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Welcome

The unprecedented events of the past few months have resulted in some of the most significant transformations in healthcare provision ever introduced. In the space of a short period of time the healthcare industry has been forced to adapt and respond to the Coronavirus outbreak and in many instances technology has played a huge role in facilitating that transition.

From tele-triage and video consultations to remote monitoring and staff collaboration, health technologies and digital solutions have been rapidly adopted in order to allow healthcare organisations to introduce socially-distanced care pathways and manage health populations during this extremely difficult period.

During this time we have seen HealthTech thrust centre-stage as healthcare practitioners and patients rapidly adapt to a new way of delivering care. From our perspective we have seen more traction in terms of healthcare technology adoption in the past 3 months than in the last 5 years, and as the questions start to move towards how we can sustain this momentum, this edition of the Journal brings together a complete range of articles that look at the many ways that technology has been used to help and support healthcare provision during the Covid-19 outbreak.

With the landscape changing rapidly, we are striving to support our audience with daily updates on thejournalofmhealth.com and we will continue to ensure that we offer valuable resources that can help support healthcare providers implement digitally-supported care pathways.

Also, in this issue we consider the key aspect of patient satisfaction and the way that digital solutions must meet the multifaceted requirements of end-users. Patient and user experience are ultimately the most critical measures when it comes to understanding and managing the success of digital transformation projects.

We would also like to take this opportunity to thank all the healthcare key workers, who make up such a huge proportion of our audience. The commitment and devotion that so many of you have shown during this hugely challenging time is formidable and greatly appreciated!

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Consolidated Data is an Essential First-step Towards Delivering Effective AI Health Initiatives

Technology-enabled tools are being adopted in healthcare for their potential to improve population health, reduce hospital readmissions, cut operational costs and enhance the accuracy of clinical outcomes.

Increasingly many of these solutions are beginning to harness artificial intelligence (AI) and machine learning techniques, and across a wide spectrum of medical specialities these types of algorithm-based technologies are beginning to have a measurable impact on diagnostic efficiency and accuracy. We are now at a point where technologies have matured sufficiently to be able to transform healthcare for the better, by automating clinical information analysis and streamlining workflows, thereby improving patient care and outcomes.

However, for healthcare systems, AI and machine-learning driven technologies are only effective when an organisation has implemented measures to compile a robust and accurate data landscape. Healthcare providers can only achieve the best clinical outcomes when quality clinical information can be made acces-

sible to AI and machine learning tools. This is where the solutions of a content services and enterprise imaging provider, like Hyland, can provide healthcare organisations with the data foundation, and information interoperability, necessary to fuel AI-driven health initiatives.

"Applying AI, machine learning, analytics, and population health tools to partial or inaccurate data sets will yield less than optimal results. And, the unfortunate truth is the clinical data that resides in most health systems today is woefully incomplete and disjointed." comments Susan deCathelineau, Senior Vice President of Global Healthcare Sales and Services for Hyland.

"More often than not, digital clinical information is compartmentalised in multiple proprietary and unconnected siloes. In many instances, the critical clinical stakeholders in an institution are not even aware much of this information exists. Achieving optimal results from any analytics initiative requires organisations to implement a thorough data discovery, consolidation and integration effort that then provides them with a solid founda-

tion of clinical content to which analytical algorithms can be applied."

To achieve optimal results, healthcare providers need enterprise medical imaging and enterprise content management technologies that can connect semi-structured and unstructured content to enterprise systems like electronic patient record (EPR) systems. Only by having this interoperable data foundation, feeding relevant information, from disparate sources, are providers going to be able to deploy AI and machine learning solutions effectively.

Achieving this type of data consolidation requires close partnerships between technology vendors and healthcare organisations that bring together the necessary expertise capable of consolidating, often vast, existing data sets.

By effectively combining data, healthcare providers can see benefits across the whole organisation, and create a framework that can enable true health data interoperability.

EPR systems have become a significant source of digital clinical information in

many hospitals and health systems. EPRs are designed to capture and manage structured clinical information and most do this job exceptionally well.

However, the capabilities of these systems are limited when it comes to handling unstructured and semi-structured patient information. This is problematic when you consider that the vast majority of a patient's medical history isn't inherently captured, or stored, in an EPR. This issue is exacerbated when you consider some healthcare providers fail to look beyond the EPR when it comes to evaluating a patient's medical history.

Enterprise content management systems have predominantly been used by healthcare organisations to digitise unstructured data like clinical notes and transcripts, emails, faxes, photos and other sources of patient information, but often these remain partitioned within specific departments, leading to a further fragmented data landscape.

One of the biggest challenges in this data equation is providing secure access to the massive amounts of medical imaging data that health systems have accumulated. This imaging data comes in a variety of formats and is largely stored across disparate systems and archives. These assets include surgical video, endoscopy, dermatology photos, wound images, pathology studies, and more, whose native formats range from JPEGs to TIFFs to MP4s. Consolidating these images into a single source, and anonymising the data, for AI and machine learning purposes can be tedious and time-consuming.

Therefore, enterprise medical imaging and enterprise content management (ECM) technologies that connect these disparate sources of semi-structured and unstructured content to enterprise systems like EPRs are essential to properly feed AI, machine learning and predictive analytics initiatives.

"Our customers rely on Hyland Healthcare enterprise imaging solutions and expertise to not just manage, but curate their medical data for clinical and research purposes," says Chris Magyar, Senior Manager of product management at Hyland Healthcare. "They use our AI-powered visualisation tools to enhance the diagnostic confidence of

imaging professionals around the world, help AI streamline clinical workflows and automate repetitive tasks."

Case Study: Yale New Haven Health

Evidence of the impact interoperable ECM and enterprise imaging systems can have on pioneering AI and population health efforts are just beginning to emerge.

Yale New Haven Health is one example where the power of this type of interoperability has been illustrated. As part of a research endeavour the provider developed APIs that allow head and spine CT imaging data to be pulled directly from its vendor neutral archive (VNA) and run through AI algorithms to determine ways to improve workflow efficiency in the ED.

This process allows for large volumes of imaging data to be analysed rapidly. With the VNA interface, CT scans are randomly sampled, aggregated and anonymised in an automated fashion. If staff members had to complete this step manually, it would take five to six hours to pull and aggregate each study for the AI tool.

The standards-based vendor-neutral nature of enterprise imaging solutions also helps support broader population health initiatives by providing a platform that facilitates image sharing among different locations within a health system as well as with other healthcare providers within a region. This capability not only streamlines continuity of care for a patient but also helps to ensure regional population health initiatives are infused with the most

comprehensive set of patient imaging data possible, regardless of origin. Breaking down imaging silos leads to more robust data sets, and more robust data sets provide more accurate results.

When you successfully consolidate unstructured clinical content and link it to core enterprise systems, you create a framework that can enable true health data interoperability, which means that vendors can come and go, and the health data itself remains intact.

Exponential Potential Benefit

AI is taking root across many industries at a rate that is 10 times faster, and 300 times the scale, of the industrial revolution, according to a recent report by the McKinsey Global Institute. Although McKinsey says that AI adoption in healthcare is currently at a rate lower than other industries, the overall impact of AI could be 3,000 times that of the industrial revolution.

"The healthcare industry will need to adapt its care delivery processes appropriately to successfully navigate this transformation. Combining content services with enterprise imaging solutions gives organisations the opportunity to connect all their unstructured data and create a single enterprise repository of patient-centred content that can feed AI-based technologies and improve outcomes," concludes deCathelineau.

To learn more about building a consolidated clinical information landscape visit *www.hyland.com/en-gb/healthcare* ■

Digitally Empowered Patients

In our digital-first society, we now use our smartphones for a plethora of things. It has become an extension of our lives – connecting with loved ones, managing business affairs, capturing memorable moments and so much more. They are trusted with our most valuable digital information, including our finances. It makes sense, therefore, that they are also now becoming part of our healthcare journey and arguably have been since the introduction of Fitbit, seeing users take control of their basic health statistics (even more so with the introduction of the Apple Watch ECG app in 2018). Health organisations, including the NHS, have already started making the most of the opportunities ever-evolving technology is opening up, developing and innovating to help use data for good.

