

# The Journal of mHealth

The Global Voice of Digital Health

September / October 2021 | Volume 8 Issue 5

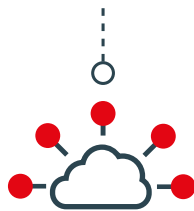
## MANAGING HEALTHCARE DIGITAL TRANSFORMATION



TELEMEDICINE



DIGITAL



INTERCONNECTED



CONTROL



DIAGNOSIS



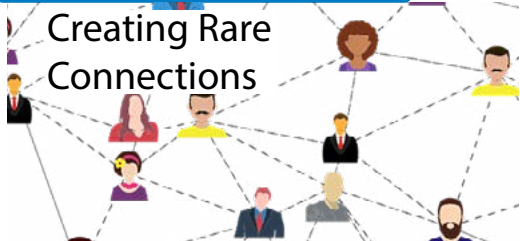
COMMUNICATE



HEALTHCARE

### PHARMA

Creating Rare Connections



### INSIGHT

The Greatest Barriers to AI Adoption

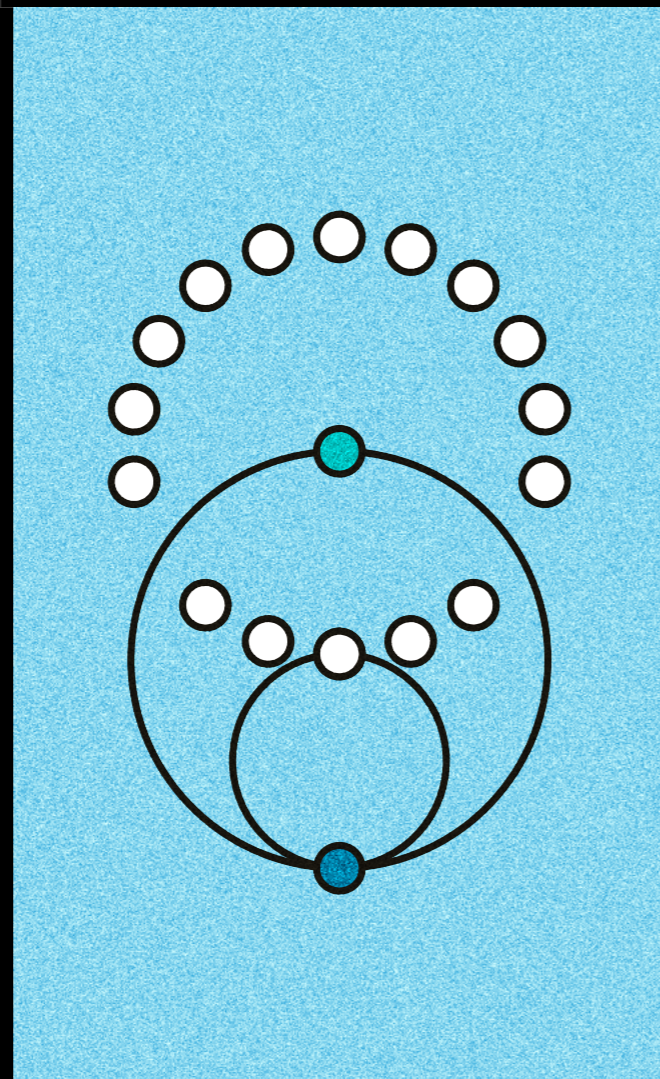
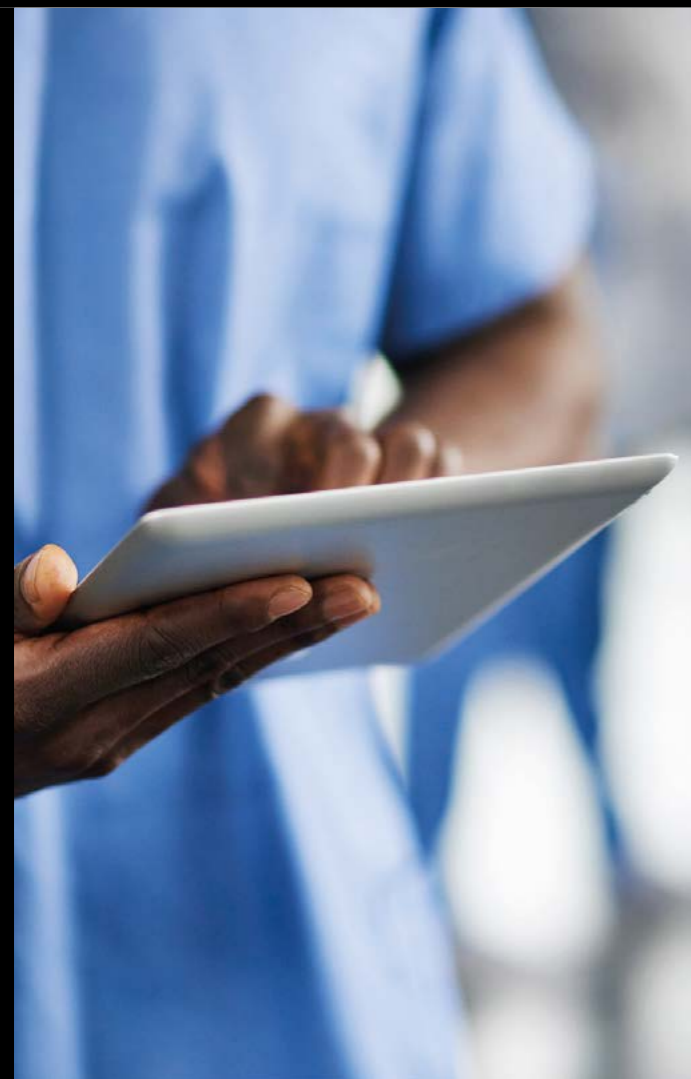


