staff being initially resistant to using the new technology.

OUTCOMES

Successful integration of the Attend Anywhere platform enabled patients to provide a 'live' visual of their wounds. This provided the team with a better understanding of the specific case so they were able to prioritise and treat patients accordingly, adhering to prudent healthcare principles. This supported them to carry out self-care procedures, which helped patients develop better self-care awareness as well as confidence in the practices.

For the musculoskeletal department, the video platform enabled patients to physically examine themselves, alongside a practitioner, to allow for a better understanding of their ailment without having to step foot inside a clinic.

The team has developed contingency plans and strategies to ensure that the online consultation can be carried out safely.

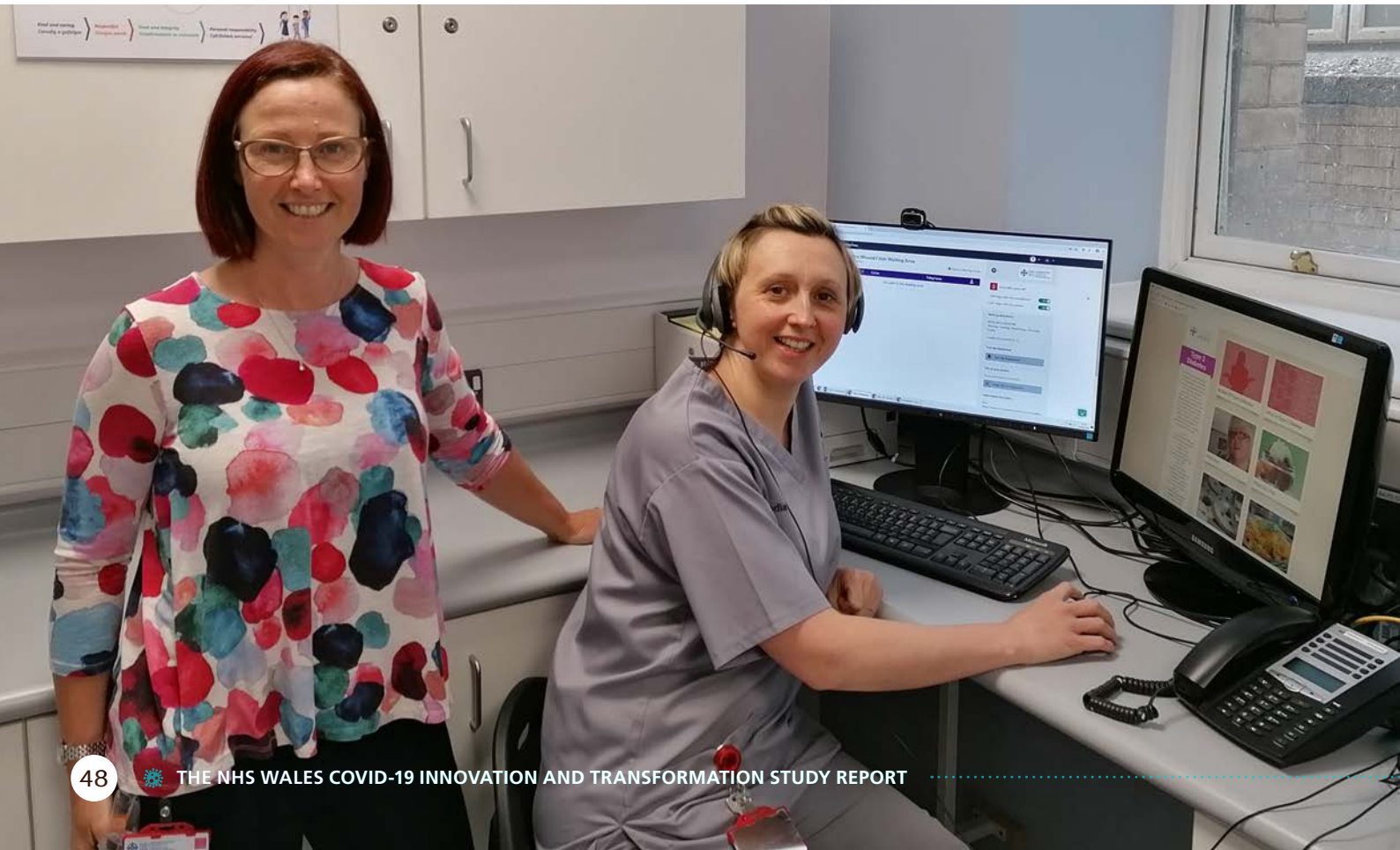
NEXT STEPS

The team are keen to sustain the progress made and not revert to the previous ways of working and therefore will be analysing the success and reviewing the data that has been collected for the duration the platform has been in use.

The national team will need to benchmark the success across Wales, comparing it to Scotland and to the work conducted by the dietary departments in Wales and Scotland, who were forerunners when this technology was initially rolled out, and discover ways to improve the platform itself and develop a standardisation for such video consultations and understand the efficiencies deriving from it.

As a further lesson to take forward for future implementations and evolutions of such services, Angela highlights the importance of having good and continued working relationships with the platform providers to ensure governance and data security are observed.

"I'm very proud of the department for looking forward and I'm very happy in terms of the innovation itself. There's a lot of evaluation that needs to be done because it's very new." *Angela Jones*



Case Study

Virtually supporting new mothers and their feeding choice through the COVID-19 pandemic

Angela Lewis, Flying Start Strategic Lead, Aneurin Bevan University Health Board

BACKGROUND

Angela Lewis is the Flying Start Strategic Lead at the Aneurin Bevan University Health Board (ABUHB) who works alongside Lorraine Childs, Flying Start Professional Lead.

Together with Lorraine, Angela manages the Families First services, the parent-infant mental health service, and the toileting team.

Angela manages multi-agency projects which are all focused on early years services which are predominantly health visits but also includes antenatal services and care for children aged 0-4 years.

As part of her role Angela works with the five local authority areas on behalf of ABUHB and works in partnership with early year leads within each local authority to deliver service to families and children.

AIMS

Flying Start Health Visiting provides a service to children 0-4 in disadvantaged areas as identified by Welsh Government. Before the pandemic, Angela's team had been piloting a service in Caerphilly Borough Families First facility, titled 'Responsive Feeding', that focused on contacting (and in some cases, visiting) new mothers within 72 hours of giving birth, to support them with their feeding choice. This service was originally put in place as research shows that the first 72 hours after giving birth is a very critical time for most families. This project was very successful.

Given the success of the Responsive Feeding programme during its pilot, Angela's team planned to slowly roll the service out to the five authority areas covered by ABUHB, however, these plans were pushed forward due to the pandemic. To ensure the programme was ready for a large-scale launch, Angela and her team reconfigured the service to be solely virtual and deployed available staff in each area to ensure it was able to be delivered in all areas. The parent-infant mental health service team provided the team with responsive training to allow them to virtually support mothers with mental health and emotional issues before passing concerns on to the midwife or Health Visitor.

As the team were not initially able to get the "Attend Anywhere" video platform integrated into their service, in the interim, the nurses assisted patients with texting their evaluations and using WhatsApp video calling to deliver support as needed.

CHALLENGES

Staffing was a major challenge when the pandemic hit; many staff had to quickly change their roles and a number of staff were being deployed across the Health Board to perform duties that differed from their normal role.

When it came to the Responsive Feeding programme, some areas did not have the right staff to flexibly respond to the pandemic and struggled with manpower to get the programme up and running. Access to information was also an issue, however, this was quickly combated through collaboration with the local authorities.

Some staff were resistant at the beginning because they felt like they were not trained to deliver a quality service virtually and that there would not be enough capacity to support the number of women needing assistance.

OUTCOMES

When the pandemic hit and all programmes were moved online, innovativeness enabled virtual, flexible working and the expansion of support areas.

In the case of Responsive Feeding, a member of staff based in Caerphilly was now able to contact a mother in Newport for example, expanding support areas considerably.

Virtual working has allowed for collaboration across boundaries, local authority areas, and enabled combined skillsets.

Breastfeeding is one of the most cost-effective, disease preventing practices around, so being able to support an increase in breastfeeding throughout the pandemic was incredibly important and beneficial.

NEXT STEPS

Following on from their success during the pandemic, Angela aims to continue to use virtual means to support families and children.

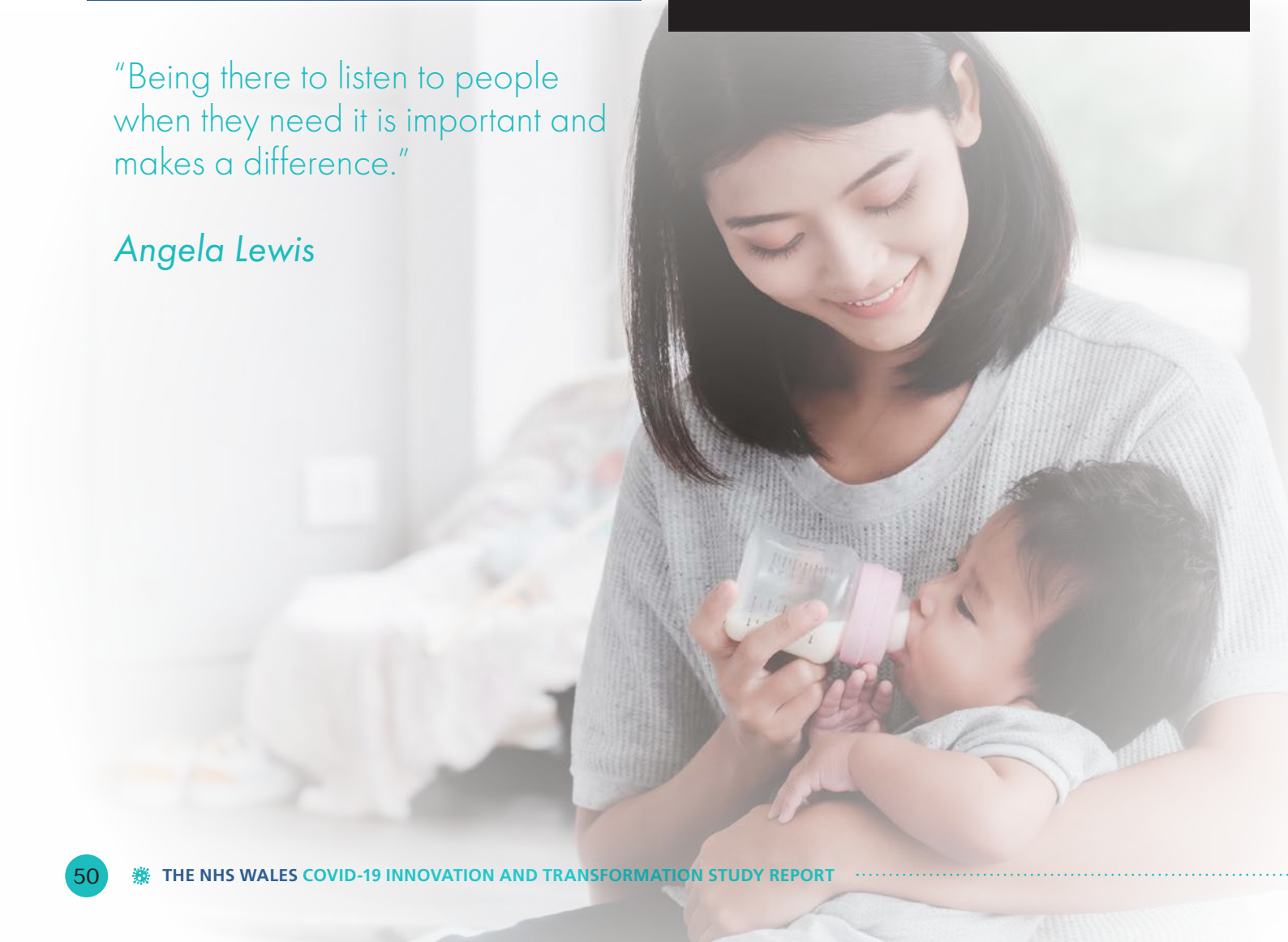
Given their expansive geographical area and client base typically being digitally inclusive, Angela hopes the team can continue to learn from their work during the pandemic to improve their service through greater digital delivery.

Having an outside party assess the success of the virtual programmes would be highly beneficial moving forward and having this evidence to share at a local level with Health Boards and associated partners could help facilitate more change and innovative practices.

Angela would like to see more research in the area of Responsive Feeding and more feeding support for new mothers, noting that she herself is pursuing a Ph.D. on the topic to highlight the incredibly important area of study that has a significant impact on many other areas of early childhood development.

"Being there to listen to people when they need it is important and makes a difference."

Angela Lewis



Case Study

Facilitating community engagement and ensuring mental well-being during the COVID-19 pandemic

Amy Mitchell, Divisional Head of Occupational Therapy for Mental Health and Learning Disabilities, Aneurin Bevan University Health Board

BACKGROUND

Amy Mitchell serves as the Divisional Head of Occupational Therapy for Mental Health and Learning Disability services at ABUHB.

Amy manages approximately 125 members of staff, all of which are either registered occupational therapists, occupational therapy support workers, technicians and some recovery workers.

Amy and her team provide both primary and secondary care for mental health and learning disabilities across community and inpatient settings.

CHALLENGES

The Rainbow Packs took quite a lot of effort and resource, as did coordinating donations and generating funding.

Ensuring all stakeholders understood the value of the intervention was also challenging and they needed to ensure the packs were not seen as gifts or freebies as some called them and that they understood they were personalised and included clinical intervention and information.

Amy initially struggled to be heard in tactical COVID-19 meetings as the main priority was infection prevention and control. However, as time passed, the importance of supporting people's welfare became quite clear, and Amy was able to get her points and ideas across.