Amanda Payne, head of government services at strategic UX agency, Nomensa, explains why we should be empowering patients and putting the control back into their hands.

We know that digital technology gives us the ability to put the control back into the hands of the patient and join up the patient journey. This is one of the reasons why the NHS has several approved third-party apps that allow users to centralise their information – from GP appointments, test results to allergies and more, giving them a full picture of their healthcare when addressing medical professionals, carers or in some cases for those with complex needs, family members. However, as with wider healthcare solutions, this is initially approached at a centralised level and then pushed out on a regional level. After all, from a trust perspective, regional bodies have the insight to better understand their patients, their needs and the ability to deliver a low-cost solution that matters.

Any medical professional will tell you that the best way to treat any illness is through preventative measures, where possible.

Although healthcare professionals can certainly play a key role, the patient must be on board to achieve measurable results. According to the Centers for Disease Control, chronic diseases are responsible for seven out of 10 deaths in the USA annually, and accounts for 75% of healthcare spending. Yet a large percentage of these (including heart disease and diabetes) can be combatted with a close focus on health, with the patient and medical professionals working together. If this technology can carefully place the control back into the hands of the patient and more individuals use data insights to connect and understand the full picture of wellbeing, it'll help to reduce the stress and financial strains of the NHS in particular, thanks to reduced spend on treatments, shorter appointment times and more.

Digital as a Driver of Social Care

On a social care level, this can also be truly transformative for patients and NHS bodies. Local councils and healthcare trusts, in particular, are continuously looking for ways to keep people in their homes for longer and keep them safe whilst doing so. This can involve voice technology in the home to provide reminders for essential medication, sensors to detect unusual movements or apps to track water consumption to avoid dehydration (a key cause of hospital admittance for those with complex needs). This also benefits carers (often operating on an agency level) and family members supporting the patient, providing a wider picture of health and improved communications, particularly for shift management and support cross over.

Getting the data landscape right

Although the control can be put in the hands of the patient, health-

care professionals are not yet necessarily able to see this information on their system. Data is pulled from different places in the NHS which means that for those patients who see numerous doctors, the technology is not currently as streamlined as is the case for the patient. However, healthcare bodies have recognised this challenge and a solution is currently in development. While progress is undoubtedly being made in this area, but we cannot disregard patient wishes. For example, many members of the older generation may not want to put their healthcare in the hands of smart technology or may not fully understand its capabilities, and accessibility is a key consideration for all of this. For example, if the user experience is not optimised for use, this will be a major breaking point.

Regardless of accessibility, work still needs to be done to break down barriers of usage. We have an increasingly ageing population in the UK and for those who require higher levels of care or are suffering from complex health needs, this technology can be revolutionary. Yet, it's important to pose the question – whose responsibility is it to shape this digital experience for the patient? Does this come down to the already time-poor medical professionals or should we be looking elsewhere if we want to truly digitise the patient journey? We've seen significant development in healthcare technology in recent years including big data, artificial intelligence, mobile technology and more, this hasn't been fully integrated into daily healthcare practices UK wide – yet. To truly see change, silos will have to be addressed and collaboration is key. This will involve better communication between digital systems, as well as with varying bodies operating within the NHS to shape a system that could be fully accessed by medical professionals, carers and individuals alike.

Although the US is often regarded as the frontrunner in this

race, the UK is working hard to improve the patient experience with digital at the core. It has reportedly committed £150 million to develop healthcare technology, reinforcing its position with policy changes to encourage development (including tax credits for research and development biotech companies). However, other countries also making strides in this area include Canada, which is currently at the forefront of stem cell research; China, investing $140billion in reforming its health and biotech sectors; and also, India, with the introduction of bold new government initiatives and international company buy-in.

In summary, by offering control and greater data insights to patients around their state of health, it's arguably relieving pressure from the NHS. We know that hospital resources, including hospital beds, are limited as of late, but intelligent data and technology aims to reduce this stress by giving patients greater control of their healthcare. For example, Fitbit was once described as a 'check engine light' for the body and has been used by cardiologists to monitor patient activity levels and heart rate, alerting doctors to signs of trouble. It's also one of the reasons it's utilised by healthcare insurance providers, keeping general wellbeing at the forefront. This technology, alongside NHS approved applications, can help speed up the check-up process too, helping to alleviate stresses of time-poor individuals whilst maintaining a positive patient experience, making them digitally empowered.

About the Author

Amanda Payne, Head of Government Services at strategic UX agency, Nomensa, works closely with healthcare clients including NHS Digital and more, contributing to award-winning projects with a digital-first mentality. ∎

COVID-19 The Impact on Digital Health and Future Considerations

Dr Janak Gunatilleke, CEO at Mindwave Ventures, reflects on the effect COVID-19 is having on the UK NHS and what that means for digital health.

Thinking through the present operational challenges, restrictions imposed by lockdowns and changing attitudes and behaviours, it appears that digital health has been provided with an opportunity to prove its worth. I believe that, in order for digital health to have an impact that is both meaningful and sustainable, we must look ahead at both the medium term (six months from now) and the longer-term (one year from now).

Until a couple of months ago, the digital health sector has been struggling to scale their products and innovations. The NHS has always been cautious (rightly so in some cases), with decision making slow and with many layers.

In addition to the catch-22 situation of requiring evidence (and having to find early adopters to get the evidence), getting budgets approved could be challenging, especially where benefits were delivered in the medium term or in a location in the healthcare ecosystem different to the 'budget holder'.

All that has changed with COVID-19

The effect it is currently having on the digital health sector is unprecedented, with a marked acceleration in

the adoption of technology across the NHS. To maximise the positive impact in a sustainable manner, there are key medium and longer-term elements we should consider.

The NHS policymakers, managers and frontline staff are working to meet the immediate operational requirements and dealing with the substantial disruptions caused by COVID-19.

First, strict measures on social distancing and self-isolation result in the need for virtual ways of working, both for staff managing internal operations and clinicians interacting with patients.

Second, COVID-19 has shown us that we need more effective and safer ways of managing patients including ⇨

increased hospital capacity, intensive care equipment and not to say the least, appropriate protective equipment for front line staff.

Third, with a vaccine still many months away, there is a continuing need to accurately monitor, predict and plan for ongoing infection including testing, contact tracing and efficient isolation of at-risk and exposed people.

The NHS and the public are responding rapidly

The government passed emergency legislation to amend the Mental Health Act to relax requirements for sectioning a patient. The Excel centre was converted into the 4,000 bed Nightingale hospital in 9 days. NHSX issued pragmatic guidance to clinicians on information governance related to videoconferencing, messaging, using their own devices and sharing of information.

The NHS also put in place wider measures to roll out video conferencing in primary care including fast-tracking assurance of video products on the new Digital Care Services Framework.

The general public has also shown a growing willingness to adopt these technologies should they be made available, which longer-term could result in significant improvements to the speed in which a patient can be reviewed and appropriate care delivered.

A survey of patient contact preferences for a GP consultation agency found that 47% of respondents preferred a phone consultation, compared to just a quarter (25%) who requested a face-to-face consultation[1].

Professor Marshall, Chairman of the Royal College of GPs stated on the 11th of April that the in-person GP appointments had drastically reduced from 80% in the last year to 7-8% over the last 3 weeks. He also pointed out that the majority of the virtual consultations were being done over the phone rather than via video call. The preference for more simple technology, like phone call consultations, means that the barrier of entry is a lot simpler and is able to be rolled out nationally more efficiently than implementing more complex technology systems.