### HEARING CARE

Growth of Accessible Tech



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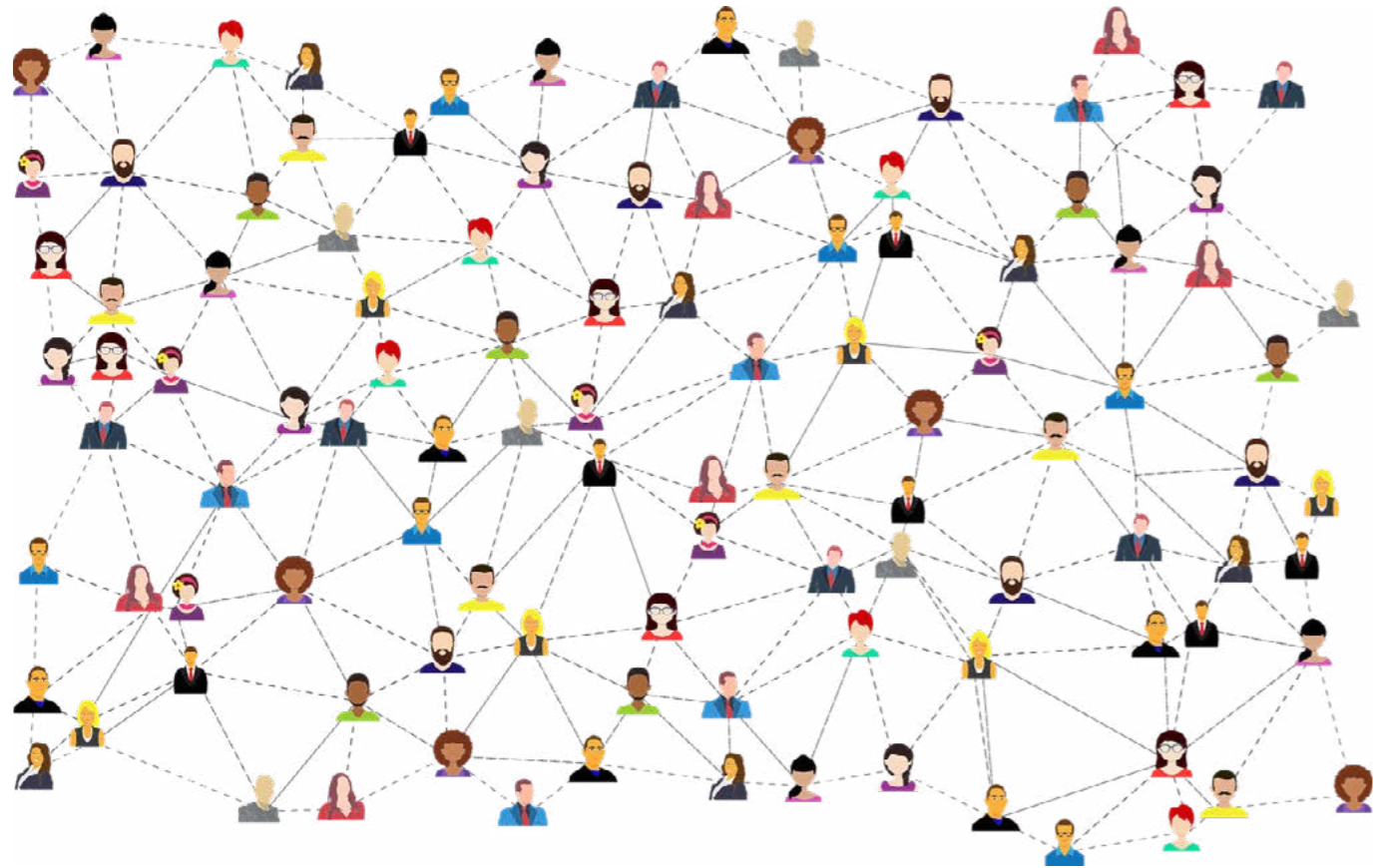
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# Creating Rare Connections