Amy and her team relied on new and existing research or literature to make their business case and to ensure the teams' ideas were supported by evidence.

AIMS

Early in the pandemic, Amy and her team became aware that the pandemic would have a significant impact on people's day-to-day lives and productivity – particularly when the nation was put into lockdown.

The team found themselves concerned for their mental health and learning disability service users and they knew the pandemic would have an even greater impact on their ability to take part in community-based services that were deemed highly beneficial.

To combat the likely effects of lockdown, Amy and her team developed information packs for their users, led by Lucy Goodwin, Head OT for Adult Mental Health. They created a robust booklet to advise on how to maintain occupational balance and routine during the day and promote ways to keep in touch with people throughout the pandemic.

The team began collecting donations, specifically activity kits, toiletries, non-perishables, and items that would keep people occupied in terms of self-care.

The team paired these donations with their new information booklet, letters from the Health Board and mental health services, and additional contact information, to create what they called "Rainbow Packs".

The team personalised each pack, based on the patients likes and dislikes, and sent them out to their users to highlight their availability and provide additional information. They partnered with organisations such as Growing Space, to provide activity kits to their users and keep people engaged during lockdown.

OUTCOMES

The Rainbow Packs were a huge success and resulted in an innovative approach to delivering a service.

This has given Amy and team the confidence to present other new ideas at meetings and it has enabled more people to look for solutions and be open minded to innovation.

The pandemic and feedback received has highlighted that kindness should be at the core of mental health services and a connected relationship between practitioners and patients has helped to break down barriers between the two parties.

"At the core of mental health services, there should be kindness and a connected relationship between practitioners and patients."

"I think [the pandemic] has blurred the boundaries a lot more, with everybody struggling with their mental health, and I think it's been a way of promoting kindness and connectedness alongside obviously the occupational aspects."

Amy Mitchell

NEXT STEPS

Following on from the creation of their first Rainbow Packs, Amy and her team regularly produce these packs and have developed variations for on-boarding and upon discharge from the service.

Packs have also made their way into the wider teams, with medics and clinicians highlighting how useful they have been when facilitating intervention.

Going forward, Amy would like to see the team do more online – for example, offering support via online sessions and promoting community-based activities online.

Post-pandemic there is scope to continue to utilise digital resources alongside physical resources and Amy hopes to offer virtual versions of their popular programmes so that more people can engage.

Case Study

The Sleep Clinic

Alex Perkins, Sleep Physiology, Swansea University

BACKGROUND

Alex Perkins is a Lecturer at Swansea University and programme director for the Sleep Physiology Undergraduate Programme. He trains students to work in the NHS for diagnostic testing.

Prior to the COVID-19 pandemic the team was working on a primary care transformation project – Sleep Clinic – a study to evaluate sleep related breathing disorders, which was going to be funded by Welsh Government. The Sleep Clinic focus on sleep breathing disorders (e.g. sleep apnea).

Patients receive the sleep monitors, which they would wear during sleep and then return to the clinic for analysis, in order for the clinician to make a provisional diagnosis and initiate any treatment required. However, the clinic was forced to come to a halt in March 2020 by the COVID-19 pandemic because the clinic required face-to-face interaction with the patients.

AIMS

The key aim was to restore the Sleep Clinic for patients whilst limiting patient contact but still maintaining a positive patient experience and outcome.

During the autumn of 2020, and still within the pandemic, the team decided to restart the clinic in collaboration with a company that manufactures disposable sleep monitors.

As an alternative to patients visiting the clinic to receive their monitors in person, they were sent out to them via mail thus reducing patient contact and clinicians could analyse the data via cloud-based software.

Reducing the number of patients' visits also meant they were kept safe; it eliminated their travel and time spent travelling to and from appointments as well as reducing the demand on staff resource.

CHALLENGES

The team had to overcome a number of challenges, some relating to COVID-19 constraints, others highlighting existing barriers when dealing with contractual arrangements and collaborative studies with the added complexity of Government funding and Service Level Agreements *in situ*.

It was also a challenge to navigate through the Health Board structures to identify exactly who to discuss and negotiate with from a legal and/or contractual perspective.

OUTCOMES

The team have been gathering a full complement of data and analysis where the expected outcomes are:

- a leaner and more agile way to evaluate different diagnostics and monitoring solutions for sleep related breathing disorders;
- a substantial change in the clinical pathway for sleep related breathing disorders, with potentially a streamlined diagnosis and monitoring;
- a reduction in the travel and visit time for patients at the beginning of their clinical diagnostics journey in sleep related breathing disorders.

The patient's experience via the new pathway is also important to understand and evaluate and to identify: how many of those patients require being referred back to their physician; how many can be kept with the physiologist; and how many no longer need to see their physician.

This will provide an indication of how we meet the inclusion/exclusion criteria for all referrals and provides knowledge on empowering patients with them having more choice over their engagement with the service, shared decision making and how this influences the treatment outcomes.

NEXT STEPS

The team is looking forward to continuing the study, evaluating and quantifying the benefits and patient outcomes, as well as the merits of the technological approach.

The team expect to continue the clinic and study for a year and evaluate the return on investment with the hope to adopt and spread.

"The pathway is going to be a little bit more flexible; so, one thing we're looking at doing is giving patients a little bit more choice about the level of shared decision making that goes on within the clinic from their perspective. So, we've got a shared decision making score that we are looking to use."

" . . . interested to see how the patient's perception of whether or not they're involved in shared decision making influence their adherence to the treatment."

Alex Perkins

Case Study

Evidence Based Procurement and Technical Assurance of PPE for NHS Wales

Pete Phillips and Wyn Owens, NHS Wales Shared Services Partnership (NWSSP)

BACKGROUND

NWSSP Procurement Services provides a sourcing, supply chain and purchasing service to Health Boards and NHS Trusts across Wales. The organisation supports Welsh Government in the deployment of its procurement strategy and provides procurement expertise across multiple specialist project areas.

During March 2020, NHS Procurement Teams were being overrun by queries from hundreds of suppliers claiming to be able to supply PPE, most of whom had never supplied the NHS previously. There were questions to be answered regarding the ability of the suppliers to provide what they claimed, and whether their products/devices complied with appropriate regulatory and standards requirements.

AIMS

Within days it became clear that a process was required which could identify potential suppliers, screen their offering, and make a decision as to whether orders could be placed by NWSSP. This required a combination of NWSSP's procurement expertise and the technical knowledge of the Surgical Materials Testing Laboratory (SMTL).

NWSSP Procurement Services assigned their Medical & Clinical Sourcing Team to act as the single point of contact for all PPE enquiries into NHS Wales. The team quickly established a documented process, working alongside SMTL to record and review all offers of supply for critical PPE items. This included ensuring that all offers were from legitimate supply sources, checking company backgrounds and confirming that they were an established supplier of PPE. Once the initial checks were completed the team were then tasked with obtaining the appropriate product certifications from each supplier in order to ensure that all potential products were certified to the relevant quality and safety standards. This was a crucial part of the process and was essential in ensuring that only those products which passed all of these checks were progressed to the ordering stage.

SMTL repurposed their senior management, research team, IT staff and testing technicians to provide a bespoke technical support resource for Procurement Services.
The aim was to give Procurement colleagues a list of minimum requirements that any potential supplier should meet, plus a list of documents suppliers had to provide in order for their offer to be assessed. At the height of the pandemic between 6-12 SMTL staff were working on PPE submissions.

SMTL's remit was to cover:

- Regulatory requirements – were the suppliers and their products in compliance with the Medical Device and PPE regulations?
- Performance and Standard requirements - did the products have evidence demonstrating their fitness for purpose? This would usually consist of test reports, technical file information, notified body reports and quality management system certificates.

SMTL set up a bespoke system using the recently deployed GSuite which allowed multiple technical experts to assemble the document bundles and concurrently edit the Decision Document – the document which summarised the evidence and decided whether the products were appropriate for purchase or whether there were problems with either the PPE or the supplier. This enabled SMTL staff to track the progress of each submission in real time and to contribute their own area of expertise in parallel to the decision document without the delays imposed by serially editing documents over email trails.

CHALLENGES

The main challenge for SMTL was to navigate through the complexity of the four main drivers for PPE.

- The four UK nations IPC guidance, which determined what PPE was required and when it should be used.

- Medical Device Regulations for medical masks, gloves and surgical gowns, and the PPE Regulations for respirators, visors and isolation gowns.
- COVID-19 specific Easements and Derogations, available from HSE and MHRA respectively for products meeting the minimum technical specifications.
- Performance of products, mainly based on European Standards – to answer the question "Will this product provide the appropriate level of protection?"

For NWSSP Procurement Services, the main challenge was having to deal with hundreds of suppliers who had no prior experience of supplying the health service in Wales. The Supplier Triaging process ensured that only legitimate suppliers were used for sourcing critical PPE. Between 17th March and 30th April 2020, the Supplier Triaging Team dealt with over 2,000 offers of support from suppliers and other organisations. This included dealing with challenging and often hostile behaviour from some suppliers who were desperate for NHS business.

OUTCOMES

The Supplier Triaging Process ensured that NHS Wales did not once run out of stock of any PPE product lines during the height of the pandemic. This process was the precursor to the formal 'Industry Challenge' Process that was subsequently overseen by colleagues in the Life Sciences Hub and Industry Wales CERET group. The triaging process is still being used by LSHub Wales to assist new suppliers to do business with NHS Wales during this unprecedented Public Health crisis.

SMTL assessed 369 bundles of documents. A single bundle could contain more than 20 multi-page test reports and certificates. The technical team checked that certificates were genuine, test reports had been produced by competent test labs, test reports and device information related to the same catalogue number, and that regulatory documents were all in order. 54 submissions contained fake or fraudulent documents, and many more (the majority in fact) were found to have significant technical problems – wrong tests, inappropriate application of CE marks, and various other issues.

As an example of the fraudulent activity, one Chinese test lab was found to use the same test report for every FFP3 mask submitted for testing, only changing the name of the customer and the name of the product they were supposed to test. The test data in the report was identical, even when they tested products which should not pass the tests in question. Other suppliers had photoshopped certificates, changing the name of the company or the name of the product.

Ultimately, the combined team ensured that medical devices and personal protective equipment being bought was of the appropriate quality and had the requisite performance so that Welsh NHS staff could use it with confidence.

NEXT STEPS

SMTL and NWSSP Procurement Services have had a close relationship for over 40 years, as SMTL's medical device testing function developed from Welsh Procurement's requirement in the late 1970's to ensure the quality, safety and value for money of the medical devices it procured.

NWSSP have funded extra researchers to enable SMTL and Procurement Services to further develop the Evidence Based Procurement function, as well as funding new test equipment to enable SMTL to develop face mask testing and other new testing capabilities.

SMTL's expertise had been recognised nationally, and SMTL now provide technical expertise to the DHSC Decision Making Group, which assesses stocks of PPE purchased but not yet deployed to the NHS. DHSC are also in discussion with SMTL to provide further technical support to their future management of PPE stocks.

The Life Sciences Hub Wales are now using the industry triage process developed as a portal to support NHS Wales and industry engagement.

The Medical & Clinical Sourcing Team's agility supported NHS Wales in securing a safe and legitimate supply of PPE products to Wales. These additional activities were all managed at the same time as keeping abreast of calls and queries related to the team's usual day to day business activities.

The Medical & Clinical Sourcing Team have since been recognised for their efforts during the pandemic by being shortlisted for two National awards and gaining recognition from the NWSSP Senior Leadership Team during the recent Staff Recognition Awards.

Case Study

Emergency Medical Retrieval and Transfer Service Cymru (EMRTS Cymru) (clinical informatics research)

David Rawlinson, Clinical Informatics and Research Manager at EMRTS Cymru, Welsh Ambulance Service NHS Trust

BACKGROUND

David Rawlinson is a Clinical Informatics and Research Manager at Emergency Medical Retrieval and Transfer Service Cymru (EMRTS Cymru). He is based in Swansea with the Welsh Ambulance Service NHS Trust.

David is heavily engaged in the research and management of data and informatics systems including clinical informatics, patient records, and control systems such as clinical calculators. In his current position he covers health record management, and clinical audit and the use of this to support the NHS nationally.

David is also engaged in work with satellite technologies, which supports healthcare provision in rural locations in Wales.

AIMS

At the start of the COVID-19 pandemic, EMRTS Cymru saw very little activity as hospitals were not transferring patients.

During this time, David and his team looked to complete ongoing projects with partner organisations, such as industry partners and the satellite agency.

This ultimately resulted in the further development of mobile equipment to support a community testing unit. The team recognises that there is potential to spread this innovation and that increased resilience will aid in this endeavour.

The team also aimed to establish a mechanism for transmission of high-resolution paediatric ultrasounds (USs) via satellite to various locations. This method added flexibility to the service and means there is less travel involved which is beneficial environmentally.

CHALLENGES

The team discovered that transmission of high-res USs via normal infrastructures was not possible, unless a significant amount of money (~£200,000) was invested. It was also not a user-friendly process, nor was it easy to set up.

Generally, the team found it challenging to get people to invest in the project so that it could be scaled across the NHS. They do recognise however that there was a lot of money already being spent on infrastructure due to COVID-19, which provided an additional challenge.

The team also recognises that expansion would not have been possible without the pandemic. But the development of this innovation during COVID-19 allowed teaching for junior doctors who can manage the entire patient journey, and links with national programmes.

OUTCOMES

This innovation has been important for patient care as it has allowed greater coverage for specialist clinicians to diagnose different conditions. In addition, it was safer for some patient cohorts, such as babies, due to the reduced travel time, and has the potential to save lives where very quick diagnosis is needed.

The team learned the benefits of partnerships between industry and the public sector, and exemplified how working collaboratively can save time and resources. They showed that through collaborative working other innovations could be used in a joined-up approach to realise a solution.