The demographics of digital health adoption also appears to be changing. Analysis from online pharmacy service Echo shows a dramatic increase in over 65s using their service over the course of March[2].

The pandemic has also seen rival companies work together in an interoperable fashion, with Apple and Google recently announcing they are working together to create a COVID-19 symptoms tracker to work across both iOS and Android devices.

Mindwave partner and start-up Thala-

mos is just one example of a health-tech company that has adapted to support the industry during the pandemic. With increased pressure on mental health services as a result of COVID-19, Thalamos is responding to new emergency Mental Health Act legislation, by accelerating new features and functions of their mobile application for social workers and doctors.

The temporary emergency legislation means that one doctor, rather than two, can sign off a Mental Health Act assessment. These measures have been introduced because the government is concerned that Covid-19 will reduce the number of mental health professionals available to help people whose mental health places them at risk.

These new features will not only support mental health practitioners to undertake their work more efficiently, they will also afford a degree of social distancing, insofar as digital notes can be transferred safely to the hospital, rather than by the practitioner having to deliver them in person. By making these changes, we hope to decrease the pressure on services and make life easier for doctors and social workers.

Six months later

In the medium term, following the firefighting phase, we will hopefully enter recovery. Within this phase, there will be three key elements to consider:

First will be around how care is delivered. Patients, clinicians and the general public will have been used to virtual interactions, online transactions and getting things done from home (including deliveries). Having gone through managing minor injuries, illnesses and routine illnesses without going to see their GPs in person, visiting the local A+E or outpatient clinic, both patients and clinicians may as well consider virtual consultations as (at least) a preferred choice.

Professor Marshall believes that up to 50% of GP appointments may be conducted virtually. With NHS resources and clinician's focus diverted to COVID-19 related patients, medical emergencies

and people with acute illnesses, those with chronic conditions will have been provided with information, alternate support and signposted to (including by peers with their condition) to apps and technology solutions.

This will provide a good foundation to identify, develop and deploy sustainable technology-enabled self-management pathways.

Second will be around how we foster a meaningful technology ecosystem. Due to rapid uptake, there will be a number of solutions for solving similar problems. Fragmentation will be widespread. Due to rapid implementations, there will be limited unifying workflows or interoperability. Evaluations that were less rigorous than usual will result in some less effective and more risky solutions in the system.

A large number of new implementations will have been implemented for 'free' or on 'extended trials', commercial terms and who pays for what will have to be

figured out quickly. To meet these challenges, the ecosystem will need to be based on open standards and have transparent evaluation and assurance frameworks. Some solutions will have to be replaced with others that plug the gaps.

Third will be around supporting staff through the change. Staff will need upskilling on the new ways of working. These skills will undoubtedly include digital health and communication-related skills. Communication will take a whole new form including supporting patients, carers and family virtually and also on how to work effectively with cross-organisational colleagues in social care and local government.

> ## "It appears that digital health has been provided with an opportunity to prove its worth."

The ability to support mental health issues will no longer be the responsibility of a select few. Supporting users to be aware of and use the solutions effectively will increasingly become important once the hype dies down and the necessity for virtual first recedes.

A year from now

In the longer term, the focus will be on consolidating the new norm. I believe that within this phase, the following will be the key focus areas.

First, legislation and assurance frameworks will need to be overhauled. Based on lessons learnt and evaluation of the outcomes based on changes made in the past year, legislation should not hinder the adoption and scaling of digital health, and should afford a degree of flexibility for the future.

Having said that, as a counter-balance, assurance levels must be implemented to ensure the appropriate levels of risk management and patient safety are

considered. This should also factor in emerging technologies such as artificial intelligence.

As well as rules and policies, it will be important to equip the clinical workforce to be able to better understand current technology trends and solutions and to determine which are effective and could be beneficial to their clinical practice. This education should start at undergraduate level.

Second, incentives and implementation must be optimised. At a basic level, funding flows must be restructured to account for the nature of digital solutions and wherever possible budgets should be pooled to enable pathway-level consideration to avoid 'siloed budgets' leading to disparity.

It would also be (high) time that appropriate payments are moved on to an outcome-based model. There is little point paying purely for shiny kit and the latest tech. At the start, adequate attention must be given to acquiring and engaging with users. Extra resources and specialist skills where appropriate should be allocated to support the implementation of the solutions.

Finally, the environment for continual innovation must be designed and nurtured to ensure progress does not stagnate. We must reflect on the factors that enabled rapid adoption, take time to understand user requirements and strike the correct balance between openness and risk management.

To fully identify and understand all aspects of these considerations the health tech industry, policymakers, health and social care organisations, clinicians, patients and the wider public must all collaborate. This crisis has highlighted the importance of cooperation and the collective power of groups. I hope we can all work together to realise the maximum potential of digital health.

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4 Ways Telemedicine Innovation
Improves Patient Satisfaction & Emergency Department Utilisation

Healthcare systems across the US have lately shown remarkable interest in the digital sphere, specifically telemedicine. The utilization of telemedicine has rapidly increased over the years and it is now employed in all aspects of healthcare - inpatient care, outpatient care, workplaces, nursing home care, and consumer homes.

Today, almost 70% of providers use some sort of telehealth or telemedicine tool, and 71% of people prefer to search for health-related information using a voice assistant.

Over the past few decades, the healthcare industry has increasingly engaged and, to a certain degree, driven technological innovation and advancements. Consequently, telemedicine has metamorphosed into what it is today.

In this piece, we will be looking at a few ways innovation in telemedicine has improved patient satisfaction and emergency department utilization in hospitals.

1 Improving ER Patient Flow

It is well known that long emergency room wait times are a tenacious challenge for health systems and hospitals across the country. The rate of emergency room visits has increased significantly over recent decades in the U.S., rising from 360 visits per 1,000 residents in 1995 to 445 in 2017, according to a report released recently by Autoinsurance.org.

With patient volume in emergency departments expected to increase further in the next few years as sicker, more complex patients drive up ED care, it has been predicted that this challenge of long ER wait times will only grow further.

So what should you do to manage the rising ED demand? The answer is simple- deploy a telemedicine solution depending on the goal of your healthcare organization.

Physician leaders at Milwaukee-based Aurora Health Care recently leveraged one such telemedicine solution with the objective of ameliorating patient flow in its emergency rooms. The overall goal behind this move is that of amplifying efforts toward patient care and providing a better patient experience. The ED solution, a tele-triage approach, was deployed first at Aurora Sinai Medical Center in December of 2017.

"We now see over 60,000 patients a year, and just a couple years ago, we were under 50,000 patients a year. So we were seeing a gradual increase in our door-to-provider times, and our overall length of stay, so we needed to come up with a solution to help address our increased demand," - Paul Coogan, M.D., president of Aurora Emergency Services and an emergency department physician at Aurora Sinai.

2 Digital Stroke Care

A person experiencing a stroke loses anywhere around 2 million brain cells every minute when a rupture or blood blockage deprives the brain of oxygen. Unfortunately, it is difficult to comprehend without a CT scan whether the patient has a bleed or a block, and giving the wrong treatment can be lethal.

Telemedicine is streamlining cardiac care like never before. Telestroke programs connect regional hospitals with a neurological expert who can speedily assess a CT image and guide the physician on-site in the right direction. These programs have drastically improved patient outcomes and they also reduce the door-to-treatment time.

New York- Presbyterian took this technology one step further by coming up with a Mobile Stroke Treatment Unit (MSTU). This specialized emergency vehicle has CT imaging ability onboard, is staffed by a neurologist, and is dispatched by the New York City 911 System through the FDNY directly to a patient the moment he/she displays signs of a stroke. The said unit contains medications specific to treating and diagnosing strokes, enabling the team to send the right drug straight away upon diagnosis.

3 Triaging Based On Prognostic Criteria

A large number of patients with kidney stones return to the ED a number of times due to repeating symptoms. Patients then tend to receive duplicative imaging studies and are often admitted to the hospital. Once admitted, most physicians and patients expect resolution preceding discharge through potentially futile surgical care for simple stones.