Leveraging technology to bridge the gap between patients and pharma



By Jeremy Edwards, CEO, Xperiome

Patient populations for individual rare diseases are usually small and spread out across many geographies and, unlike more common ailments, information on rare diseases is either not comprehensive or not available at all. This means people living with rare diseases will struggle to find information on their health (or that of their loved one) resulting in feelings of isolation, loneliness, and often desperation.

It's no surprise that as the popularity, and access to mHealth technology has grown over the past decade, many organisations, including healthtech companies, pharma companies, and patient associations, have developed mHealth solutions for rare diseases. These solutions often leverage wearables, symptom trackers, and adherence tools with the goal of capturing valuable information that could influence the development of future treatments for specific rare conditions.

Rare disease mHealth apps are often

developed by, or in consultation with, patient associations and therefore are targeted towards a specific condition, or sub-sets of conditions. They also typically focus on capturing data directly from patients to help track symptoms, and progress. But what if these solutions took a different approach, providing wider-reaching support for patients and caregivers to address everyday questions and challenges that arise as part of life with a rare disease? Such a solution would enable patients and their families to create connections across conditions and learn from common experiences, even though they may be impacted by different rare diseases.

### Expanding connections

By creating a place where patients can both navigate their health journey and share experiences with others, mHealth can provide valuable support and help alleviate the sense of isolation.

There is often very little information

available on rare diseases, so at each step in their journey patients and caregivers must search high and low for information on diagnosis, managing symptoms and flare-ups, potential treatments, or simply finding practical advice on how to manage everyday life. Patients report that they often have to educate themselves to read medical papers in order to find the latest information on research. They become experts in their condition, often knowing more about their disease than their doctors as they continually search for information.

The logical step is to leverage technology to bring those affected by rare diseases together so they can seek out others with the same diagnosis, access information, and share knowledge. What may not be obvious is the importance of creating connections between conditions as well as within them. This is because many experiences are not isolated to specific conditions but rather shared across multiple indications; preparing to send a child with a rare disease to school, com-

municating with physicians who may not be familiar with the disease, or managing symptoms and pain in college or at work.

Such an mHealth platform goes beyond the typical social network. It provides the opportunity for social connection, feedback, and motivation, but - and here's the critical part - also uses machine learning and behavioural science to identify and analyse commonalities in responses to targeted questions and other aspects of the patient experience. All resulting in relevant and timely resources and content. By breaking down the barriers between conditions it is possible to do this for the 7,000+ known rare diseases.

### Bridging patients and pharma

Creating a community to bring rare disease patients together and share experiences presents an opportunity for pharma to engage with patients at every stage of drug development. Typically, pharma only collects data based on specific study objectives and goals, but there is a missed opportunity to widen the spectrum and see the complete picture of real-world

experiences, not just a clinical outcome.

With the continuing drive to become more patient-centric, the opportunity to catalogue and learn from real-life experience allows pharma to unlock new insights outside the constraints of clinical research. It can inform them of what they need to focus on to further drive patient engagement and provide the opportunity to build that relationship based on what people with rare diseases really want.

For example, considering the impact of drug administration, side effects, and the potential disruption to a patient or caregiver's life. Many rare disease treatments are complicated or intrusive, requiring preparation, and impacting quality of life. Medically these treatments address the complications associated with a rare disease, but they don't consider the impact and experience of taking medicine regularly and the disruption and distress this may cause.

Moving on to clinical research, participation in trials is often the only hope of improved treatment for the rare disease community. Providing the opportunity

to learn more about medical research and find out about relevant study opportunities is of high importance to patients and caregivers, whilst trial recruitment is a major challenge for pharma. Therefore, by building a detailed profile of community members (with their consent), specific populations and regions can be targeted to match patients to clinical research opportunities.