Additionally, the project showed that spending time on individual use cases, and striving towards taking ownership as a clinical team, was beneficial.

No negative issues have been encountered so far with this innovation.

"I was really pleased with the innovation. . . . [I]t's just been a good journey and everything we've done seems to have been taken on well. And even when there's been technical issues, we resolved them very quickly."

" . . . big motive to see it having a positive impact on the patients."

David Rawlinson

NEXT STEPS

The next step for David and the team is to roll out this network to continue the service and to make it more versatile.

This will require engagement with a wider range of stakeholders across the service to achieve buy-in.

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Emergency Medical Retrieval & Transfer Service

Case Study

Successfully transferring the community-based education of chronic care to online platforms during the COVID-19 pandemic

Michelle Rigby, Patient Education Programmes, Betsi Cadwaladr University Health Board

BACKGROUND

Michelle Rigby works for the Betsi Cadwaladr University Health Board. Her role is focused on running patient education programmes around self-management and providing basic patient education on chronic conditions, both physical and mental.

Michelle manages a very small department within the Health Board that is made up of four members of staff, including a coordinator who helps with running the patient education and managing the tutors. There are also two part time administrators.

The team are based in Caernarfon, but they manage the services across the six counties of North Wales.

AIMS

Historically, Michelle and her team have always provided courses and training within community venues. Most courses would host roughly 16 patients, all living with some long-term health condition, and would be run by two tutors who also had personal experiences with long-term health conditions. When the pandemic hit, all activities relating to community-based courses stopped, since they were not deemed a necessary resource. However, as the pandemic continued and the team began to learn more about the effects of COVID-19 and areas of vulnerability with the population, they realised that although the patient education, in its previous form, could not continue, it was vital that they resumed their work.

Michelle and team evaluated different formats for their educational services and various virtual portals, such as Zoom, were investigated. Unfortunately, the team were not able to use Zoom and could not find a portal that the Health Board were comfortable with, causing them to once again put a halt to their services. However, Michelle was able to run a brief telephone course that supported patients through telephone conferencing and, while not ideal, it was evaluated as a positive step forward.

Finally, in September 2020 the team were able to resume their services using a video conferencing platform approved by the Health Board. The team worked hard to configure the content so that it translated well in a virtual setting and the courses have seen positive adoption rates from those in attendance. Additionally, Michelle notes that with the start of short, compressed video-based courses, she saw a change in the way the Health Board operated and, as a result, there is now a much more cohesive and coordinated approach to ensuring there is support and education available for patients.

CHALLENGES

Michelle's team faced several challenges throughout the pandemic. The main challenge at the beginning was the lack of an existing platform that allowed them to deliver their courses safely and effectively. As such, they were unable to move forward with their offering and Michelle noted that the team spent considerable time to figure out ways to get their services up and running. The uncertainties surrounding which platform was going to be acceptable at the beginning meant that Michelle and team could not provide the much needed support and education to their patients.

Focusing on the heavy reliance on technology in the solutions provided by the Health Board, Michelle also highlights the extra levels of inequality brought on by the increase in digital services. She notes that some, who may not have a strong internet connection or a new device, may struggle to access content and may feel excluded as a result.

OUTCOMES

One achievement Michelle highlighted because of innovative change is the increased collaborations between different teams and departments. Michelle notes that her team now has new links with five different departments within the Betsi Cadwaladr University Health Board that didn't previously exist.

The resumption of the educational services in the digital domain through the new approach mean that they are now able to provide education to a significant number of patients, target specific groups that are waiting for service, and make fast, well-informed changes that will provide less complications down the line. Michelle and her team have been trying to get training online for 3-4 years now and were able to deploy the new service rapidly and successfully during the pandemic.

Michelle also notes that they were able to implement training and various models for Health Board staff, focusing on well-being and mental health, which will become very important going forward given our recent reliance on frontline workers. Michelle also reflected on the effects that the pandemic had on every stratum of the population; identifying ways to release the pressure on frontline staff through for example assigning other workforce to help alleviate their burden would help frontline staff cope with the pressures, in turn benefiting patients.

NEXT STEPS

Michelle reflected on the learning necessary to move forward effectively, in particular the need to capitalise on each team member's skillsets and expertise to work more multidisciplinary and provide regular feedback to each other.

Additionally, the team will be working to develop their offerings and create many different types of education to provide their patients with a suite of options. For example, they have recently started working on a "long COVID" self-management programme. Michelle's aim is to create an education hub so that, regardless of whether the patient is a long-term patient or a new GP referral, they've got one main integrated information point to access.

Finally, being the first group in the UK to deliver educational programmes online, as they were in the community, Michelle and her team will continue perfecting their process and resources and believe there is potential to further develop their approach and deliver it both nationally and internationally.

"[We now get to educate] a significant number of patients, and we're being able to target . . . specific groups that are waiting for service. If we can get the education in now and they can start making those changes immediately, hopefully there'll be less complications down the line. So, it's getting people talking and getting that education available, as well as moving to a new method of communication. We've been trying to get training for patients online for three or four years now. We've managed in 12 months what would have probably taken another four years."

Michelle Rigby

Case Study

Using RFID tracking to manage medical devices and increase staff safety during the COVID-19 pandemic

Robert Salter, Healthcare Scientist, Cwm Taf Morgannwg University Health Board

BACKGROUND

Robert Salter is a Healthcare Scientist at Cwm Taf Morgannwg University Health Board. Rob works for the Clinical Engineering Department and his primary role focuses on special projects and digital integration.

The Clinical Engineering department are responsible for maintaining the full lifecycle of medical devices within the Health Board.

Rob and his team are responsible for all the management, service, maintenance, repairs, and decommissioning of the medical devices, and are also tasked with providing expert support around the purchase of new equipment and required training.

CHALLENGES

Having to navigate entirely new territories, Rob and his team were met with several challenges throughout the pandemic.

First and foremost, the team were tasked with rapidly setting up new wards which included the sourcing and installation of new equipment in a very short amount of time. As this process was best completed by a small, expert team, Rob noted that resources were stretched very thin.

Secondly, Rob highlighted the fact that a strong commitment and a belief in the innovation are necessary factors at all time for every member of a team, for the delivery of an innovation to succeed and to avoid facing many challenges. When attempting to implement their tracking system, the team often were faced with the challenge of having to rely on their own initiative and perseverance without the support of others.

AIMS

For Rob and his team, the pandemic highlighted that there was a very rapid requirement for very large volumes of equipment. With the pandemic in full swing, the need for new wards expanded in several key areas and Rob's department were tasked with sourcing and installing the required equipment ahead of the pandemic's growth.

Given what would normally be a 6–9-month task, Rob and his team were completing up to 11 moves in a week, each completed in just a few hours. Rob noted that his team were well suited for this task as they were a small team of experts that needed minimal direction and guidance and could rapidly deliver the changes necessary while providing high-quality work.

To help combat COVID-19, Rob and his team implemented zones throughout the Hospital so that they were able to identify which equipment was in contaminated zones. This helped them when considering movement between zones, repairs, and device availability, however, the team stressed the need for input from clinicians to help them understand whether the device was contaminated, had been cleaned, etc.

With this in mind, Rob and his team decided to make use of the Hospital's RFID tracking service, as they saw potential for it to be used as an audit tool for medical devices.

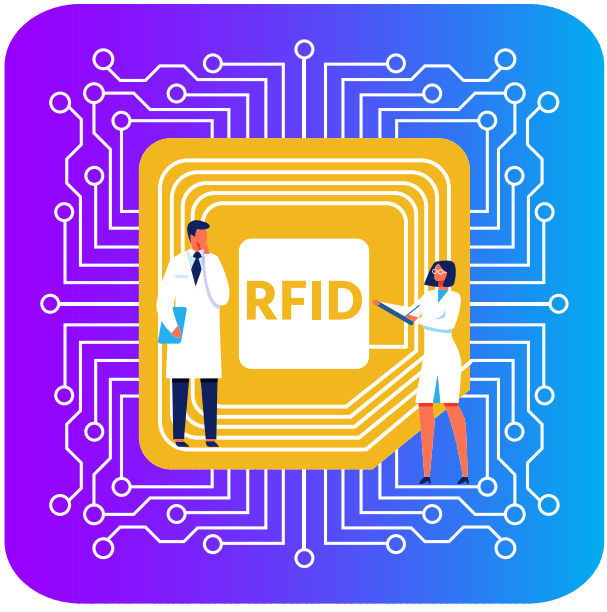
The introduction of this novel approach allowed the team to know where the device had been, who had used it, how long it had been there, etc., ensuring they weren't putting themselves or the wider community in danger.

OUTCOMES

Rob's biggest achievement throughout the pandemic was successfully implementing the tracking innovation for their medical devices.

Rob and his team pushed the capabilities of their technology to create a procedure that resulted in increased staff safety and stronger infection control. The team solved the significant problem of being able to audit and "live track" the journey of each piece of equipment throughout the Hospital and their state of contamination as they moved through different zones, thereby substantially increasing the net availability of the resources and minimising unnecessary procedures. The team has accumulated substantial data on how the equipment moves within the facilities, which can be analysed and used to develop algorithms for more efficient and safe resource deployments in future.

Through this case, Rob and the team proved that change can be enacted and that data can be use more effectively to inform the operation and clinical practice, going beyond static solutions and using automation within a close environment to dramatically improve safety. They also show the power of internally developed innovation in being able to go beyond off the shelf commercial solutions, since the ability and visibility of the environment enabled them to create an innovation that has a level of integration with the practice that would not normally be achievable with third party solutions, and can go beyond the current capabilities.



NEXT STEPS

For Rob and his team, the next steps include continued stakeholder engagement. Rob notes that the key for any sort of hospital wide audit and tracking system is to ensure as many people as possible can benefit from the data that would result from the system; they will use this as the starting point to help build their case going forward. As such, they are also working with the business informatics team to ensure that the analysis of the data can augment dashboards to help inform clinicians' decisions.

The team will continue to progress with integrating information into several other systems and aim to expand the use of tracking systems into Artificial Intelligence algorithms and software to assist the Hospital in further developments, such as: resource optimisation; infection control modelling; sample tracking; patient tracking; and real time categorisation, which can then in turn inform the resources allocation and prioritisation, etc., essentially forming an integrated asset management system and service. Rob and team will evaluate also the opportunity for further analysis of the substantial dataset and dissemination of the learning through academic publications and further partnerships arrangements.

"The negative is that everybody has a thousand other priorities and you've got to have a commitment and a belief in that innovation that you're trying to deliver. It's a painful journey. You get knocked back by people and you've got to remember that everyone else is on their own journey, their own priorities that they're suffering. . . . So, it's having that commitment and resolve to know this is innovation – you've got to believe in your project."

Robert Salter

Case Study

Mobile ultrasound innovation in cardiology diagnostics for rural communities in Betsi Cadwaladr

Liana Shirley, Advanced Clinical Physiologist & Hannah Jones, Senior Cardiac Imaging Specialist, Betsi Cadwaladr University Health Board

BACKGROUND

Betsi Cadwaladr University Health Board (BCUHB)'s community cardiac team have been taking their echo diagnostic clinics into the homes of their patients to ensure they continue to receive the care and treatment needed during the COVID-19 pandemic.

When the country went into lockdown during the pandemic the team started telephone triaging patients as many of them were shielding. The team realised that the cardiology patients needed to be seen in person to be adequately assessed. Thus, the team made the decision to deploy a mobile ultrasound diagnostic – taking heart failure (HF) assessment clinics into the patient's home. Liana and colleagues visited patients who were at increased risk of deterioration due to heart failure and could possibly end up requiring hospital admission.

The community cardiac team see patients who are referred by their GP with suspected heart failure, and a number of assessments are carried out before finding the right mechanism/pathway for care provision.

CHALLENGES

In order to realise this innovative intervention of delivering diagnostic and healthcare support, the team faced a number of challenges, including:

- the large geographical area under Betsi Cadwaladr – some areas and communities are very rural:

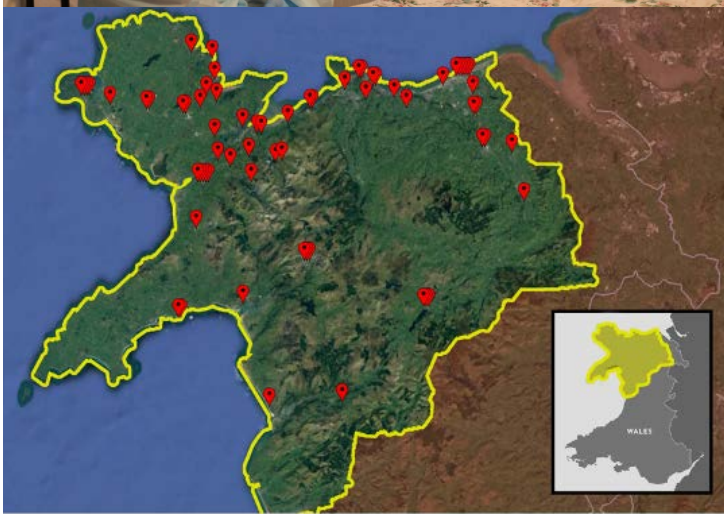
"Betsi Cadwaladr is the largest Health Board in Wales and covers a third of Wales."

- logistics of transportation of personnel and equipment to certain locations – this was exacerbated in the winter months where transport was made more challenging;
- ergonomics during patients scans, due to home settings;
- significant pressure for a long period of time and a lack of up-to-date information, making operating under these conditions challenging albeit very rewarding.

AIMS

The overarching aim of this work was to successfully deploy mobile ultrasound machines to meet the need of cardiology patients in the community to continue echo-cardiograms and other diagnostic techniques in the comfort and safety of the patients' homes, as community hospital clinics were forced to close.