According to one recent report, most ED visits don't require immediate attention. In order of increased severity, visits are segregated as - nonurgent, semi urgent, urgent, emergent, emergent and immediate. Additionally, only 9% of emergency department visits are categorized as "emergent," while 1% require immediate attention. The majority of cases are considered "urgent."

To tackle this problem, Minnesota-based HealthEast Care System came up with an innovative telemedicine approach that offers expert care in decision making with respect to hospital admission and to facilitate outpatient management with same day and next-day visits using a dedicated subspecialty stone management clinic.

In this method, with early review of clinical history by experts, patients could be triaged based on prognostic criteria. Those patients with a high probability of spontaneously passing their stone could be thoroughly educated and assisted in outpatient management. On the other hand, those with slight chances of spontaneous resolution (or significant comorbidities) could be

diligently directed to definitive surgical care.

The organization saw a 48% reduction in ED repeat visits and 42% decrease in hospital admissions post the implementation of this system.

"We reduced unnecessary ED visits, hospital admissions/readmissions and non-definitive surgery. The net effect of these improvements is a 21.2% reduction in cost of care (approximately $1,090 per stone patient presenting to the ED)," the organization's spokesperson told Health Partners in a recent interview.

4 Mental Health Assessments In ED

Multiple types of coercion that bring individuals with mental illnesses into treatment sometimes have considerable implications for their potential to receive care that is responsive to and respectful of their individual needs, preferences, and values—what the Quality Chasm report refers to as "patient-centered care."

The aim of patient-centered care and its associated rules emphasize:

a. clinical care that is based on individual patient preferences, needs, values, and decision making; and
b. patient access to and receipt of information that permits well-informed health care decisions.

Healthcare providers frequently face fundamental barriers in getting such patients to reach a decision.

Allina Group of Hospitals and Clinics, based out of Minnesota, faced a similar problem. The organization wasn't certain about how it could provide access to mental health specialty care at points of critical decisions at Allina Regional sites that currently

do not have the volume to support on-site staffing.

To curb this shortcoming, the organization leveraged the telemedicine technology to provide the same high quality Mental Health assessment and treatment plan no matter where a patient presents for care. The organization now has specialty care providers in emergency departments. Patients receive an aggressive mental health assessment and temperament planning by a licensed clinician which is documented in a standard EMR for continuity of care.

The technology allows almost immediate face to face contact with the patient, their family and ED treatment team. Patient wait times to access specialty mental health care and time spent in the ED have considerably reduced. Better assessments reduce the practice of 'defensive decisions' to admit patients when in doubt, thus reducing unnecessary admission. Patients are provided with more comprehensive resources and referrals when discharged from the ED.

Closing Words

While telemedicine solutions are still in the premature stages of implementation for emergency care, they will certainly continue to develop and build upon their initial successes. Technology and innovation have become indispensable in traversing the healthcare landscape.

Telemedicine uniquely harnesses technology to provide convenient high quality care and patient access. Healthcare experts across the globe are of the opinion that the enhancement and expansion of telemedicine will garner overall improvements in healthcare, from outcomes to provider satisfaction to patient experience; and take emergency department utilization to the next level. ∎

INDUSTRY NEWS

News and Information for Digital Health Professionals

World's First Wheeze Detection Device Helps Children with Asthma

OMRON has announced the launch of WheezeScan, the world's first clinically validated device to detect the presence of a wheeze in young children.

The new device provides parents, doctors and caregivers the ability to discern if a child is wheezing – subsequently providing the confidence and clarity over next steps that will need to be actioned in line with a child's treatment plan.

WheezeScan has been intuitively designed for straight forward, accurate detection. Parents simply hold it below their child's right collarbone for 30 seconds and wait for a "Wheeze" or "No Wheeze" identification. In addition, WheezeScan's design is sleek and ergonomic, light and portable, allowing parents to have it with them at all times and remove any uncertainty in moments of breathing distress.

The new device provides an objective assessment of the presence of wheezing, removing the guesswork, doubt and indecision enabling parents of children with asthmatic symptoms to confidently follow the doctor's treatment plan.

Wheezing is a whistling or rattling sound on the breath and is the most common symptom of asthma in children under the age of 5. Despite this, at least 44% of parents struggle to clearly identify wheezing sounds before the onset of an asthma attack[1]. This can be for a number of reasons, including:

» The prospect of a looming asthma attack causes anxiety and hesitation
» Wheezes don't always sound the same[1]
» Children are too young to articulate what they're experiencing

According to Lucía Prada, Marketing Director of OMRON Healthcare Europe, "as a mother of two, I know how stressful it is having a sick child, and how powerless this can make you feel when you cannot figure out how to help them. WheezeScan was designed to give parents confidence in the adequate management

of their children's asthmatic condition. As the first step towards our Zero Asthma attacks vision, it brings into concrete action our vision to do everything we can to minimize the impact that asthma has on patients, and particularly children".

The device's advanced listening technology was designed to identify sounds in a child's wheezing that parents may not be able to hear. A diaphragm of micron-width material detects low-volume wheezing. This, combined with an HD quality microphone, a built-in noise cancelling system, and a specialised on-board computer allows the device to provide a clear "wheeze" or "no wheeze" reading. In addition, a protective internal case ensures durability and long-term accuracy.

WheezeScan also pairs with its companion app, AsthmaDiary for mobile devices. The app keeps track of wheeze episodes, enabling parents to log data of potential trigger factors and

response to medication, as well as identifying trends. What's more, parents can then equip doctors with details about the frequency of wheezing episodes, allowing for more tailored development of control plans.

André Van Gils, CEO & President of OMRON Healthcare Europe comments, "Our Going For Zero promise tells us to do everything we can to enable people to get more out of life because they're not controlled by their condition. With this in mind, we have developed the WheezeScan, which marks a new milestone in our quest to equip people with the best tools to achieve an accurate level of detection and monitoring when it truly counts. As the global leader in respiratory therapy, introducing preventative, highly portable healthcare technology to provide relief right when people need it, is amongst our biggest priorities".

1) Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2016 ∎

First Patient-Administered ECG Assessment for Continuation of Clinical Trials during COVID-19

ERT has announced a first-of-its-kind partnership with AliveCor, the leader in AI-based, personal ECG technology. The partnership enables ERT to capture digital cardiac safety data with KardiaMobile 6L, the only FDA-cleared personal ECG for patient-administered 6-lead data collection.

ERT is a global data and technology company that minimizes uncertainty and risk in clinical trials so that its customers can move ahead with confidence.

"By combining AliveCor's advanced technology with our proven software and workflow platform, we are enabling our customers to continue developing new medical treatments during the COVID-19 pandemic, regardless of whether trial patients have physical access to investigative site personnel," said Ellen Street, Executive Vice President of Cardiac Safety of ERT. "The device's ease of use, combined with ERT's centralized over-read and data collection methodology make it an ideal solution for ensuring patient safety during ongoing clinical trials."

KardiaMobile 6L is a hand-held, 6-lead personal ECG that records Lead II data without the attachment of electrodes.

Data captured from the device will be integrated into ERT's software and workflow platform and read by ERT cardiologists to ensure patient safety during the clinical development of new medical treatments. ERT provides high quality measurements for QTc, QRS, and other ECG intervals that enable efficacy and safety monitoring during clinical trials.