Developing a true relationship with patients has historically been very difficult for pharma. However, by creating a community to bring together all those affected by rare diseases and help them navigate each stage of their health journey, pharma can build a new kind of relationship with patients. A relationship based on two-way dialogue, uncovering new insights from real, lived experiences so that a deeper understanding of the realities of life with a rare disease can be developed. Additionally, by enabling the community to express interest in research, in-depth profiles can be created to match patients to research - improving opportunities for patients and ultimately accelerating the development of better treatments. ■

## What are the Greatest Barriers to AI Adoption in Healthcare?

Dr John Payne - Consultant Transplant Cardiologist at the Golden Jubilee National Hospital, Clinical Safety Advisor and Physician Executive - Scotland for InterSystems, discusses whether there is a role for AI in mainstream healthcare and describes what are some of the greatest barriers to its adoption in healthcare.

### What role will citizens play in managing their own health & wellness?

As technology advances, citizens will play an increasingly central role in the management of their own health. One way this is already happening is through the growth of "patient por-



tals” - the ability to access your own healthcare record online from wherever you are.

Whereas previously, a patient’s healthcare record was something curated and reviewed exclusively by medical professionals – reserved for “doctors’ eyes only” – what we are seeing now is the opening up of this healthcare process to the patient side. By accessing their record from a phone or laptop, patients are taking it upon themselves to examine their healthcare details and ensure that their information is accurate and up-to-date. Whether this is as simple as identifying incorrect allergy information or updating outdated treatment details, involving citizens in this way creates a far more transparent healthcare process that improves doctor’s decision-making and drives quality in patient care.

I also expect to see citizens assuming far greater responsibility in the monitoring of their own health. The consumer trends that already exist in this area – such as using wearables to track heart rate, blood oxygen levels and body composition – will become deeply wedded with medical practices, allowing citizens to provide medical information from home that can bridge the gaps between hospital visits. Processes like this will allow patients to share valuable healthcare data that simply cannot be obtained through a doctor’s visits, such as monthly average heartrate or sleep patterns. This will prove critical in giving doctors a better overview of their patients, and allow them to take a more informed, data-driven approach to dealing with health issues.

**Do you think there is a role for AI in mainstream healthcare?**

AI has great potential to compliment and augment existing medical practices, and it has fast become a critical tool in the doctor’s toolkit. As a cardiologist, one area where AI proves immensely valuable is medical imagining. Imaging is exploding in healthcare, and with it has come vast amounts of data that need to be processed. For instance, a single cardiac MRI for a patient can produce up to half a gigabyte of data, which can take up to 30 minutes for a doctor to dissect. AI has massively streamlined this process by processing these images in a matter of seconds. In the

near future we might see this same approach applied across different areas of healthcare to automate laborious tasks and free up medical professionals to focus on where they are needed most.

**Will AI ever assume a critical decision-making role or simply be used as a complimentary tool?**

Whilst AI offers critical time-saving capabilities, there is also clear potential for it to be applied at the highest levels of decision making. Some of the most critical decisions taken by medical staff are data based. Deciding whether to give a patient a transplant, for example, requires the consideration of an enormous number of variables, including heart failure score, kidney status, lung strength and psychological factors. Therefore, the capacity of artificial intelligence to synthesise vast datasets makes it an ideal tool for determining doctors’ next steps at critical junctures of patient care. Embracing AI in this way will also help to remove the subjectivity which so often influences doctors’ decision-making, such as a reluctance to proceed with a transplant following the recent death of another transplant patient.

**What are the greatest barriers to AI adoption in healthcare?**

At the moment, one of the greatest challenges of implementing AI in healthcare is getting doctors to embrace change. Whilst medical professionals are growing to understand the benefits of data-driven approach, it can be difficult for them to relinquish their medical instincts to external processes. This will change as doctors become accustomed to working alongside digital tools and understand their potential in enhancing the quality and efficiency of their care.

At a time when health services are overstretched and under-resourced, implementing new technologies can be difficult. Learning how to use a new tool requires an initial time investment that can be perceived as a burden for overwhelmed medical professionals, but the long term pay off is tools that not only improve the daily tasks of clinicians but drive long term improved outcomes for patients. ■

# The Growth of Accessible Tech in the Hearing Care Industry

*Written by Karen Shepherd, Director of Professional Standards at Boots Hearingcare*

I want you to picture a customer.

He’s young, tech-savvy and a professional with an ambition to progress in his career. He has experienced hearing loss all his life, worn hearing aids throughout and always wrestled with a lack of confidence and self-consciousness because of it.

This customer is very real. He came to

Boots Hearingcare recently and in addition to his small on the ear hearing solutions, we made some custom in-ear products for him. Essentially, it was a black faceplate that looks like a standard earbud, something that he could wear at night in order to be more aware should his baby cry. Beyond that, though, it enhanced his day-to-day life, made him feel comfortable and confident and removed awkward conversations he’d previously encountered when people saw his hearing aids.