This aim evolved from the understanding that the pandemic was going to have a knock-on effect on healthcare for years to come from undiagnosed HF – the team took it upon themselves to be at the forefront of delivering help to patients, aiming to break down the barriers to innovation in the process.



Top: Liana and Hannah at one of their home visits.

Bottom: geographical area covered by the service and the pin markers highlight the actual home visits.

OUTCOMES

From April until September, the team performed 78 home visits – 50% were diagnosed with a form of heart failure; six with severe aortic stenosis or severe thickening of the heart valve, thus requiring urgent referral to a cardiologist; 13 patients had new valve disease; among other cardiac related diseases. The team also found that many patients had sub-optimally controlled hypertension and atrial fibrillation; in total, 57% needed medication changes to the management plan.

To the best of the team's knowledge, theirs was the only service in UK that was taking diagnostics service in people's homes with full equipment and in full PPE.

Through delivery of this innovation the team decreased the number of admissions, avoiding at least ten hospital admissions with a cost saving and benefit of approximately £40,000; and preventing patients from having to enter hospital facilities during the pandemic. Patients' response has been overwhelmingly positive, with many testimonies in support of the innovative approach.

Through the challenging yet rewarding process the team found that, by harnessing the power of team work, services can be adapted to anything – showing that it is possible to be agile and responsive to evolving situations and that a continued and open approach to innovation within the NHS is paramount.

The findings from the team contributed to a published article exploring the increase in cardiovascular deaths. Moreover, this work was presented to the Rural Health and Care Wales and the all-Wales health forum to bolster exposure.

Interestingly, neither Liana nor Hannah contracted COVID-19 disease during this period – showing this is a safe and sustainable way of practice.

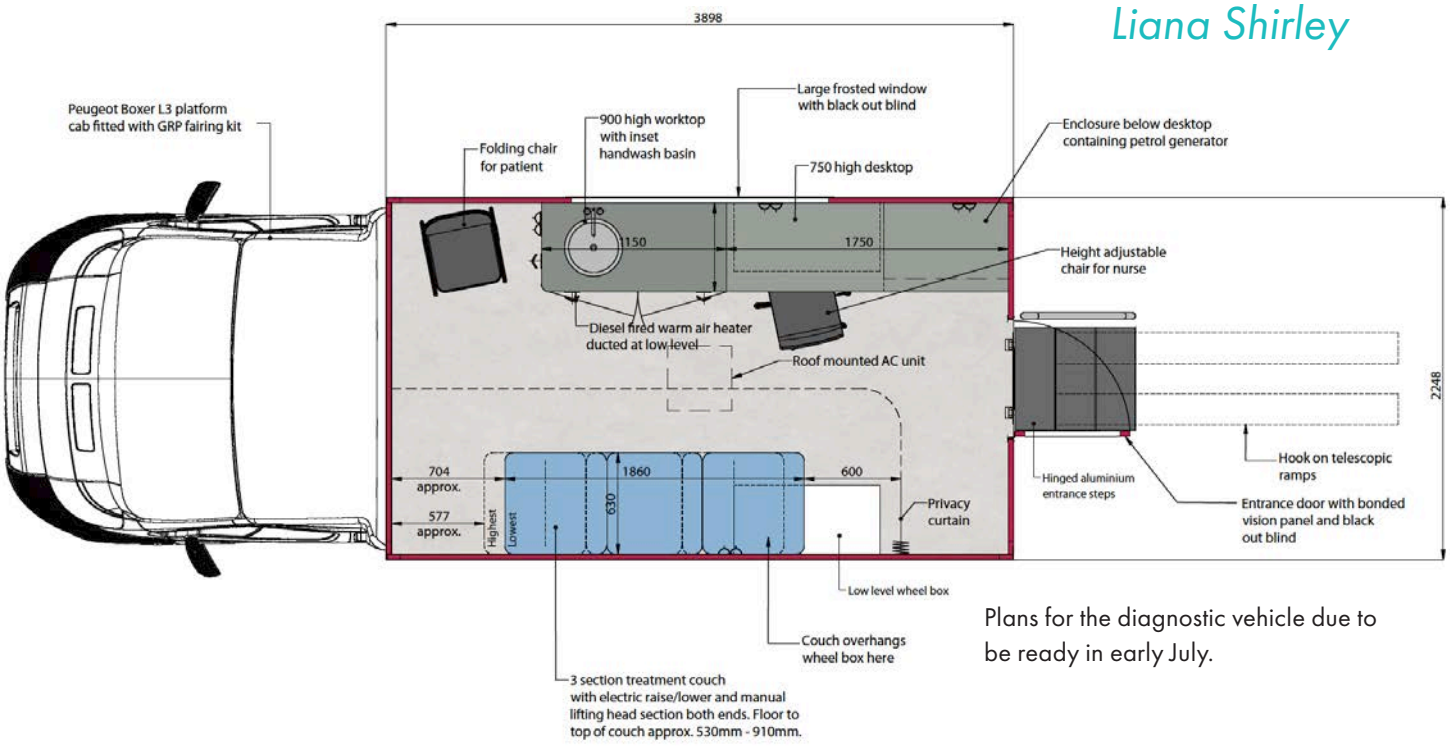
NEXT STEPS

The team has bid for a purpose built vehicle that can accommodate the shielded and vulnerable patients, to ensure the environment is appropriate for the safety of both patients and equipment. If the bid is successful, they will utilise the van also after the clinics will have re-opened, as an extra clinic room in the car park. This will strengthen the service on an ongoing basis post-COVID-19, also helping increase service resilience and continuity in areas under temporary lockdowns, and future emergencies.

The team hopes that their experience will help increase speed and adoption for this innovative one-stop mobile physiology clinic model within HF as well as other healthcare specialties, in particular in challenging rural health settings.

"Adapting and innovating is vital in these NHS services."

Liana Shirley



Plans for the diagnostic vehicle due to be ready in early July.

Case Study

Reinstating the use of volunteers within social and health work during the COVID-19 pandemic

Fran Targett OBE, Commissioner, The Bevan Commission

BACKGROUND

Fran Targett OBE used to work as the Director of Citizens Advice, however she is now retired. During her time as Director, she became a member of the Bevan Commission.

At present, Fran is the Vice Chair of the Wales Council for Voluntary Action and is heavily involved in other voluntary sector parts of the world. She is also Chair of the Welsh Government's Information and Advice Network.

As Chair of the Welsh Government's Information and Advice Network she advises Government and chairs a group of people who have different backgrounds in advice, health, social care, and academic, to look at influencing Welsh Government Ministers on information and advice matters.

Fran was appointed as a Bevan Commissioner because of her background in Citizens Advice and her knowledge of what was happening to ordinary people in health and social care terms; however, the network also includes a wide range of people who have clinical backgrounds across that field.

AIMS

Fran notes that even though she is retired, the entirety of her life during the pandemic was spent on Zoom. The first innovation she took part in was with a group in North Wales where, as Bevan Commissioner, she assisted people from the Health Board in completing some work around the development of a virtual community hub for health and social care.

Secondly, Fran also highlights the work she has been doing with Helpfuls Cymru, focusing on the volunteering opportunities across Wales that have been successful throughout the pandemic and how they've had to change to do so.

Acting as the Chair for Helpfuls Cymru, Fran met with a small group within the Wales Council for Voluntary Action, Urban Commission and Social Care Wales, and led the discussion on how to develop some highly robust processes to help improve volunteering across health and social care.

CHALLENGES

As she worked on both projects mentioned above, Fran highlighted the large pull back around volunteering in Wales and the NHS specifically, due to COVID-19.

Initially, many organisations didn't believe volunteering would be possible in the health and social care sector, due to the pandemic, and Fran notes that from the Health Boards' point of view, there were other and more important things that needed immediate attention during the early stages of the pandemic.

However, Fran notes that watching the volunteers evolve and emerge, alongside the creativity that some of the Health Boards had about how they would use their volunteers, and how they would adapt old procedures, was inspiring.

Additionally, Fran highlights that once groups were able to overcome the challenge of using volunteers during the pandemic, especially in patient facing roles, developing strong processes that allowed for them to continue to do so was hard but critical as it enabled many more to take on similar processes going forward.

OUTCOMES

Fran notes that from her perspective, in each of the projects she worked on during the pandemic, she was trying to be the voice of the user in what might have been perceived to be a very clinician-led discussion. She noted the importance of having core advisory group members who take the perspective of the user to enable true co-production.

Additionally, Fran highlights how the pandemic allowed the discourse on future proofing services with the novel practices and approaches to start, and provided insight and scope into things that many groups had been wanting to do for some time now, i.e. virtual medicine, the implementation of the virtual hub and the complexities surrounding the levels of engagement and anonymity by users.

She praises the ability of the NHS to step back and look at how they are going to take these findings and innovations forward without reverting to old practices and highlights that the new normal needs to be different.

NEXT STEPS

The next step for Fran and her team will be to focus time and resource into the volunteer Virtual Hub. Currently, the team has completed the research and debates around how to take the Hub forward, and a local NHS charity is working on development and making it a reality.

Additionally, the team will be working to directly engage with clinicians to get their buy-in and ensure the Hub works for both practitioners who need assistance and volunteers looking to make a difference.

A bid for funding has been submitted with Welsh Government third sector support, to evaluate what has worked well across Wales and to evidence this learning. They also received buy-in from the Welsh Confederation to support the knowledge dissemination.

Additionally, Fran hopes to share the learnings of the Board, the processes they put in place, and research surrounding the Virtual Hub concept across the UK.

The link with Helpfuls UK will also give them the opportunity to learn from the experiences in England as well as to focus on finding effective ways to spread their own learning across the UK.

"[The pandemic] gave us an opportunity to step back a little bit and go 'what do we want to keep of this?'. Once we are in a position where the pandemic is under control and we are moving back, the new normal needs to be different to the old normal. So, if we're using volunteers better, if we are actually developing a virtual hub, not just in North Wales but across the UK, that works better than the sorts of things that have been put in place in a hurry, then that is worth doing, isn't it?"

Fran Targett

Case Study

Facilitating online training and innovation throughout the COVID-19 pandemic

David Thomas, Assistant Director of Improvement, Aneurin Bevan University Health Board

BACKGROUND

David Thomas is the Assistant Director of Improvement at Aneurin Bevan University Health Board (ABUHB) and leads the Aneurin Bevan Continuous Improvement (ABCI) team. The ABCI team comprises of 12-15 personnel who have a range of skills related to quality improvement, modelling and analytics.

David leads ABCI on behalf of the Health Board and facilitates a significant amount of training activity for the purpose of building the improvement capabilities and other capabilities within the organisation. They also run training to grow the ability of the Health Board to deliver its own quality improvement work, modelling and analytics work, and development of networks. Through bringing people together for training and coaching them to support their own improvement activity, David and the ABCI team hope to grow a network of improvers and modellers across the organisation. The team also run leadership training and have their own analytics and modelling academy which they run on an annual basis.

Historically, David and the ABCI team have run or supported large scale improvement programmes in the Health Board, the last of which concluded last year, but due to COVID-19, they are not currently running any large-scale improvement programmes.

AIMS

At the beginning of the pandemic, the ABCI team carried out substantial reactive modelling and analytics work to support the Health Board with modelling around demand and capacity. Working with epidemiological data to anticipate what needs would likely translate into, the team went through multiple iterations of multiple models in support of the Health Board. The team also completed work around modelling workforce demand.

Regarding their training activities, David and the team realised very early on that their existing model of delivering training and supporting colleagues had become non-viable and required a new way forward. With the aim of keeping their programmes up and running, and to help navigate COVID-19 regulations, they first reviewed their programme content, shortening it to ensure it would translate well in an online capacity. Once this was completed, the team were left with sharp, punchy content and using Microsoft Teams, they took all courses online, as opposed to the pre-COVID-19 face-to-face classroom format they had in place.

Additionally, the team have also built several assets around core quality improvement skills and blog posts which are free for everyone to access on the Health Boards website. They also created a series of "unbreakable" Excel based tools with associated videos that allow users to build their own charts, play with data, answer questions, etc.

CHALLENGES

The main challenge David and his team faced was related to the finicky nature of technology. Tools such as Excel, sometimes may present challenges due to the nature of the tool. Additionally, due to the nature of their environment, financial resources were limited, and David and his team found they were met with the challenge of creating spaces – specifically, online spaces - that people could use to access their content easily and efficiently, and to deploy it alongside (as a "bolt-on" to) an outdated Health Board website infrastructure. At present, they have settled for using Google Classrooms and the Health Board's website.

David also noted that the remote nature of their office's pandemic response made accessing people quite difficult in the early days of lockdown. Within the first few weeks, it took them quite a while to iron out the kinks of remote working and endeavoured to get together as a team, a few months in, to discuss their learnings.

OUTCOMES

Looking back at the changes made during the pandemic, David notes that there have been some brilliant innovations made in the past 12 months that arguably, should have been put in place years ago.

Having been forced by the pandemic to innovate and change procedures that previously worked, David notes that they now have products that they wouldn't have previously had and he is confident that the wider team will continue to benefit from them greatly over the foreseeable future.

While the pandemic has been disruptive, David notes that the flexibility that it brought about in his team has been incredibly positive and will serve as a stepping stone for future innovations. Additionally, he believes that there has been a change of mindset, when it comes to innovation with people being more willing to proactively break habits or common behaviours to facilitate change.

When tackling the topic of taking their training programmes online, David notes that change was inevitable. Through moving their work online, they've been able to: continue to train people; provide useful resources; help people to do quality improvement work; and think about quality improvement in ways that otherwise would not have happened.

NEXT STEPS

Over the coming months, David and his team will continue to complete additional technical resources focusing on some complex areas. They will also be focusing on building out their network and providing a virtual hub, that can act as a focus point for interaction and conversation between users.