"ERT's experience in analysing millions of ECGs and their dedication to patient safety make them the gold standard in clinical trial cardiac safety assessment," said Priya Abani, CEO of AliveCor. "We look forward to this partnership and to delivering the innovative solutions and valuable data that clinical trial sponsors require." ∎
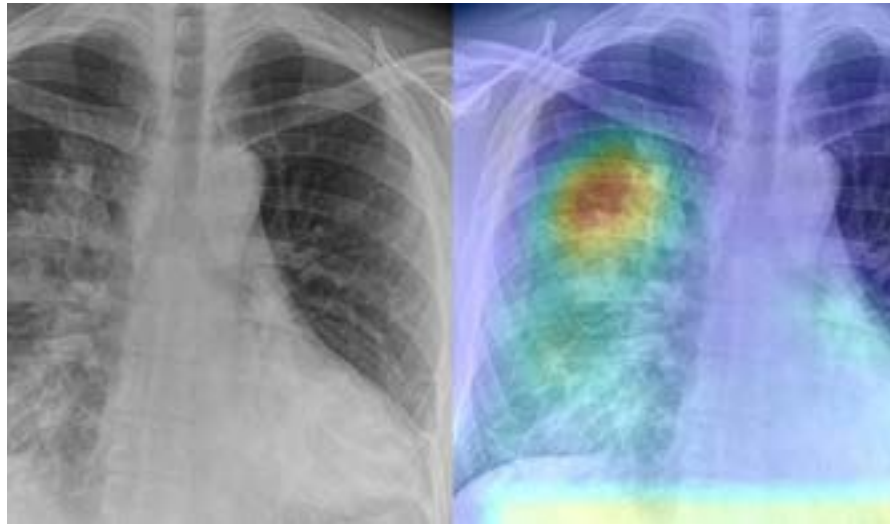
Algorithm Identifies Chest X-rays from COVID-19 Patients as 'Abnormal'

An artificial intelligence-based algorithm has been found to quickly identify chest X-rays from COVID-19 patients as 'abnormal'. The red dot® solution from behold.ai has the potential to provide 'instant triage' that could speed up diagnosis of COVID-19 individuals and ensure resources are allocated properly.

"The majority of deaths from COVID-19 are owing to pneumonia in the lungs of vulnerable patients. Pneumonia is a potentially life-threatening condition caused by a number of pathogens including, directly or indirectly, COVID-19 infection. Our algorithm can detect abnormal chest X-rays including pneumonia almost instantly. Out of 28 X-rays reviewed from patients with COVID-19, we correctly identified 85% of them as 'abnormal' using red dot®," said Dr Tom Naunton Morgan MB FRCS FRCR, Chief Medical Officer, behold.ai.

"As we evaluate further positive cases from across the world, including here in the UK, our results will be further validated. This will increase the utility of our 'instant triage' and potentially help reduce the burden on healthcare systems as more and more cases of pneumonia present and require rapid diagnosis."

The data follows recent news that behold.ai's algorithm has been cleared by the US Food and Drug Administration (FDA). Commercial roll-out in the US is planned for later this year.

"Our technology can make a big difference to patient safety, and the delivery of care and cost-savings to health services. It is available here and now to help manage the increased burden that will fall on health systems like the NHS in the coming weeks," said Simon Rasalingham, Chairman and Chief Executive, behold.ai.

AI Algorithm for Radiology Triage Receives FDA Clearance

The US Food and Drug Administration (FDA) recently cleared the use of behold.ai's red dot® algorithm for 'instant triage' in radiology. The clearance applies to the life-threatening condition of collapsed lung (pneumothorax) and alerts radiologists as soon as the X-ray image is captured.

'Instant triage' offers clear benefits over conventional human-read processes when time is of the essence; the algorithm can also help reduce the cost of diagnosis in conjunction with other products. The Company will charge for this benefit on a per exam basis. The clearance gives behold.ai immediate access to the world's largest market for medical devices and commercial rollout of the radiology AI solution, in the US, is planned for later this year. ∎

SilverCloud Health Announces $16M Series B Funding

SilverCloud Health, the world's leading digital mental health platform for providers, health plans and employers is to enhance its range of therapy programmes in the UK as part of expansion plans after securing $16m (~13m pounds sterling) funding from leading health investment groups.

The new funding round will see the company further developing its innovative approaches to therapy, addressing the range of psychological conditions across all age groups. This will include the UK and Europe, and also further expand the geographical reach of its services in the US.

Founded in 2012, SilverCloud's mental health programmes are used globally by more than 300 organisations including more than 70% of NHS mental health services. It offers more than 30 mental health programmes across the spectrum of mental health from wellness and resilience, through to severe mental health and chronic concerns.

"We are committed to providing truly impactful mental health support to all those with need," said Ken Cahill, CEO of SilverCloud. "The need has never been greater than during this unprecedented global crisis. SilverCloud enables easier, earlier access to clinically validated mental health care that shows results equivalent to face-to-face care for the 1 in 5 people with a diagnosable mental health condition. With millions of people being asked to stay home and health systems needing to prioritise care, we recognise the heightened need for virtual support as the world copes with the COVID-19 pandemic. In response, SilverCloud is providing its clients, free of charge, expanded access to its platform to even more healthcare professionals, their families and patients to help make a difference for those in need in the current crisis."

The new - Series B - funding round, led by MemorialCare Innovation Fund, and which included other US healthcare groups LRV Health, OSF Ventures and Unity Point Health Ventures, has helped raise the company's total funding to more than $30 million and brings together a group of healthcare investors with extensive experience in the US healthcare market.

It will see the company, which has offices in Dublin, London and Boston, enhancing its current global portfolio, expanding availability of its programme offerings in the US and enabling additional research and clinical trials to be conducted. SilverCloud will also expand its presence in Europe, with new and existing partners like Thieme Telecare, part of the Thieme Group and one of the leading providers of integrated care in Germany. Existing investors ACT Venture Capital and B Capital Group, participated in the round as well.

The SilverCloud platform, used by more than 350,000 users and growing by more than 15,000 users per month, has demonstrated results on par with face-to-face therapy in multiple randomised controlled trials. Beyond its industry-leading results in clinical trials, its real-world evidence demonstrates that more than 65 percent of SilverCloud users have shown significant decreases in depression and anxiety symptoms.

SilverCloud's programmes are evidence-based and involve clinical experts and users in the design and development of the mental and behavioural health interventions. Backed by over 17 years of research including partnerships with leading academic institutions, SilverCloud has seen exponential year-over-year growth since 2012.

Raj Ganguly, Co-founder and Partner, B Capital Group, said: "Our investment in SilverCloud Health is driven by our confidence in its team, its proven track record working with global health organisations and its esteemed partner network. This new capital will enable SilverCloud Health to continue to innovate, expand and broadly deploy its programmes to the millions of individuals who need them."

The past year has seen some significant developments for SilverCloud. In October, it announced a research partnership with Microsoft to improve outcomes through artificial intelligence, based at Microsoft Labs in Cambridge, England. In December, it was announced that the SilverCloud platform would be included in digital health formulary of ExpressScripts, the largest independent manager of pharmacy benefits in the US.

This further shows how digital therapeutics solutions are becoming a critical component of mental health treatment and support, and how SilverCloud is determined to stay the leader in delivering outstanding outcomes. More than 94 per cent of users of SilverCloud's scalable and responsive platform said the programmes are helpful, relevant and supported them toward their goals. ∎

Global COVID-19 Clinical Trial Tracker

Cytel Inc. has launched an open-access global COVID-19 Clinical Trial Tracker to help facilitate greater collaboration between researchers, policymakers, clinicians, journalists, philanthropists, and other critical stakeholders who need to understand the complex dynamics of the global response to finding a solution to the COVID-19 outbreak.

This will enable them to make more informed and pragmatic decisions on how to channel scarce resources. Clinicians and local government need to know what trials are taking place in their community to ensure that the right patients receive the right exploratory treatment, while philanthropists and Federal policymakers deserve a one-stop shop to determine which are the most promising early phase treatment results.

Funded in part by The Bill and Melinda Gates Foundation, a leader in global health solutions, this live dashboard offers an overview of all the trials taking place in the international effort to tackle the pandemic. One of the most difficult challenges facing those seeking a COVID-19 treatment is how little data exists about this disease. Early investigators are relying on guesswork to determine which therapies to investigate. Collating information in one place on the growing numbers of trials, will enable decision-makers to compare treatments more easily as they determine which to investigate further.