Importantly, he felt connected throughout the day.

That customer has been blown away by how it’s changed his life - not in a revolutionary way, but by how it has simplified his life.

That cosmetic narrative in this conversation is what has allowed him to feel comfortable and confident. That accessibility is blurring the line of what is a hearing aid and just technology and is making the industry far more accessible.

That, of course, has been supported by the delivery of a superior experience.

**Hearing aids are now multifunctional and even come with an app**

You may remember a time when hearing aids came with fiddly controls that brought nothing but difficulty, especially for anyone that had dexterity issues.

That has advanced. A lot of hearing aids now come with an app on the phone, allowing the user to control the listening experience on a device they’re familiar with, while the ability for it to geotag and remember how an individual liked their settings is invaluable and is making the technology far more accessible and easier to control.

Bluetooth has also become a great enabler, helping a hearing aid go beyond what its name suggests. It’s making direct streaming music, radio, podcasts, and audiobooks as simple as it would be if you were wearing a pair of the latest Apple AirPods.

Initially, the limitation the industry faced was that hearing aids could be Bluetooth connected and paired to only one device at a time.

However, that barrier has also been

totally removed. Not having the hassle of disconnecting from one device in order to connect with another is an important thing and just simplifies the way we go about our daily lives.

**Pricing structures are more accessible than ever before**

Recently, Boots Hearingcare launched its lowest ever price rechargeable hearing aid - the Starkey Livio 1000 R - available at less than £43 per month.

It’s easy to assume that the product will not be up to the same standard. Yes, it doesn’t offer full flexibility when it comes to bluetooth pairing but does offer direct streaming capability with great sound quality. A product like this is significantly better than any old analogue-type hearing aid and has more features than our lowest entry priced hearing aids.

We know monthly payment plans are a good enabler for people to be able to access higher levels of technology than they otherwise would if they were paying for a product in one lump sum. Going back, many years ago now, the price was a shock factor.

This is still a high-end product, one with exceptional sound quality, and is just one example of how life-enabling technology, like this, is available at an affordable payment price, similar to what you would take out for a phone contract.

**Steps being taken to make accessible tech more accessible**

Remember the customer I referenced at the beginning? What I believe we will see is the industry take strides to get accessi-



ble tech in front of people, like him, at a much earlier stage in their journey.

The online sale market is still an issue, in that sense, that we’re trying to navigate around. I can definitely see people being able to walk into one of our stores and wanting to try some technology that they can pair to their phone - the type of person that, perhaps, is only enduring mild hearing loss.

By training assistants up, we will be able to still do the necessary tests, demonstrations and recommend a product that is either hearing-focused or just wearable. It won’t be prescribed, but it will be a product that will fill that gap before we start opening discussions about thorough investigative assessments.

That type of over-the-counter type product is emerging in America. We know the tech giants are starting to play in this field and that’s something we need to embrace if we are to widen the market, especially when you consider that there are approximately four million people out there who could benefit and enjoy this technology now. People often wait until their hearing loss gets significantly disabling and impacting on the quality of life before they act, by this time they have missed out on a lot.

Products are becoming more accessible, affordable, aesthetically good, and multifunctional. In the meantime, we will embrace that in our mission to widen the market and, as a result, our hope is that people will come to us sooner to ensure they enjoy an enhanced quality of life and can stay connected. ■



# INDUSTRY NEWS

News and Information for Digital Health Professionals



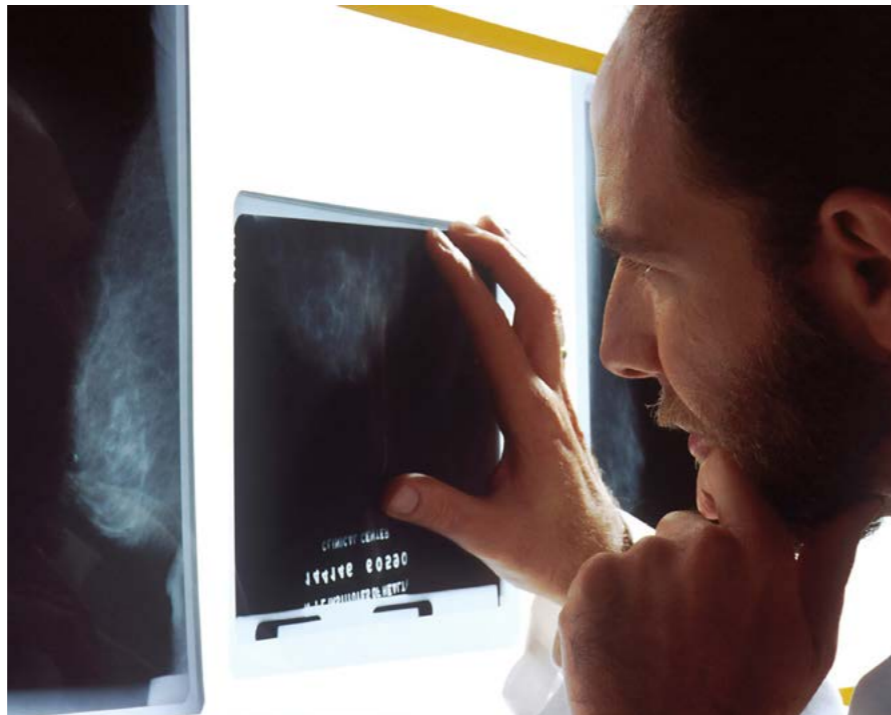
## Teleradiology Start-up Hexarad Aims to Tackle Medical Imaging Crisis