Additionally, the team will continue to allocate resources towards more sophisticated, complex, and longer-term training packages such as their Analytics and Modelling academy (to be hosted within Cardiff University's online learning environment) and their new flagship QE programme.

The team will be looking forward to more Health Boards using the freely available resources they have developed, as well as to finding viable ways to share the more complex and higher end programmes created.

"We've now got a really good product with all . . . the technical kinks ironed out. The team are really, incredibly proficient in delivering and now it's very smooth and they've got to the point of proficiency where they can chop and change roles as well.

So, you know, we can kind of rotate people around and it's very slick and as I say, is getting good reviews and good traction."

David Thomas

Case Study

Remote low FODMAP diet is an evidence-based approach to the treatment of IBS (irritable bowel syndrome) (dietetics)

Debbie Thomas, Prescribing Support Dietitian, Cwm Taf Morgannwg University Health Board

BACKGROUND

Debbie Thomas is a Prescribing Support Dietitian at Cwm Taf Morgannwg University Health Board who has been successful in encouraging take-up of the low FODMAP diet which has improved symptoms in over 75% of irritable bowel syndrome (IBS) sufferers, with many reporting that they no longer experience IBS.

Since the project began in 2015, Debbie has been offering this advice to patients in a few GP practices in Bridgend and also has run a staff pilot project in her Health Board. Symptom improvement, via two one-hour sessions, results not only in a better quality of life for patients, but also in savings on antispasmodic drugs (15% of patients), a reduction in GP consultations (82% of patients) and potentially less need for invasive procedures such as colonoscopy. Debbie's service is available across a selection of GP Practices in the Bridgend Locality of CTM Health Board, where she has also begun another pilot focusing on IBS in staff members.

Debbie is a Bevan Commission Exemplar and has received ongoing support from an improvement manager in Public Health Wales who helps with data analysis and has built a comprehensive workbook to collect and analyse data. In addition, the Bevan Commission's Adopt and Spread programme has showcased Debbie's fight against IBS and the related staff sickness rates. A pilot project demonstrated the impact of IBS on staff sickness. The 100 staff members involved in the project had collectively taken 298 days off sick (due to IBS) in the year prior to engagement. A conservative estimate of the cost of this to the organisation was £41,257.

AIMS

Ultimately, the main aim is to support the health and well-being of patients and NHS staff across the whole of Wales, who suffer with IBS, transitioning into a digital space, holding virtual sessions as opposed to face-to-face. The first step towards this was the Bevan Commission's Adopt and Spread (A&S) programme, where similar projects have been trialled in other adoption sites: Cardiff and Vale and Aneurin Bevan Health Boards.

The utilisation of virtual sessions was a step change from the usual activities which previously involved provision of hard copy (paper) information pamphlets to patients and staff whilst attending the low FODMAP sessions. Clinics were previously held in a dedicated room or within a GP practice.

COVID-19 enabled Debbie's service to move into a digital space, allowing for a larger cohort to partake of the service and mitigating rigorous traveling restrictions and logistical tasks.

"What I have learned is that we have to adapt and keep thinking of innovative ways to provide a more effective service."

Debbie Thomas

CHALLENGES

An initial challenge was developing digital materials as opposed to hard copy brochures in a short timeframe.

The main challenge was the necessity to react to any emerging problems which surfaced as a result of providing the service in a dramatically different style, and the practicalities of everyone being able and willing to engage this way, as well as having the equipment and skills to do so.

There was a clear need for agility and the ability to adapt to continuously evolving circumstances.

"Virtual consultations have made it easier to access expert advice from a Dietitian who specialises in the low FODMAP diet."

Debbie Thomas

In terms of service provision, the significant challenge was around the sheer number of IBS sufferers – estimated to be 450,000 in Wales alone.

OUTCOMES

Through the Bevan Commission's A&S programme, Debbie has been able to raise the profile of IBS and Dietetic input using FODMAPs across not only CTM, but also AB and CAV University Health Boards. Hopefully, using the data gathered from the A&S programme, the innovation can be spread further and may go some way to reaching the 15-20% of IBS sufferers across Wales.

The transition to digital communication platforms accelerated by COVID-19 resulted in several benefits, including: the ability to communicate with staff and patients at any time of the day as required; a decrease in cost of development and procurement of hard copy materials e.g. brochures; and a saving in travel time and parking for both the clinician and patient/staff member.

Great strides have been made with this innovative service provision throughout the COVID-19 pandemic because Debbie has been able to reach more people through digital engagement. Debbie is dedicated to continually adapting and providing a service to adults with IBS. With the help of the A&S programme, this could soon be available to all IBS sufferers across Wales.

NEXT STEPS

The next steps for Debbie include: continuing to adopt and spread her service innovation; development of new information sheets following the learning captured; and embracing opportunities to enhance and widen the reach of the service provision to improve health and well-being of IBS sufferers anywhere, anytime.

Case Study

The benefits of adaptability during a global pandemic

Elizabeth Thomas, Local Authority Engagement Officer for the Regional Partnership Board, Cwm Taf Morgannwg University Health Board

BACKGROUND

Elizabeth Thomas is a Local Authority Engagement Officer for the Regional Partnership Board at Cwm Taf Morgannwg University Health Board (CTMUHB) and her role is hosted by the Health Board.

Elizabeth's role is to align and coordinate activity across CTMUHB area, share best practice and facilitate communications and engagement between health, social care and the third sector to facilitate discussion with the aim of improved integration across the sectors.

CHALLENGES

Besides being a new member of the team, challenges faced included: rapid changes to the regular way of working; having limited access to colleagues and mental-health related issues which the team felt they should be working on.

With regards to carrying out the COVID-19 testing for teachers, this task had a substantial operational overhead for the team, however the support of the Army and Cardiff University helped alleviate the pressures.

The overload caused by extensive online (e.g. Teams) remote sessions was also felt at times by Elizabeth and team, as the team strived to adapt to the new work patterns and greatly reduced face-to-face interaction.

AIMS

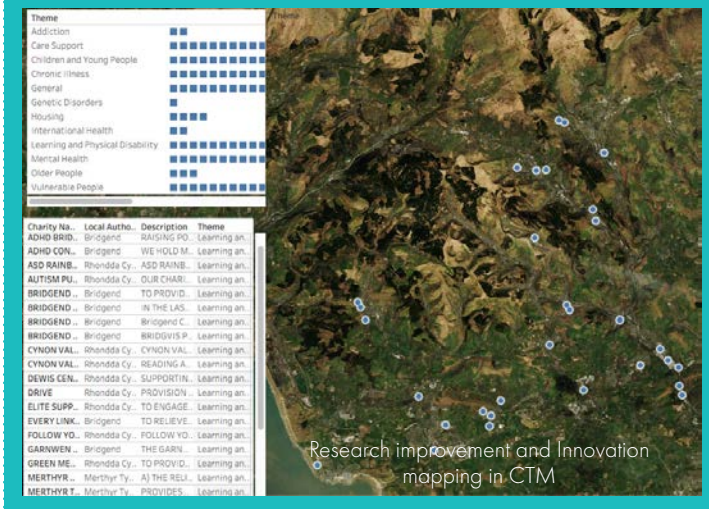
Being relatively new to her role, Elizabeth was immediately thrown into working on a number of COVID-19 related projects.

First was to assist with an AI-based chatbot called CERi, which was being developed with IBM, to assist with providing information about COVID-19 to the wider population.

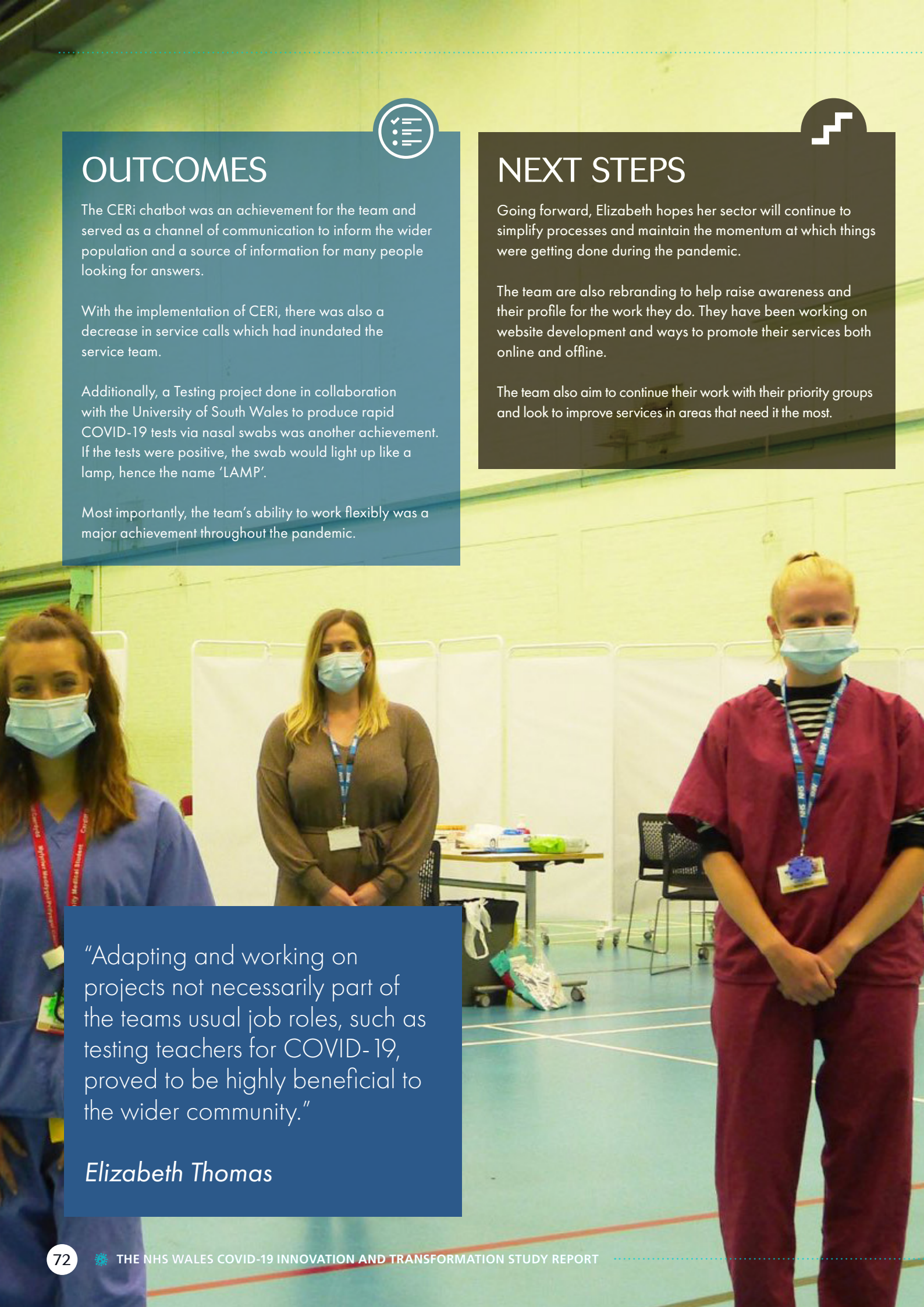
Following on from that project, Elizabeth and team were asked to assist in the administration of antibody tests for teachers, in response to prioritisation by Welsh Government.

The team worked closely with the Welsh Army to plan these activities and utilised Cardiff University medical students as needed.

As a result of their work, over 5000 teaching staff were tested before the end of the summer.



Research improvement and Innovation mapping in CTM



OUTCOMES

The CERi chatbot was an achievement for the team and served as a channel of communication to inform the wider population and a source of information for many people looking for answers.

With the implementation of CERi, there was also a decrease in service calls which had inundated the service team.

Additionally, a Testing project done in collaboration with the University of South Wales to produce rapid COVID-19 tests via nasal swabs was another achievement. If the tests were positive, the swab would light up like a lamp, hence the name 'LAMP'.

Most importantly, the team's ability to work flexibly was a major achievement throughout the pandemic.

NEXT STEPS

Going forward, Elizabeth hopes her sector will continue to simplify processes and maintain the momentum at which things were getting done during the pandemic.

The team are also rebranding to help raise awareness and their profile for the work they do. They have been working on website development and ways to promote their services both online and offline.

The team also aim to continue their work with their priority groups and look to improve services in areas that need it the most.

"Adapting and working on projects not necessarily part of the teams usual job roles, such as testing teachers for COVID-19, proved to be highly beneficial to the wider community."

Elizabeth Thomas

Case Study

Cochlear implant and remote monitoring software

Jenny Townsend, Clinical Scientist, Betsi Cadwaladr University Health Board

BACKGROUND

Jenny Townsend is a Clinical Scientist in Audiology who has been working in north Wales for over 20 years.

Her current role is in the auditory and implant service at Betsi Cadwaladr University Health Board (BCUHB), focusing on cochlear implants and hearing aids.

CHALLENGES

The team faced several small challenges including the volume of products and human resource needed to support the project, and difficulties in managing numerous changes going on all at once.

A significant issue that is yet to be resolved is that the app cannot be currently accessed on Android smartphones – only select iPhone users can engage with the technology and digital monitoring at present. However, Cochlear are working with Samsung to enable this functionality.

There were also challenges with live transcription on video calls, depending on which platform was used. While software like Microsoft Teams has the capability to enable speech-to-text, if patients do not have the right version of the programme, they cannot access all functionalities. In other parts of the UK, teams have been able to post out laptops to patients with the appropriate software on it.

An upcoming challenge is that the team will run out of patients who are able to engage in this service because the implants require elective surgery, which is non-essential. However, there are many patients waiting for treatment who the team are ready to manage and support when surgery does resume.