Joshua Schultz, Chief Executive Officer at Cytel, explained, "While much of the world is isolating, the scientific and clinical communities are coming together to fight the COVID-19 virus. United by an unprecedented sense of urgency, there is a level of collaboration that we've not seen before, and, despite the current pressures on the healthcare system, hundreds of hospitals are still committed to working on clinical trials. At Cytel, we have been supporting numerous clients in developing statistically rigorous models for fast data analysis and addressing the various challenges the pandemic ⇨
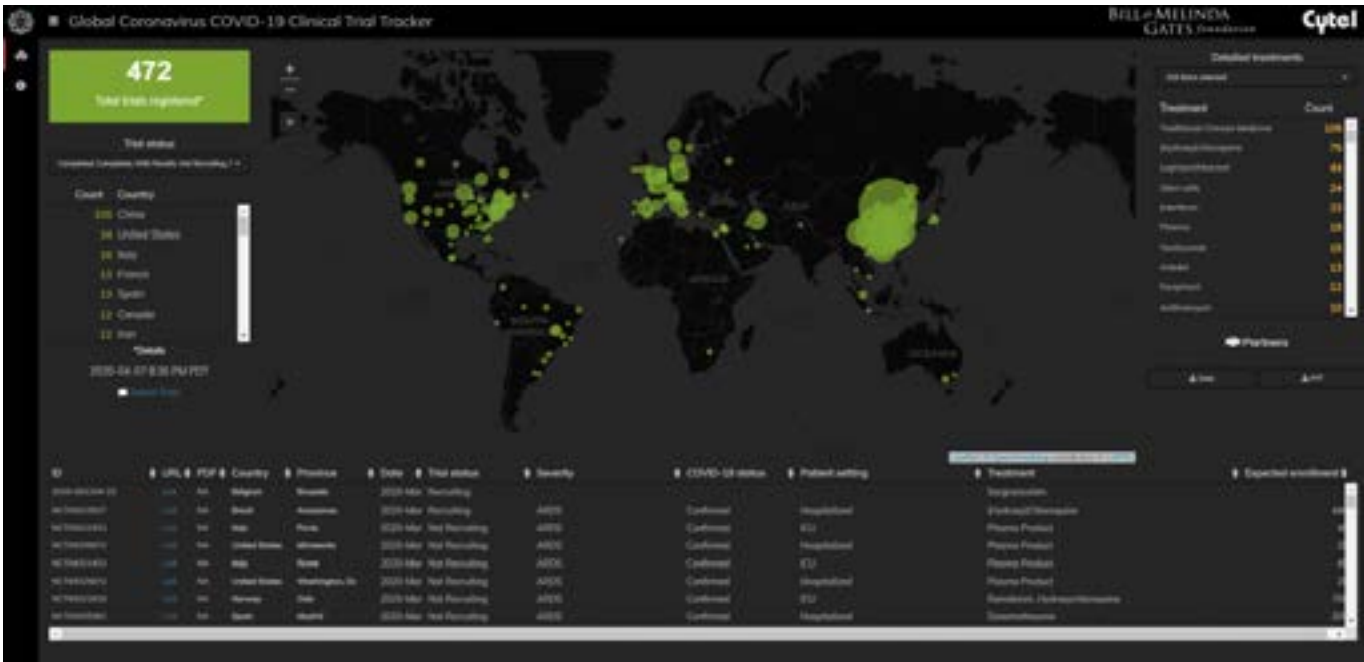
presents in the current clinical environment. We are committed to supporting the global effort – and launching the COVID-19 Clinical Trial Tracker offered an additional way to do that."

In the short time since the outbreak occurred, around 500 trials have already commenced – a number that is growing daily. Without a dashboard, scientists and other stakeholders would have to examine hundreds of different trial registries for updates, to determine which are most promising. The dashboard collates these in one place making it easy to see all the relevant trials and to compare the effectiveness

of treatments. Such comparisons will also help foster more transparent debates about reasonable cost-benefit analysis during times when tough calls are required about where to direct resources. Trials should not be duplicated in different countries because of a lack of awareness of what other scientists are doing internationally. By creating this dashboard to facilitate the sharing of crucial information, Cytel aims to encourage further collaboration between scientific, philanthropic and policy-making stakeholders around the world while also informing journalists, policy makers and local government about options for testing in their area.

Professor Edward Mills, Vice President of Real World Evidence and Senior Principal Scientist at Cytel, explained how Cytel had used its position as data and analytics leaders to identify and resolve a problem they were seeing across the field, "Given our experience building models using real world evidence from all over the world, we quickly identified the need for access to data and reached out to our partners to synthesize their findings quickly in order to develop this dashboard."

To access the COVID-19 Clinical Trial Tracker developed by Cytel, visit *www. covid19-trials.com*. ∎

measure your heart rhythm every five minutes while you sleep. When you wake up, you have instant access to a detailed overview along with notifications which you can forward to your doctor for follow-up and/or treatment.

Until now, atrial fibrillation could only be detected via expensive medical examinations in a clinical setting. Which is why many people do not have themselves tested, despite the relatively high risk: 1 in 4 people over the age of 40 will develop the condition in their lifetime.

Lars Grieten, CEO FibriCheck: "Our goal is to make it as easy as possible for people to know if they have a heart rhythm irregularity, to prevent AF strokes from happening."

"The FibriCheck heart rhythm app is a device-agnostic medical software application that can easily be integrated into any phone or wearable product that uses PPG (photoplethysmography) sensors.

For smartphone, smartwatch and consumer technology companies, this opens up new possibilities to expand product offerings and provide consumers with innovative ways to manage their health and health-related conditions, including better heart health."

Extensively validated in clinical settings

FibriCheck is the first medical CE- and FDA-certified app that enables regular and long-term heart rhythm screening. It has been extensively validated in clinical settings as well as large clinical trials in free-living conditions, indicating state-of-the-art performance of its algorithms. Clinical studies have been conducted and comparisons made to state-of-the-art ECG (electrocardiogram) devices such as those of the Apple Watch and the AliveCor KardiaBand.

At present, the new medical smartwatch app is undergoing the final stages of user testing and will be available for smartwatch manufacturers worldwide as of the second half of 2020. One
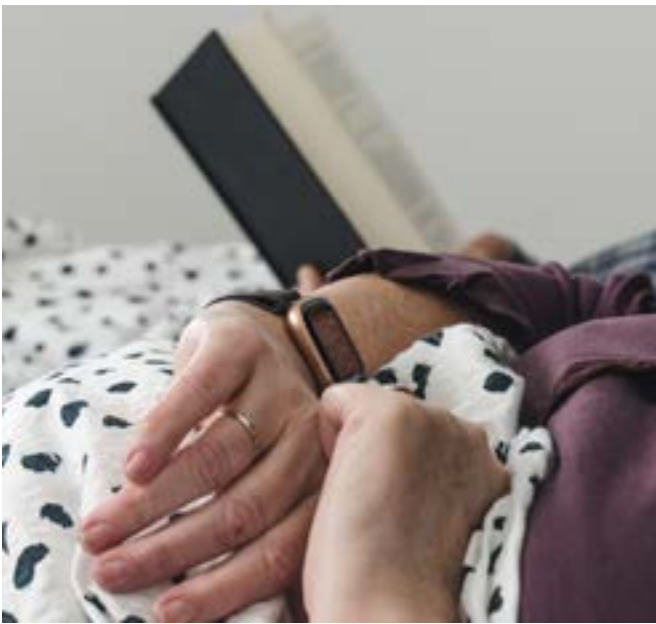
major smartwatch manufacturer has already reached an agreement to integrate the FibriCheck technology in their products.