With pressures on radiology services at an all-time high, the ability to provide remote reporting of scans is key function that can help address the current lack of capacity and prevent diagnostic delays.

The demand for radiology services has dramatically increased in recent years, but workforce shortages and the Covid-19 backlog are leading to diagnostic delays for patients. Teleradiology innovator, Hexarad, is a start-up that is looking to try and address these problems by providing radiology technicians and radiologists with specialist remote reporting services.

In addition to the relative shortages of radiologists, there is also a growing need for more specialist and out-of-hours reporting, which many healthcare organisations are struggling to fulfil. Hexarad's teleradiology model provides remote, specialist clinical reporting on diagnostic images to both NHS Trusts and UK private healthcare organisations, with a turnaround time of just 24 hours.

Hexarad was founded in 2016 by a group of NHS consultant radiologists who wanted to address the problem of a global shortage of radiologists. This shortage results in delayed scan reporting and poorer patient outcomes. Their approach is to offer 'intelligent outsourcing,' a model which combines high-quality remote reporting with software that helps radiology departments become more efficient.



Farzana Rahman, CEO of Hexarad, comments: "As radiologists ourselves, we understand the enormous strain that radiology services are under across the UK. We founded Hexarad to address the chronic shortage of radiologists, but the Covid-19 backlog is now straining services even further. It is clear that teleradiology is going to be a key component of medical imaging services moving forwards. Our model is 'intelligent outsourcing' where we not only provide radiology reporting capacity but have technology that helps departments use their in-house resources more efficiently so they only

outsource when they need to."

Hexarad recently closed a £2.3m funding round which included a £1.7 million growth capital investment from Foresight Group, the leading private equity and infrastructure investment manager.

This funding will enable the company to support more NHS and private healthcare customers, adding deeper capability and specialisation to its reporter network and further improving the technology which is core to its customer and radiologist experience. ■

## Ellipsis Health Aims to Harness the Power of Voice to Pioneer a New Clinical Standard in Mental Health

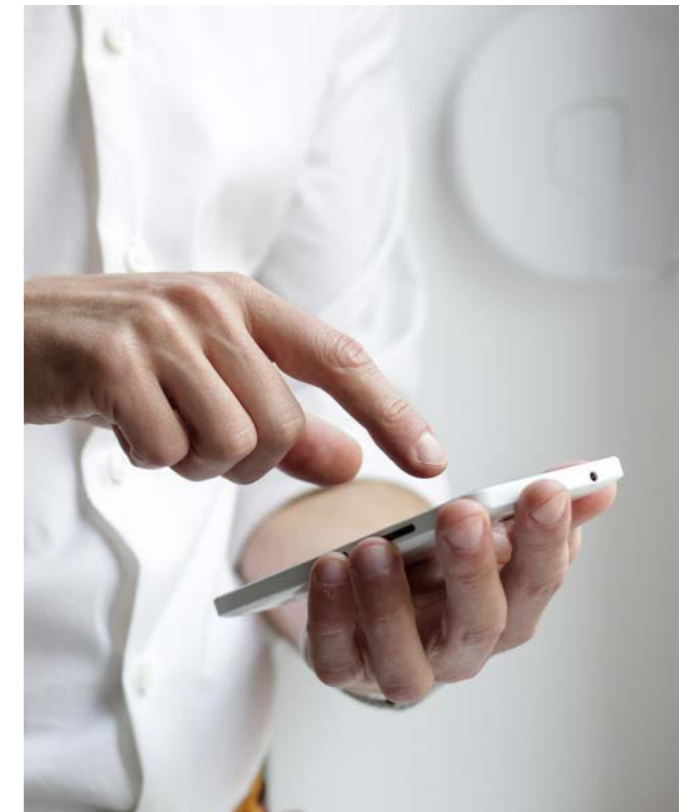
Ellipsis Health has raised \$26 million in Series A funding to further its measurement-based approach to identifying and quantifying behavioral health conditions. Through voice technology, Ellipsis Health empowers people to take control of their mental health and supports clinicians managing surging patient volumes.