AIMS

In March 2020, when non-essential services stopped or reduced, Jenny and her colleagues had to act quickly to continue providing a level of service. Patients with cochlear implants in particular are very dependent on technology – if things go wrong, it is likely they will have no sense of hearing at all.

The first thing the team did was to maximise the use of video technology. This was readily and easily adopted by this group of patients. They do not typically use phones so video consultations worked well thanks to speech-to-text subtitling functionalities. The team also sought sign language interpreters to aid on patient video calls when requested or required.

In addition, Jenny and her colleagues requested to take part in a pilot project run by their supplier – a medical device company called *Cochlear* – which gave patients access to a remote care app on their personal smartphone.

Essentially, patients who owned iPhones could download an app that connected to a cloud-based portal. The app has multiple functions including: allowing the team to monitor and check the status of the implant hardware; speech tests; a questionnaire. Patients can also take photographs for healthcare staff to review alongside other information to enable them to make a decision about what the patient needs in a given situation, and whether they should attend a face-to-face appointment.

Cochlear expanded the pilot project so that Jenny and her team could adopt and spread this remote checking of implants to any BCUHB site (and across the UK). This also made it possible to carry out remote implant upgrades, with replacement hardware/devices being sent to patients through the post.

"the willingness to embrace change was really positive . . . the whole team was willing to give it a go. The amount of resistance was so much less than it would have been in any other circumstance. It was pretty amazing."

Jenny Townsend

OUTCOMES

The team had a couple of referrals over the first lockdown period where people had quickly lost their hearing and were absolutely devastated by it. The team assessed these patients remotely for surgery and only one face-to-face pre-surgical appointment was required.

Jenny and her colleagues also set up a music group with profoundly deaf people via Zoom. This additional support network will now be implemented permanently because it was such a success with users.

The willingness to embrace change was also identified as a positive. The team maintained a level of patient care that they would not have been able to do without new technologies. They fast-tracked a service much quicker than they might have been able to without the changes made due to the pandemic.

In addition, once an implant is fitted, the patient requires monitoring and support for the rest of their lives. They do not need a lot of care, but the cumulative caseload continues to increase for Jenny and the team. The use of different digital technologies means this is much more manageable. Moving towards remote care will enable the service to remain sustainable in the long-term.

This use of various technologies also gives patients more control over their life and health. Before many knew nothing and/or had no control, now the app can tell them when things are going particularly well or not with their implant, speech goals and more.

The team learned that patients can cope with more than they thought, particularly when it comes to managing their own health and well-being. From the outset there was a perception that certain patient groups would not manage appointments which were not face-to-face, nor engage in video calls - however, they did it and coped considerably better than expected. There was a small number who were unable or chose not to use digital technology, but the team believes that society's increased use of different platforms and apps during the pandemic has made people more receptive to technology generally. The team also learned that change can happen fast and that better and efficient processes are key to service transformation.

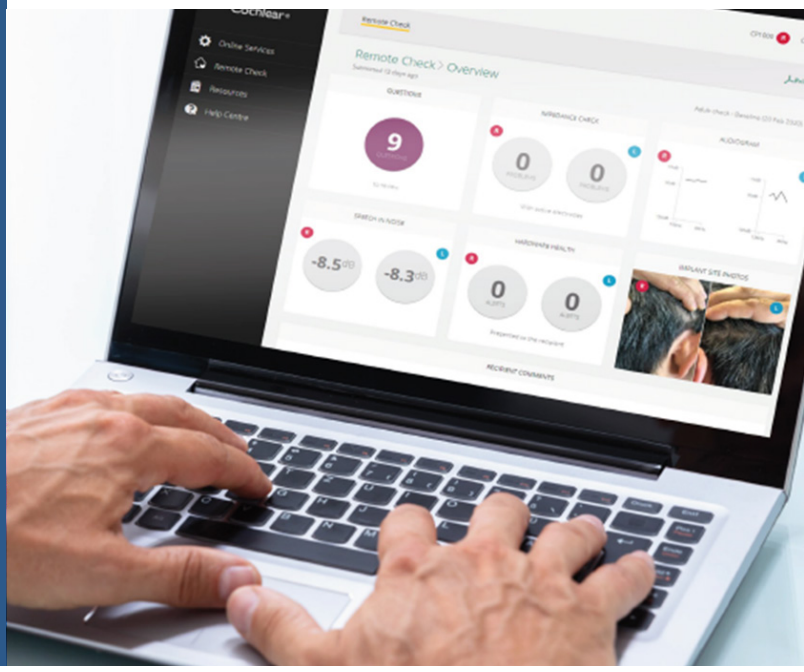
NEXT STEPS

Now, Jenny and her colleagues are looking to resolve the remote programming issue and commence some robust evaluations of the changes made.

They are keen to understand the experiences of those that engaged in the service change, so that there is an appropriate blended approach to patient pathways and engagement going forward.

"We were able to maintain the level of patient care that we wouldn't have otherwise been able to do , and I think it's important because this is the future and we skipped forward a bit quicker than we might have done otherwise. . . . So I think we need to move in the direction of remote care, because services just aren't going to be able to cope."

Jenny Townsend



Case Study

Leadership in implementation of digital patient record technology for paediatric incontinence in the NHS and the community

Jennifer Walsh, Paediatric Continence Specialist, Powys Teaching Health Board

BACKGROUND

One in every 12 children has wetting and soiling problems, but only one in three families seek help. Dealing with a continence problem can take its toll on family life and have a detrimental effect on a young person's health, well-being and self-esteem.

Jennifer Walsh is a community children's nurse and Bevan Commission exemplar. She is creating an integrated community service in Powys to support children and young people with continence issues, working with healthcare and the community.

Powys Teaching Health Board wants to tackle this issue with children and young people to ensure it does not have an adverse effect on their adult lives. A care pathway is being developed for the management of all aspects of bladder and bowel dysfunction in those aged 0-19 years old in the Health Board area. This initiative, led by Jennifer, has the potential to reduce emergency admissions by 80% and could lead to a significant reduction in consultant-led appointments (constipation/bed-wetting is among the most common reasons for referral).

In support of this vision, Jennifer has been developing a digital solution to support children with continence issues with Welsh health technology company Aparito. This solution brings together a patient-facing app which shares trusted information on how to manage these issues and enables children and young people to track their toilet activity, with a clinical facing platform.

The COVID-19 pandemic represented a timely opportunity to test this digital project. Patients were able to attend consultations online and self-manage their symptoms. The app and service provided real-time connectivity with clinicians, and allowed clinical staff to remotely manage medication type and titration. It was also a mechanism for collating data and information to allow for new electronic patient assessment.

AIMS

The aim of this project was to tackle incontinence in the community through implementation of digital technology in the form of an electronic patient record app with face-to-face, patient-clinical communication capability.

Jennifer led the team of advanced nurse practitioners and sought the development of a multifaceted app in partnership with Aparito. These efforts were kick-started at a health hack event in North Wales.

The project sought to develop one of the first online records using a new Welsh Community Care Information System (WCCIS) platform which is capable of remotely managing patients and sharing clinical diagnostic data between patients and clinicians – with the aim of self-management of symptoms, and medication management.

CHALLENGES

The major challenge around roll-out of the digital intervention was making sure that all relevant parties including clinicians, nurses, other NHS staff and patients had access to the fit-for-purpose technology required to deliver the service.

By allowing them to deliver effective service provision remotely, under the restrictions of the COVID-19 pandemic, NHS staff and patients could still continuously relay knowledge and information to each other.

"A huge positive awareness of the role that digital transformation can actually have upon service."

Jennifer Walsh

OUTCOMES

The project was a great success with many positive outcomes. The roll-out of the digital transformation resulted in more children and young people being seen and consulted by clinical staff.

Moreover, the digital transformation gave patients access to additional resources to support them. Access to NHS staff and resources – such as clinical diagnostics, reports and information – through the app meant that patients could manage their own symptoms in a way that was personalised and tailored to them. This also played a significant role in management of patient medication too.

Another major outcome of this innovation is the development and strengthening of a partnership with a technology company who have helped to reduce any challenges and negative experiences.

As a result of this project, the usual service has shifted from a traditional cyclic approach to being able to leverage digital technology to provide support at a larger scale and for a wider section of the population. Jennifer and the team have found the learning process rewarding and have grown confident with respect to developing innovative solutions to challenges.

The project has been an opportunity to translate the service provision, led by Jennifer, into a shape that is relatable to the Health Board. The team believe that through continued wider networking approaches they can make the platform accessible to a wider audience to drive change and continuity in learning and embracing opportunities – as opposed to focusing only on the negatives and challenges of the innovation process.

The app has the functionality for young people to use it as a digital diary for their continence problems, and to relay data/information to and communicate with clinicians. This enables young people to manage their condition more independently and reduces the need for face-to-face appointments.

Additional benefits resulting from this digital solution include: reduced administrative workload in the NHS; avoiding missed work/school for parents and children; and, importantly, reducing embarrassment for children and young people in communicating these sensitive issues.

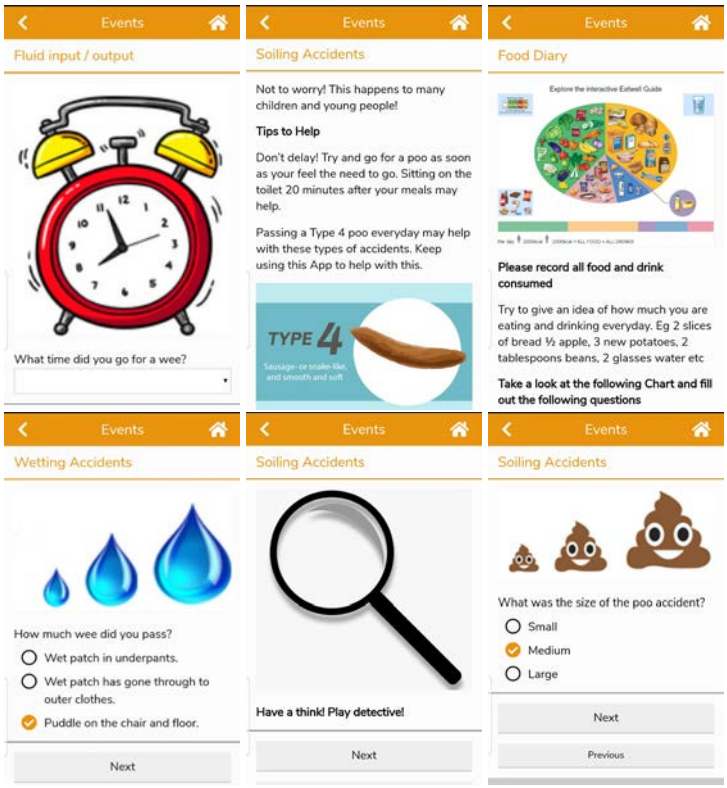
NEXT STEPS

We must recognise that there is a more efficient method of working in NHS Wales which gives more responsibility to all disciplines. Learnings from this need to be consolidated and disseminated so that solutions to challenges in NHS Wales, whether under extreme conditions or not, can translate into everyday practise and can have a long-lasting effect.

It is clear through this case that there is a need and desire to think differently to deliver high-quality services within the required governance and regulatory frameworks across NHS Wales, without the inertia of bureaucratic management structures which pose hurdles to overcome.

Trusting colleagues with the relevant skills, knowledge and expertise to deliver services through multi-disciplinary approaches and the use of technology and remotely digital platforms for communications have all been significant factors in making innovation happen. In order to take this innovation forward, it is widely recognised that NHS Wales needs to enable all employees to have a voice on how to do things better.

The clinical innovation teams have exemplified that there are means and methods to provide effective, efficient and high standard/quality NHS Wales service provision and have identified a less restrictive way of delivering. Strides need to be made to "make sure that they [NHS Wales] include all the relevant professional".



Case Study

Fast-tracking innovations such as artificial intelligence technology through NHS processes during the COVID-19 Pandemic

Dr Phil Webb, Associate Director of Planning, Performance and Innovation, Velindre University NHS Trust, Cwm Taf Morgannwg University Health Board

BACKGROUND

Dr Phil Webb is Associate Director of Planning, Performance and Innovation at Velindre University NHS Trust. His role involves managing the innovation portfolio at the Trust and leading multiple projects on artificial intelligence, virtual, augmented reality, and gamification techniques.

Phil also works as part of the innovation team at Cwm Taf Morgannwg University Health Board. He has a Ph.D. in Biology and a background in innovation. Phil's varied background and experience in innovation is enhanced by his experience working in industry for 10 years prior to working for the NHS. Currently, his work focuses on artificial intelligence and advanced computing techniques, including 3D visual techniques and virtual reality.

Working with Health Board colleagues, the innovation team looks at implementation of disruptive innovations and technology concepts for deployment in the NHS. They also work to understand the process for developing innovative ideas, and engage in collaborative efforts with other Health Boards and the Life Sciences Hub Wales.

AIMS

During the first 12 months of the COVID-19 pandemic, NHS Wales's response focused on maintaining the healthcare system. The period of time from March 2020 into the summer was seen by many as an opportunity to fast-track innovations due to the decreased capacity in the normal process and governance functions, as well as lack of hands-on staff who usually support set-up and research and development (R&D).

Throughout the pandemic the healthcare system has been keen to quickly implement and embed innovations while being mindful of NHS Wales governance processes – which were largely limited due to the burdens of COVID-19. This served as an opportunity for some to fast-track innovations at this time and "the freedom to innovate in a very rapid way, particularly if you are developing new concepts".

Now that the pandemic has started to settle NHS Wales is "*seeing a rebound effect in people previously slowing everything down because there's a governance process that has to be applied to [the] public sector – including procurement practices, [and] governance arrangements for reporting*".