Fully continuous monitoring

FibriCheck was recently selected as a high impact innovation by the 2020 NHS Innovation Accelerator (NIA) programme, another step in commercially expanding and scaling up FibriCheck's market reach. One of the company's upcoming projects includes making fully continuous monitoring a reality. In this not-too-distant scenario, users will be able to have their heart rhythm monitored constantly and automatically, even during the day.

Lars Grieten, CEO FibriCheck: "This is the first step in turning consumer devices into fully automated medical diagnostic devices. Our next steps will be to add even more devices, and more frequent monitoring, to improve the user experience and make it easier to deliver better capabilities supporting heart health." ∎

FibriCheck App Automatically Detects both Silent and Intermittent Atrial Fibrillation at Night

FibriCheck has announced another world premiere: the first smartwatch app that automatically monitors users' heart rhythms during their sleep.

The app, which can be integrated into any brand of smartwatch, detects episodes of both intermittent and silent atrial fibrillation (AF), where symptoms are only felt on and off or not at all, making diagnosis extremely difficult. FibriCheck's latest innovation offers an easy and effective solution for detecting the most common form of heart rhythm disorder which is responsible for 1 in 4 strokes. As such, it represents a unique opportunity for smart-

watch manufacturers to add genuine value to their products in the form of potentially life-saving, built-in technology.

Atrial fibrillation is the most common form of heart rhythm disorder and is responsible for around 25% of all strokes; the vast majority of which are entirely preventable with timely diagnosis and treatment. FibriCheck's latest innovation for smartwatch has been developed to detect the heart rhythm disorder when a person is asleep, even in cases where there are no apparent symptoms.

Smartwatches with the FibriCheck app installed automatically

Medical Grade COVID-19 Remote Diagnosis App

SDG Group, has announced the launch of an app (Docdot) that will help healthcare professionals address the challenge of finding and monitoring potentially positive individuals, while limiting the risk of exposure of health professionals and other individuals.

Docdot is an AI-assisted mobile app that allows doctors to remotely monitor a patient's vital signs with medical grade accuracy. A patient just needs to look into their smart phone camera and answer a few questions. The results,

which take as little as 45 seconds to retrieve, can be used to diagnose, monitor and ultimately prevent the spread of COVID-19 with a geo-referenced telemonitoring and televisit solution. A modified version aimed at organisations supporting employees to safely return to work will be available soon.

Quicker, more accurate and comprehensive than alternatives, Docdot is the first remote monitoring and triage tool with the potential to transform the diagnosis, management and treatment of those

with suspected COVID-19, while helping to slow its spread.

Designed and developed by a team of world-class telemedicine and data scientists, Docdot uses a unique combination of light signal processing and AI technologies to convert light reflected from blood vessels in your face into highly accurate real time vital sign measurements, including:
- Heart rate (BPM)
- Oxygen saturation (Sp02)
- Respiration (rpm)   ⇨

- Heart Rate Variability (HRV)
- Stress (Baesky's and US/European Index)

Heather Beardmore, CEO, SDG Group UK, comments: "Under the current system, diagnosing, monitoring and managing COVID-19 is contributing to its spread through contact. At present, individuals quarantined with suspected COVID-19 can record just one of the vital signs required to indicate the presence and progress of the virus, which is body temperature. The others – respiration, oxygen saturation, heart rate and HRV – are usually recorded by health professionals, potentially in densely populated locations and in close proximity to the patient. This puts primary care, community care and hospital workflows under immense pressure, places health workers and patients at an elevated risk and contributes to the spread of the virus."

Beardmore continues: "Docdot gives health workers the information they need to triage patients at a safe distance or in quarantine, preventing unnecessary visits to GP surgeries, triage stations and hospitals, and reducing the risk of exposure among health workers and vulnerable patients. This maximises the availability of healthcare resources for those who need them most, and contributes to slowing the spread of the virus."

Docdot uses light signal processing technology, or remote photoplethysmography (rPPG) invented and built by SDG's tech-nology partner Binah.ai, a technique that enables a smart phone camera to record the light reflected by the blood vessels flowing beneath your skin. The blood volume in this micro vascular tissue varies in response to changes in respiration, blood pressure and other vital processes, allowing these variations to be converted, using proven parameters, into vital sign measurements. Independent clinical trials show over 90% of measurements to be as accurate as hospital grade monitors.

The data retrieved by Docdot is geo-referenced and collected in real-time via cloud architecture, which also enables the application of statistical-epidemiological modelling, useful for resource allocation planning and contagion forecasting.

The rPPG binah.ai technology powering Docdot has been extensively tested both internally at dedicated laboratories and in independent clinical trials at Indira Gandhi General Hospital in India (2019), Chiba University, Japan (2019) and currently at an FDA/Canada Health approved facility (2020). Research and testing continues with a sustained focus on achieving even higher levels of accuracy. ∎

DataRobot and InterSystems Partner to Accelerate Adoption of AI in Healthcare

DataRobot and InterSystems have announced a partnership designed to accelerate the application of AI in healthcare. Through an integration and reseller agreement, the partnership makes it easier for InterSystems customers to integrate predictions and insights from DataRobot's enterprise AI platform into their healthcare applications.

The DataRobot enterprise AI platform provides automation across the entire AI lifecycle, accelerating and streamlining a user's journey from data to value. Through this partnership, the enterprise AI platform will be integrated with InterSystems IRIS® data platform and InterSystems for Health, the world's first and only data platform specifically engineered to extract value from healthcare data.

"Healthcare is prime for disruption in ways that benefit patients, providers, and payers, and AI represents the next frontier," said Bill Hobbib, SVP of Marketing, DataRobot. "Our partnership with InterSystems makes it easier for users to leverage the power of AI to deliver high-quality care, improve patient experience and outcomes,

all while reducing the cost of care through AI-driven efficiencies."

DataRobot's enterprise AI platform will augment InterSystems' IntegratedML, a capability that gives developers access to AutoML capabilities directly from SQL. This allows InterSystems IRIS and IRIS for Health customers to embed predictions within their existing applications in a simple, intuitive, and scalable way. InterSystems' technology simplifies the data acquisition, normalization, and other "data wrangling," and DataRobot's technology simplifies the entire AI process from feature engineering and modeling to deployment and monitoring. This will accelerate delivery and time to value of ML/AI capabilities in real-time decisioning applications.

"DataRobot's enterprise AI platform is a natural extension across all InterSystems deployments using our IntegratedML, both in healthcare and also in other industries," said Scott Gnau, head of Data Platforms for InterSystems. "This enables developers to easily include machine learning and AI extensions, creating real-time enhanced decisions and analytics for their applications. It makes operations robust as well. IntegratedML is built into InterSystems IRIS and IRIS for Health – a secure and reliable platform that runs many of the world's most health-critical applications, and DataRobot brings in best-in-class MLOps."

"At Baystate Health, we are focused not only on the 800,000 patients in Western Massachusetts, but also on turning data into insights that can help advance healthcare nationwide and around the world," said Joel Vengco, senior vice president and chief information officer of Baystate Health. "This partnership between DataRobot and InterSystems is an exciting one for us; it will put even more powerful tools in the hands of our development staff to create cutting-edge healthcare solutions." ∎

New Secure Messaging Service 'Ready Doc' Enhances Collaboration

Intiva Health has launched an app-based version of its new HIPAA-Compliant Secure Messaging Service. Ready Doc™ Messaging, part of the Ready Doc suite of health care compliance solutions, enhances care team collaboration with real-time communications and streamlined clinical workflow in order to improve patient outcomes and reduce the risk of a HIPAA compliance breach.