Ellipsis Health is on a mission to establish voice as an affordable, non-invasive vital sign as the next clinical standard in mental health care – globally. Using artificial intelligence and machine learning, Ellipsis Health generates a science-based assessment of stress, depression and anxiety from less than 60 seconds of a person's natural speech. The company works with innovative payers, providers and employers including Cigna Corporation's international business, who are advancing mental health care and enabling the democratization of emotional wellbeing by increasing access to services and improving care. The Cigna StressWaves Test, created in partnership between the two companies, is an online tool that analyzes acoustic and semantic voice patterns to evaluate stress levels.

Behavioral health conditions are at epidemic proportions with 28 percent of people in the U.S. having depression, 36 percent suffering from anxiety, and 41 percent reporting mental health disorders within the last year, two times more than 2019. Approximately one-third of people with chronic conditions such as diabetes, heart disease and kidney disease are also battling depression. The National Alliance on Mental Health estimates that 55 percent of people with mental illness are not receiving treatment. To further exacerbate the crisis, estimates project a shortage of up to 30,000 psychiatrists in the U.S. by 2024.

"Now more than ever, we need to prioritize the adoption of solutions that scale access to mental health awareness, diagnosis and evidence-based treatment," remarks Cody Nystrom, Managing Director with SJF Ventures. "To effect meaningful and urgent change, providers need efficient, scalable clinical decision support technology like Ellipsis Health to help identify and stratify patients so we can appropriately treat behavioral health conditions early and often."

With the funding, Ellipsis Health will continue to grow its customer base, expand global partnerships, build a multidisciplinary team, research and develop new voice-based technology, and continue its work in dismantling the pervasive stigmas around behavioral health. Most importantly, the company will be expanding its voice vital sign to address the mental health of children and adolescents. These more vulnerable populations are often not investigated as vigorously, which can delay a diagnosis and critical treatment leading to devastating outcomes. A report from the Centers for Disease Control and Prevention found



the rate of suicide among those aged 10 to 24 increased nearly 60 percent between 2007 and 2018, highlighting the desperate need for accessible and innovative clinical decision support tools like Ellipsis Health.

Ellipsis' models analyze both what is said (using natural language processing) and how it is said (acoustics, such as tone and timing) to better understand a person's emotional state. The technology seamlessly integrates with mobile apps, patient portals and telehealth visits – easily enabling data-driven care, workflow efficiency and positive economics for providers, insurers and employers. The company is closing the mental health screening gap by identifying people who need help sooner while also bridging the monitoring gap by gaining visibility into people's mental health over time and between appointments.

"The Ellipsis Health team is incredibly grateful to everyone who is working tirelessly to build awareness and compassion for behavioral health conditions, and we are excited to continue to collaborate with more partners in the industry to systematically establish a new clinical standard in mental health care," said Mainul I Mondal, Founder and CEO of Ellipsis Health. "Together, we can revolutionize emotional wellbeing and enable people to build deeper relationships, connections, and bonds with each other." ■

# Slovenia Launches its National EU Digital COVID Certificate in only Three Weeks

Slovenia has launched its EU Digital COVID Certificate (a Digital Green Certificate), which was developed in only three weeks, and built on top of a clinical data repository (CDR) as a core component (for the persistence of data) of the National Centralised Patient Data Registry, all of which was powered by Better Platform. The service generates a certificate based on the persistent data available in Slovenia's national CDR. This rapid development of a citizen certificate was made possible by an open-platform approach, which was adopted by Slovenia and separated the data from the application. The certificate document is available on-demand in digital or PDF form, with QR codes.

## Accelerating the transformation for integrated care systems at scale

The fundamental prerequisite for supporting an integrated care system is a data-driven digital health platform with a standards-based, vendor-neutral clinical data repository. This enables healthcare systems to work with different vendors to develop any kind of applications without the fear of data being locked in, which is currently a major obstacle to progress among organisations using monolithic solutions.

The Covid pandemic has reinforced the notion that the most significant value of IT systems in healthcare is that they make data available when and where it is needed. That is why the integration of health information systems across a region – or a country – is a crucial foundation for successful care delivery. The pandemic pushed national health systems to quickly develop new digital solutions for health and care services, manage epidemiological data, and organise Covid tests and vaccinations. The EU Digital COVID Certificate is the latest example of a solution that was developed at this new fast pace in order to allow citizens to travel safely this summer.