There is a perceived notion that under COVID-19 pandemic restrictions the healthcare system, and public sector organisations, have evolved a capability to deliver innovation in the NHS at pace – and that the system is changed for the future.

However, Phil regards this as an "urban myth" and they are now experiencing a 'reversal effect'. It was under these conditions that Phil's team collaborated with University of South Wales to develop a new COVID-19 test.

Cwm Taf Morgannwg UHB is also the only organisation to implement an artificial intelligence (AI) technology, building and deploying this software in just four months. This technology was one of the very few examples of AI, in particular natural language processing, developed during COVID-19, that had actual users and was deployed in the NHS.

> "There's no point spending millions building something that is never going to see and end user. And that's actually the situation we are with some technologies."
>
> *Phil Webb*

CHALLENGES

Many challenges were highlighted through Phil's perspective. The first was the slowing down of normal services and functions during the initial COVID-19 wave. Although this did allow for innovation to flourish, as processes began to come back online, it meant that the rate at which innovations could be tested and embedded slowed down as governance and procurement functions restarted.

Phil and the team identified that the general challenges of implementing innovation in healthcare will be the same post-COVID-19 as they were before and during. However, an additional challenge to the pace at which innovation can be achieved arose during the pandemic as the workforce decreased due to self-isolation by 30-40%.

The team identified that synchronicity with clinical input/ leads is important though it may be lacking in some cases. It was noted that the usual barriers to innovation such as lack of synchronicity to bottom and top powers existed and that the NHS is not able to innovate at the speed of market demand, indicating again that the NHS is not currently an agile system for innovation.

Another key challenge identified by Phil was the human behavioural traits of stakeholders. For example, there were occasions where individuals' own agendas and self-interests got in the way of progress. Alongside issues with personalities and 'red tape' in governance/processes, it was indicated that the lack of thought towards commercial aspects of innovation was clear and that this is an area for more consideration in the future.

OUTCOMES

A key outcome from the work conducted by Phil and the team during the pandemic is that there needs to be more clarity and frameworks on how innovation can work its way into practice within and from outside the NHS (e.g. third sector, industry etc.). The current lack of clarity means that *"innovation projects get niched [sic]"*.

It was also identified that poor information about COVID-19 meant that staff were finding it difficult to answer questions and taking a lot of resources, sometimes unnecessarily, whereas Phil's team was able to support the build and deployment of a virtual assistant in four months. Key to this success was that it was an industry-first approach illustrating that there was a demand for this sort of platform.

The nature and size of the NHS means that, as technology quickly develops, in the future the system will likely not be able to keep up so something must be done to meet this drive.

The project has resulted in an appetite to do more innovative work, with a willingness to try things differently and be bolder, but to realise this there needs to be a radical rethink of the frameworks for supporting innovations, as well as reinforced learning, and adjustments to personalities and behaviours which fundamentally affect progress.

NEXT STEPS

The next step for Phil and the team is to leverage more academic involvement to support development, and implementation of innovations. They are also looking to develop collaborations with third sector organisations, academia and industry to serve as learning stations for clinicians – especially in the areas of digital innovation, and to develop set-ups and test beds within the ecosystem to allow stakeholders to test new innovations.

For example, the next stage and major advancement of computing is quantum computing. Countries such as China are already ahead in establishing quantum networks. Discussion is needed around a step change in attitude, behaviour and process of innovation in the NHS if Wales and the UK is to keep leveraging the benefits of evolving technology.

Case Study

The physical and virtual effects on the running of Angina clinics during the COVID-19 pandemic

Annwen Williams, Cardiology Advanced Nurse Practitioner, Betsi Cadwaladr University Health Board

BACKGROUND

Annwen Williams is a Cardiology Advanced Nurse Practitioner (ANP). Working as part of a team, Annwen provides a Primary Percutaneous Coronary Intervention (PPCI) service that provides urgent care to patients who have had a heart attack, myocardial infarction, or who are diagnosed by ECG by paramedics. In short, the role is a triage for quicker reaction for stents and focuses on getting patients into care quickly which improves their long-term life expectancy and reduces the risk of dying in the short term.

Additionally, Annwen also works with her team to run a clinic for angina patients referred to them by GPs. The team also receives referrals from the emergency department and their local hospital and pre-COVID-19 were responding and diagnosing the patients face-to-face. However, when the pandemic hit, this service was moved to telephone-based appointments, as necessary.

CHALLENGES

The challenges the Angina clinic faced were mostly related to the telephone clinic. Due to the nature of their service, telephone consultations made it quite difficult to examine patients. The team were able to ask detailed questions, however, in some cases, connection was poor.

Additionally, the team saw issues with coping with the demand for some investigations (e.g. CT, coronary angiogram) as these had to be reduced significantly. There was also an increase in waiting lists. The team attempted to combat this with medical management and liaising with GPs, however, they also saw a decrease in staff as many of their team members were redeployed to assist mainstream service areas.

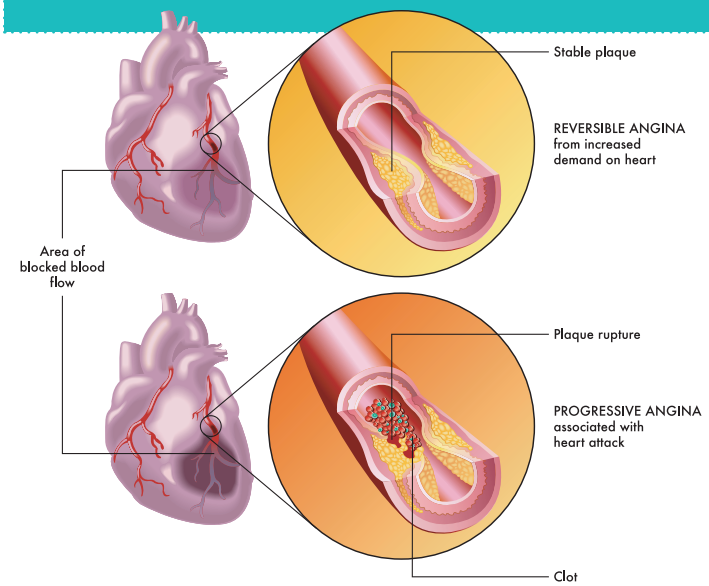
AIMS

A large number of changes were necessary to adapt a predominantly face-to-face service such as the Angina clinic, to a COVID-19 pandemic setting.

First and foremost, Annwen noted that the team increased the amount of information they required from paramedics before sending over a new patient. Due to the need to wear facemasks and respirators, many patients found it hard to continuously communicate their details so Annwen's team implemented new, detailed forms to ensure the paramedics provided them with as much information as possible.

Practically, the COVID-19 pandemic also had a significant impact on the donning and duffing of PPE. This resulted in the team having to factor in an additional 10-minute time to the patient's pathway to ensure they met regulations. To mitigate the impact of such procedures, the team created and implemented training scenarios each time in the theatre to ensure pathways were as smooth as possible for each patient.

For patients that could be seen virtually, Annwen's team opened a telephone connection and extended their clinic virtually, with ECGs after the phone consultation. This was a major adjustment as, in many cases, it was harder to examine the patient over the phone and follow-up calls with GPs and other departments and clinics were necessary.



OUTCOMES

The ability for Annwen to provide changed services and support at a faster pace was made possible by the increased flexibility enabled by innovation service changes, with additional budgets to IT enabling better infrastructure and services linking – for example, ECG with emails.

The improvements in the infrastructure, as well as committed managers and teams, translated into improved support to patients at home through telephone clinics – helping reduce the burden on the hospital wards and providing the best care intervening at a pace at least equal to pre-COVID-19 levels – as well as in better support among colleagues.

Annwen also highlights that, for many patients, contacting the clinic is not just about the medical condition, it is also a way of communicating with other people and of obtaining necessary support; to be able to provide reassurance, a plan of care, or even just basic advice over the phone was crucial and very rewarding.

Additionally, Annwen has seen an increase in patients buying certain equipment for use in their home and the clinics have been able to provide them with confidence to regularly use their equipment and to manage their systems remotely and their own care. This has significantly decreased the number of patients needing face-to-face care.

NEXT STEPS

The main priority for Annwen and her team over the coming months is to continue to provide services and to evaluate increasing the number of cardiology and angina clinics – however, due to COVID-19 restrictions there are limited rooms that can be used for the physical return of clinics so this may have to remain virtual; to continue with their improved model for triaging patients within prime PCI services over the phone, which saves time when patients go to the hospital. Additionally, the team will be working on getting a system where patients can easily get ECGs without having to double-check, and to try to ensure access to these in secondary care. The team will also continue to liaise with primary care and working with them to provide better care.

"With telephone clinics and being able to support patients at home . . . it is not just a chance, it's communicating with somebody else. You're able to give them some reassurance or a plan of care so they know there's something happening or changing and being able to manage their care at home. You are advising them, which we would do in a clinic normally, but good advice and over the phone and helping them to try and manage whatever symptoms they've got or having a plan of action . . . so they don't feel left out."

Annwen Williams

Case Study

Ensuring an evidence-based focus on mental well-being during the COVID-19 pandemic

Jackie Williams, Senior Health Promotion Specialist, Public Health team at Aneurin Bevan University Health Board

BACKGROUND

Jackie Williams currently works for the local Public Health team as a Senior Public Health Practitioner in Gwent, within Aneurin Bevan University Health Board (ABUHB). Jackie is employed by Public Health Wales but is based within a local team.

She has been working in public health for over 30 years and has been based in the Gwent/ABUHB area for 18 years, working on a variety of topics including mental well-being, suicide, and self-harm prevention.

Regarding her role in promoting mental health and well-being, Jackie provides advice to the Health Board and wider partners on best approaches to promote and protect public mental well-being after considering the evidence available/good practice and understanding the local context.

Additionally, Jackie ensures that the needs of groups of the population at greater risk of poor mental well-being are being addressed by taking a proportionate universalism approach. This ensures that programmes which seek to promote mental well-being also focus on addressing inequalities, and they are not isolating any groups or increasing existing inequalities.

Jackie also prioritises partner and public engagement. She then comes up with appropriate recommendations. These recommendations are then discussed at a more strategic level within the partnership groups and priority areas are identified, seeking support and funding, if appropriate.

AIMS

At the start of the pandemic, the Aneurin Bevan Gwent Public Health team were redeployed to support the Aneurin Bevan University Health Board's response to COVID-19. Jackie's initial role was supporting internal communications for Health Board staff, ensuring they knew about COVID-19 policies, procedures, etc.

Prior to the pandemic, Jackie's role had predominantly focused on promoting mental well-being and suicide prevention. As the pandemic progressed and evidence emerged of the potential negative and disproportionate impact of COVID-19 on population mental well-being, Jackie flagged this significant priority to colleagues. She requested whether she could take time out to reflect, look at the research that was emerging, and come up with a plan on what the Health Board should be doing to address the growing evidence around the consequences of COVID-19 on mental well-being. This proposition was accepted, and Jackie quickly set to work. With new research highlighting additional vulnerable groups and areas of the population that were now at risk of experiencing poor mental well-being, such as front-line staff, Jackie, with the support of her team and Health Board Executives agreed a plan to ensure that the local community had easy access to self-help information and resources and that they could readily promote and protect their mental well-being. This initiative took the form of a website and another member of the local public health team (Emma Palmer) worked with a designer to ensure this product was easily accessible and appropriate for their target audience. A multi-agency editing group ensured the resources it included were evidence-based and consistent with the resources being shared nationally by Welsh Government and Public Health Wales.

In addition to the website, Jackie and her team commissioned an evidence-based workforce mental well-being training programme called Connect 5. This programme is based on the principles of Making Every Contact Count (MECC) and aims to provide the well-being workforces with knowledge, confidence and skills to have effective conversations about mental health.

CHALLENGES

During the pandemic, the local public health team were faced with staff resource related challenges as the team were having to support the Health Board and local partners in the response to COVID-19. The team worked hard in their response and put in many additional hours to ensure their success. Additionally, some members of the team often had to work independently, with limited support, as their managers were extremely busy leading the development of new systems and programmes, such as Test, Trace and Protect Centres and Mass Vaccination Centres.

OUTCOMES

Following on from her work, Jackie is pleased to have achieved an overwhelming amount of support from local partners for a Central Point of Access: a website for mental well-being information and resources. The website: Melo Cymru was launched in January 2021 and has been really well received. It contains a wide range of resources in different formats. It is bilingual and has a tool which enables wider accessibility for people who have low literacy levels, Dyslexia or if English is not their first language.

Additionally, Jackie is pleased that she was able to achieve buy-in from the wider partners for the workforce training programme. A cascade (Train the Trainer) model of Connect 5 was commissioned and to date over 30 local partners have been trained to deliver this training programme within their own organisations. Additional funding was secured to commission Third Sector providers to deliver training to partners who do not have access to in-house trainers. The training programme has been tailored for Gwent workforces and has been rebranded locally as Gwent Connect 5. The ambition is that promotion of mental well-being becomes everyone's business, not just the business of the Health Board and mental health professionals.

Jackie is currently working with large local organisations/ workforces to support them to recognise the importance of staff mental well-being and ensuring their workforces can have conversations about it in the workplace rather than referring immediately to GPs or Occupational Health teams.

NEXT STEPS

Looking to the year ahead Jackie is excited as the programme has received much local support, and the team have secured Welsh Government Transformation Funding, in addition to local funding.

The focus for the year ahead is on three priorities. Firstly, increase the accessibility of the website and increase engagement with the resources on the website. The team will be testing digital solutions to increase brand awareness, including launching Melo social media, and working closely with local partners. Secondly, increase access to Gwent Connect 5 training and secure a sustainable model of the training programme. Finally, undertake community engagement with groups of the population at greatest risk of poor mental well-being to ensure that they have access to self-help resources, particularly groups who are digitally excluded.