Ready Doc Messaging is a secure, encrypted application that protects patient information and meets HIPAA guidelines. Users are able to manage digital PHI correspondence and streamline care team coordination via one accessible, user-friendly platform. Common industry practices, such as the use of short messaging services (SMS) or personal electronic devices to transmit protected health information (PHI), opens the door for deficiencies in HIPAA compliance resulting in enormous monetary penalties for health care systems, which can range anywhere from $10,000 to $50,000 per violation—with an annual maximum of $1.5 million. A security breach of a patient's PHI can have life-altering conse-quences for the individual, such as identity theft and inaccurate medical records. Ready Doc Messaging offers a key feature set including: ⇨

» Secure Messaging: All communication to and from the server is encrypted using TLS/SSL with authentication devices for client- and server-side.
» Priority Messaging: High priority messages stay at the top of the recipient's inbox and specify a unique alert for instant differentiation.
» Message Forwarding: Messages can be forwarded to other colleagues with ease.
» Custom Groups: Customizable forum type discussions can be created for

open and ongoing dialogue between colleagues and specific topics.
» Delivery Confirmation: Receive notifications instantly when messages have been sent. Check read status and more.
» Message Recall: Recall messages and attachments before they have been read.
» Secure Attachments: Securely attach and share instantly any type of media.

The Ready Doc™ platform directly addresses the inefficiencies in health care credentialing. The platform presents an

all-in-one solution in which medical professionals can complete credentialing and compliance requirements, leading to a significant increase in earnings potential. The new features strengthen compliance risk mitigation and further expedite the credentialing process.

The mobile version builds upon the company's existing portfolio. A desktop version of Ready Doc™ has been available for use by care teams of any size since mid-March. ∎

Skin Analytics Pilots AI Skin Cancer Community Assessment Service

University Hospitals Birmingham NHS Foundation Trust (UHB) and AI specialist Skin Analytics are to pilot a new skin cancer community assessment service to safely reduce delays in skin cancer detection and treatment during the Coronavirus pandemic.

There are around 8-13 million GP appointments booked for skin cancer assessments every year across the UK. Around 16,200 people are diagnosed with melanoma, which is now the fifth most common cancer in Britain. While 2,300 people die each year, the survival rates improve significantly if the disease is caught early. By introducing a tele-dermatology service, UHB referred patients will have potentially cancerous skin lesions assessed and receive life-saving treatment sooner.

During the pilot, referred patients will be provided with skin cancer triage outside of the hospital setting, using AI technology to capture high quality images of those lesions which may be melanoma and requiring priority investigation by a Dermatologist, and those that are safe to defer according to the BAD guidelines. The service will help flatten the demand curve to manage the ongoing clinical risk when social isolation measures are lifted, and the latent demand is released.

If the pilot proves to be successful, it will be considered if this model of care can be continued past the Coronavirus pandemic for the benefit of patients in the future.

Nick Barlow, Director of Applied Digital Health, UHB said: "Identifying patients with melanoma over the coming weeks or months and providing treatment sooner will provide significant benefits. Managing the clinical risk and finding the patients who need treatment for melanoma will also be a key focus for hospitals well beyond the COVID-19 crisis. I'm incredibly proud of the way the UHB team worked with Skin Analytics to safely design and launch this pilot in just a few short weeks."

The AI triage service is powered by Skin Analytics DERM solution, a clinically validated, CE certified medical solution that can identify 11 lesion types including Melanoma, Non-Melanoma

skin cancers, Precancerous lesions and benign lesions.

Neil Daly, CEO of Skin Analytics said: "The AI triage pathway delivers two benefits for the health system through capacity and demand management for dermatology cancer services. It has been an incredible effort to get this service ready so quickly and is a great example of how well the NHS is responding to the challenge of COVID-19."

Patients who are concerned about a skin lesion or mole can be signposted to attend the skin cancer triage service. Patients attend the clinic, which has been set up so that the trust's clinical photographers work with Skin Analytics to safely capture an image of the patient's lesion which is then assessed by the AI solution and if the lesion is determined to be cancerous, a Dermatologist will remotely review and place the patient on the correct treatment pathway. ∎

App Ensures Patient Access to Specialist Care during COVID-19

A health tech platform is reducing pressure on hospital services by enabling GPs and paramedics to screen COVID-19 patients in collaboration with specialists via an app.

Cinapsis, allows patients to be assessed by specialists as part of their GP appointment or 999 call response, enabling clinicians to pool their expertise and work together to support patients remotely.

The digital triage platform, founded by NHS surgeon Owain Rhys Hughes, connects primary care clinicians such as GPs and community lead nurses with consultants from the local NHS Trust who can provide advice about a patient's management in real time, including using images. This enables assessments to be made in situ, reducing unnecessary person-to-person contacts and patient trips to hospital.

With health professionals keen to stress that anyone with health worries should still seek help, the app means patients can continue to access consultant advice as part of their GP appointment.

In Gloucestershire, for example, Cinapsis is being used across the One Gloucestershire Integrated Care System (ICS) which includes Gloucestershire Hospitals NHS Foundation Trust, Gloucestershire Health and Care NHS Foundation Trust, South Western Ambulance Service NHS Foundation Trust, NHS Gloucestershire Clinical Commissioning Group and all of its 73 GP practices.

Thanks to this, some 32% of patients with suspected COVID-19 whose GPs or paramedics were able to offer alterna-

tives to hospital care were instead managed at home, relieving pressure on the NHS at this critical time.

Dr Malcolm Gerald, lead GP on the Cinapsis project in Gloucestershire, says, "Not only are we helping to reassure and better manage our patients by giving them the benefit of specialist advice, we are also reducing demand on busy hospitals by making properly informed decisions. Our data shows that following discussion with a specialist around a third of COVID-19 patients whose referring clinician had significant concerns about them did not need to be admitted to hospital. This has reduced unnecessary patient, family and staff exposure to the virus, whilst keeping important bed space free for those most in need."

Cinapsis is a smart referral system which uses a mobile or desktop app to seamlessly put primary care clinicians in direct contact with the right specialist via their mobile phone or a landline. It can also allow messages, images and video to be used – and all in a data-secure environment.

The referrer can make a single call, receive the best available advice, forward summary documents to the specialist and arrange transport if needed. Specialists can manage their rotas with ease, respond to calls quickly from wherever they are and then forward relevant information to the receiving department, sharing work across their team and prioritising cases.

All advice is recorded and an electronic letter summarising the consultation is sent to the patient's GP practice.
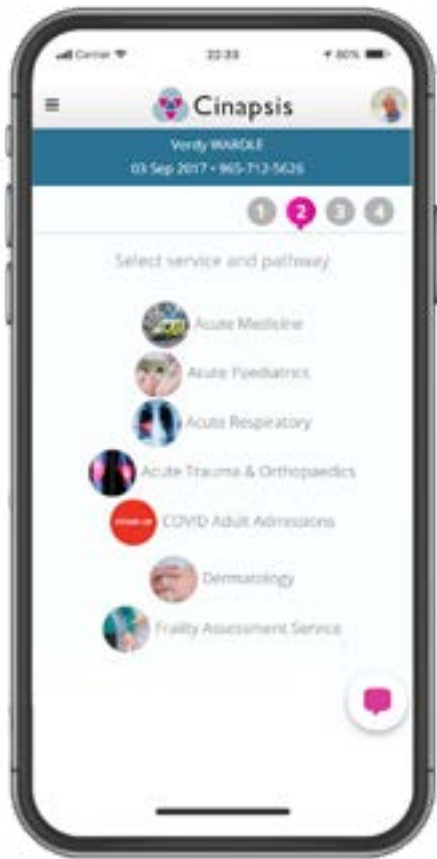
"At this critical time, Cinapsis is making it easier for GPs and emergency healthcare workers to quickly identify the best course of action for any patient exhibiting symptoms suggestive of COVID-19, whether that's sending them to hospital or ensuring that they receive the care they need within their community. Local specialists can respond to questions from their colleagues in seconds and ensure decisions are made quickly, seamlessly and in the patient's best interests." Comments Founder and CEO of Cinapsis, Dr Owain Hughes. ∎