In tandem, the Team will be engaging as much as they can with local partners and working alongside the Gwent Integrated well-being Networks, to promote system change so that the promotion of mental well-being is seen as everyone's business.

Finally, Jackie notes that the biggest challenge going forward will be to extend the reach of the Foundation Tier/self-help resources through non-digital channels and making sure the information and resources are as accessible to as many groups of the population as possible, particularly those who are at greatest risk of experiencing poor mental health and well-being. Jackie recognises it is much easier to get the information out there via their Melo Cymru website.

"I think the biggest challenge going forward is being able to extend the reach of our self-help information and resources to groups of the population who need them the most. Those who are at greatest risk of poor mental well-being, particularly people who are digitally excluded or do not feel able to prioritise their mental well-being, for whatever reason. It's easy to get the information out there digitally, through our website and through Facebook, Instagram, and Twitter, but it's those groups of the population that don't have access [to those avenues that will need it too]. As soon as Lockdown's lifted, something that we're really going to focus on is getting our self-help resources out there physically as widely as possible."
Jackie Williams

Case Study

Finding a balance between the treatment of COVID-19 patients and high-risk respiratory patients during the COVID-19 pandemic

Dr Ruth Williams, Respiratory Consultant, Cwm Taf Morgannwg University Health Board, Princess of Wales Hospital

BACKGROUND

Ruth Williams is a Respiratory Consultant at the Princess of Wales Hospital. She has an interest in Interstitial Lung Disease and Lung Cancer and is also a key oncology lead for the Hospital.

At present, Ruth is one of the only practitioners responsible for the sickest COVID-19 patients at the Princess of Wales Hospital.

AIMS

Prior to the pandemic, Ruth and her team began attempting to minimise patients coming into the Hospital for clinic appointments and were beginning to use more of a MDT approach to managing respiratory patients with particular types of lung problems such as interstitial lung disease, fibrosis, or scarring of the lung.

The historic approach was that these types of patients would all need to be seen by consultants and remain on the consultant schedule for routine face-to-face appointments.

When the pandemic hit, Ruth and her team had already started working on an MDT focused approach that utilised pharmacists to virtually assist in monitoring patients who were on medications. When the pandemic hit, the details of these plans were put on hold and have yet to progress. As a result, they quickly adopted the concept of virtual monitoring, and the team carried out many more virtual appointments to help their patients limit exposure and avoid face-to-face interaction.

This approach also allowed the team to utilise other MDT members, such as specialist nurses and pharmacists, to support the service which was quickly being bombarded with COVID-19 cases.

CHALLENGES

As part of the respiratory community, Ruth and her team saw several challenges throughout the pandemic.

As COVID-19 is a respiratory disease, Ruth's team were some of the first to get involved with caring for patients. When the number of patients started to decline, the team were able to do more general research around the disease. However, in parallel, the team lost the ability to do non-COVID-19 related respiratory work and both work and research in other areas took significant hits.

Another challenge the team faced was related to their patients' fear of attending face-to-face appointments due to the perceived high-risk of contagion. Thankfully, this challenge was easily combated with virtual consultations and appointments, and the team quickly switched to using software as well as telephones to avoid bringing their patients in unnecessarily. Ruth notes that she found running virtual clinics to be more time effective and allowed her to see more patients than a standard clinic. Additionally, virtual clinics allowed the team to utilise their MDT staff such as specialist nurses and pharmacists, to help support the clinician. On the other hand, the team highlights however the challenges involved in the use of the digital technologies by the patients, who would have benefited from additional support.

Finally, Ruth highlights how much the team have been impacted- both mentally and physically – more than most of other medical service staff throughout the pandemic; from September the team has been under pressure from the second wave of the pandemic, which forced them to cut back on the outpatient work earlier than other specialties due to the additional acute work necessary.

OUTCOMES

Ruth notes the difficulties in balancing the substantial, high risk outpatient population with the acute COVID-19 infected patients, particularly because their team was stretched so thin, but by utilising the wider respiratory team, they were able to do both, and she is incredibly proud of what they achieved.

The team was able to seamlessly and rapidly use the technology provided, such as the NHS's Attend Anywhere platform. The training provided to their staff enabled them to quickly deploy the technology, although the patients' side of the technology's effective adoption and use would require further evaluation to improve digital inclusion and uptake.

There is a need to strike the right balance between care for the COVID-19 patients and care for the other non-COVID-19 patients. Ruth noted an interesting dynamic unfolding, whereby the patients have started to manage their conditions more actively, when the team took a step back from them, which shows that, through the adoption of virtual consultation and online follow-up approaches, patients may acquire increased autonomy in following their plan, thus decreasing the burden on staff.

The success of this case highlights the need to decrease the barriers to innovation, as well as its acceptance and encouragement, and to create the right environment that is conducive of positive long-term change to increase effectiveness of health care.

NEXT STEPS

Additionally, Ruth will be evaluating approaches toward cementing the roles of the respiratory pharmacist and of the physiologists in supporting the respiratory service for the benefit of both patients and the wider respiratory network.

Additionally, Ruth will be working hard to ensure the team does not revert to the old, consultant led approach with patients being brought back into the hospital for every clinical appointment, instead focusing on how to increase the patient's autonomy and self care in combination with secondary care support and virtual follow-ups, which will free up their time to address more patients as well the new stream of patients expected with post COVID-19 complications (such as lung fibrosis).

The team and wider NHS staff should, in future, reflect on the experiences and learning of their teams in relation to increasing the uptake of digital technologies for virtual interaction with patients, as well as in relation to increasing multidisciplinary approaches to health and care, and capitalise on opportunities to transfer such learning across the Health Board and different departments. The buy in from the hospitals and Health Boards, as well as increased openness from colleagues who may be initially more resistant to change, is vital for long term transformation to happen.

"[When COVID-19 hit], a lot of activity was put on hold and a lot of patients probably suffered as a whole. . . . [W]e've been trying to make that balancing act between treating sick patients with COVID-19, while also ensuring that the other patients who are under our care are not forgotten and their needs are still being met. Equally, on a positive, we found that when we were taking a step back from patients and giving them more autonomy to manage their own conditions, by and large, a lot of them did it. I think that showed us that we didn't have to go back to being so kind of involved in every step of their plan and that they could take more autonomy and more control over their illness and their health care needs. I would be quite keen to continue that and not revert back to the almost handholding that we were doing for some of them."

Ruth Williams

Case Study

Streamlining incoming heart failure patients' clinic services: innovation through tele-consultations & patient pathway mapping

Dr Aaron Wong, Consultant Cardiologist & Heart Failure Lead, Cwm Taf Morgannwg University Health Board, Neath Port Talbot Hospital

BACKGROUND

Consultant Cardiologist and Heart Failure Lead, Dr Aaron Wong, leads cardiac services for a district hospital (Neath Port Talbot) with over 300 beds, providing health and care provision for over 150,000 people. The cardiac service team is very active and supports health and care provision for approximately 300,000-500,000 cases per year at various hospital sites, and to more than 100,000 patients in the community.

Due to the complex and growing burden of the COVID-19 pandemic, there was a need to adjust the set-up and pathway for cardiac patients entering the Hospital for observation and treatment. In light of this impending challenge, the team relocated cardiac services to a local community hospital and established a tele-consultation service so that patients could be consulted remotely.

The team is multi-disciplinary, made up of clinicians, specialist nurses, staff nurses and pharmacists that share an office space. Now, they are able to meet more regularly for troubleshooting, for example if nurses/other staff need to consult a clinician regarding guidance and appropriate care, there is a much quicker turnaround time, making decisions more efficient and streamlined.

AIMS

This case study involved the set-up and delivery of tele-consultations for heart failure patients, to manage the volume of these high-risk individuals being admitted to hospital during the COVID-19 pandemic. It was important that the team revised the patient pathway for patients with heart failure visiting hospital sites to reduce the risk of COVID-19 exposure to an already vulnerable group, as well as avoid additional complications and prevent exacerbation of other issues experienced by patients with advanced heart conditions. The team relocated their cardiac services to a district hospital and mapped the physical patient pathway at the hospital to minimise risk of cross-exposure. The team was allocated a section of the outpatient clinic near a distinct section of the car park (10 yards from site) which minimised COVID-19 exposure and provided the patients with enhanced access away from the main Hospital.

In parallel, the team aimed to provide support for GPs and local pharmacy managers, to ensure holistic support for patients and transfer the relevant patient record/history and medication details/prescribing information.

The pathway: the patient is contacted by the hospital administrator 24-48 hours prior to their appointment. The administrator runs through a stringent checklist of symptoms with the patient.

Upon arrival in the car park, the patient calls reception to notify them of their arrival. The patient is advised to remain in their vehicle until a health care assistant in personal protective equipment (PPE) greets them and checks their temperature, ensuring the patient has their own mask before entering the clinic. If the patient arrives without a mask, the healthcare support worker (HCSW) provides one for them.

The patient is accompanied to a waiting area where social distancing measures are in place. Undertaking COVID-19-secure restrictions/standards, the patient attends their appointment and has clinical imaging/scans if appropriate, followed by a consultation with the relevant clinician(s) so everything the patient requires can be conducted in one hospital visit.

Aaron Wong's cardiac services team recognised the potential detriment of reducing service provision for patients in this very vulnerable group and so continued to see patients, realising that if patients were not treated in a timely and appropriate manner, they would end up hospitalised and most likely contract COVID-19. Aaron Wong stated that if these patients are infected with COVID-19, *"there is a more than 50% chance that they will not survive"*.

In parallel, the team collected data on hundreds of patients using the service to analyse, evidence success and report.

CHALLENGES

Heart failure clinical service provision is complex as patients can often suffer from other medical issues, and the team faced several challenges when implementing the change. Even though this case highlights the opportunity to do clinics over the phone, the complexity of heart failure made it difficult to initially work virtually.

A major challenge was a result of changing communication methods within the clinical services team as an alternative to the usual face-to-face meetings.

To meet this challenge, the teams communicated via telephone and digital platforms such as Microsoft Teams in addition to emails, so that guidance and advice on patient management could be implemented in practice just as efficiently and effectively as during face-to-face consultant engagement.

A second challenge was the increase in control and responsibilities delegated to nursing staff. Nurses were required to provide a six-monthly report giving their perspectives on the overall well-being in their clinical area. This highlighted that they were experiencing increased levels of stress and fatigue from the increased pressure and responsibility of having to make decisions on patient management without the usual face-to-face support of a consultant. The additional responsibilities of decision making, assessing, and managing high volumes of patients proved challenging and appeared to evidence an overall decrease in well-being.

These factors might also have been exacerbated by reduced team meeting frequency where staff would usually voice any tensions or stresses. Some long-serving staff members, who are used to the routine of having consultants in close working proximity to rely on, also found this change of routine and adapting to working more independently and autonomously, challenging.

Finally, communication between elderly or cognitively impaired patients without a carer or family support was challenging because decisions were made via telephone communications rather than face-to-face consultations. These therefore relied on patients' knowledge and understanding of their own symptoms/condition and their ability to manage it.

OUTCOMES

Patient engagement and management, guidance and advice via tele-consultations was successful and saved patients and families time travelling to hospital for a consultation while preventing exposure to COVID-19 and other illnesses.

Providing enhanced clinical experience through medicines, support, guidance and consultations to a vulnerable group of patients who are at increased risk during the COVID-19 pandemic, as well as driving efficiencies in NHS Wales, were further positive outputs.

The provision of services helped in caring for all age ranges including the elderly. The innovations described in this case also provided opportunities for staff in the team to build their experience and take on roles with increased responsibility and learn about accountability.

The innovation also presented opportunities for new ways of running clinics and built confidence to implement telephone/virtual clinics. The team will not revert back to the pre-COVID-19 era of working and are looking to adapt permanently.

Preliminary data and evidence demonstrate a reduced number of patients entering hospital, reduced mortality rate and improved symptoms and heart function. Other data collected included blood test data – for example B-type natriuretic peptide (BNP)* – which showed a significant decrease in levels of blood BNP. This correlates to evidence of increased patient well-being (feeling better) and a lower remission rate when compared to national statistics.

A further positive outcome was the optimisation of patient medication through improved integration, team-working and resilience with local pharmacies and GPs.

*The BNP test measures the level of the BNP hormone in your blood. High levels of BNP suggest heart failure.

NEXT STEPS

Plans are in place to continue data acquisition and analysis. Once consolidated the team aims to publish it.

The team will continue to use this impactful approach throughout COVID-19 pandemic (and beyond) and produce a business case and consolidation of knowledge, findings, and best practice/lessons learned to share with the cardiac network, thus showcasing and exemplifying this innovation's ability to improve clinical and operational function by saving hospital time/resources and patient mortality rate. The team recognises the need to change the mindset, culture and appetite to trial and implement innovation and transformation of NHS services.

This project represents an inroad towards changing this dynamic but there is a long way to go. In order for innovation to be realised, the vision needs to be shared with non-medical/clinical managers, and gain traction while bringing colleagues and teams closer together.

This case also represents how important it is to promote/encourage confidence in staff to step out of their comfort zone; learn from others who have made such changes; and reap the benefits at a faster pace to enable adoption and spread of innovation regionally, nationally and internationally.

"If these patients are infected with COVID-19, there is more than 50% chance they will not survive."

Dr Aaron Wong

Our Research and Evaluation Team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This independent report has been prepared by a team of academics, researchers and practitioners from Swansea University School of Management (SoM), Swansea University Medical School (SUMS), the Accelerate HTC programme, the ARCH Health Board partnership, the Bevan Commission, for and on behalf of Welsh Government and Aneurin Bevan University Health Board (CONTRACT Ref: 001/10/2020).

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REFERENCE GROUP

The NHS Wales Innovation Leads group was used for external reference.

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