The Slovenian healthcare system already had the national eHealth infrastructure needed to support Slovenia's health and care services. It already enables document-level sharing and the mobilisation of documents produced by legacy systems and ensures the capability of putting data into an open, structured format that is technology- and vendor-neutral. It also provides an integrated care record (a centralised registry of patient data) which makes data available for any digital services instantly, at scale and volume. Currently, it contains:

- » more than 150 million health records for 2.1 million unique individuals (98% of the population);
- » more than 86% (135 million) of records in the form of structured data that uses openEHR models, with 63% of records being the core data set, or patient summary data (diagnoses, surgical procedures, vaccinations, allergies,



- dispensed medication, and more);
- » more than 4 million records of Covid-19 screening (test results);
- » unstructured data that includes discharge summaries, clinical notes, opt-in statements, consent documents and other clinical data;
- » data which is sent to the national system by more than 1,250 registered healthcare providers in Slovenia;
- » a large number of queries, as, on average, healthcare providers trigger almost 10 million queries or "retrieve calls" per month.

This approach enables a rapid response and deployment with a modular and open architecture – a data-driven infrastructure built on top of Better Platform which connects healthcare providers with various clinical systems through common and open standards. The data is stored around the patient, not a healthcare institution, in a vendor-neutral clinical data repository. It provides integrated care records and serves as a single source of "truth" for the lifetime of the patient.

Better Platform enables an open digital health platform approach which allows for the fast development and deployment of digital solutions to manage the Covid-19 pandemic

Initially, the digital health platform enabled the Slovenian Ministry of Health to respond rapidly and deploy a COVID-19 screening data management solution on a county-wide level in a mere 14 days (launched in December 2020). With vaccination data available through the national eVaccination registry, there was no need for additional data to be generated solely for certificate purposes. The structured EU Digital Covid Certificate is available for different systems using the IHE XDS OnDemand

profile, providing a vendor-neutral exchange of documents.

Ministry of Health of the Republic of Slovenia Janez Poklukar commented: "We are happy that we already had the suitable IT infrastructure in place in Slovenia. It allowed us to respond quickly and provide the necessary digital solutions that support the efforts of medical and epidemiological teams to manage the pandemic, as well as to allow our citizens to travel freely."

The EU Digital Covid Certificate solution, developed by a third-

party vendor, uses integrated care record data (demographic data, vaccination data, test result data) which is already available in the The Central Registry of Patient Data (CRPD). The data is made available through previously established services by the national Covid-19 screening data management solution and the national eVaccination registry – so there is no need for additional data to be generated solely for certificate purposes. The structured EU Digital Covid Certificate is available for different systems using the IHE XDS OnDemand profile, providing a vendor-neutral exchange of documents. ■

# Population Health Management Solution Delivers \$178 Million in Gross Medicare Savings in 2020

Florida-based population health management technology company, The Garage, has released figures demonstrating the extent to which their digital platform has helped its healthcare providers achieve significant savings. The company reports that its partners made \$177,789,838 in gross Medicare savings in 2020.

In addition, The Garage's accountable care organization (ACO) partners using the company's Bridge platform received an average quality score of 97.64%, according to figures released by the Centers for Medicare and Medicaid Services.

The 2020 cost savings and quality score represent a significant increase from the previous year. More than 120 ACOs and independent physician associations (IPAs) and other value-based care providers across 30 states now use The Garage's Bridge population health management platform, representing about 18,000 providers.

ACOs are groups of doctors, hospitals, and other providers who come together to take accountability for the cost and quality of patients. They earn the right to share with Medicare savings generated if certain spending and quality metrics are met. The program is intended to encourage value-based care, where providers are reimbursed for the quality of services provided rather than just the quantity. Value-based care creates better health outcomes for patients, an improved care experience, and lower overall cost.



"As part of our overall strategy, implementing the Bridge platform has given our practices and providers the tools they need to drive results in value-based care," said Joe Taylor, Executive Director, Community Care Collaborative of PA & NJ. "As a result we saw savings of more than \$11M and an improvement in quality - during COVID - that directly impacts patient lives and improves overall outcomes in our community"

The Garage has been working with ACOs since its inception in 2012. The platform, Bridge, is the leading Population Health Management system for value-based care that aggregates data across multiple sources to generate intelligence for its applications covering Advanced Analytics, Care Co-ordination and Management, Patient Engagement, Risk and Performance Man-

agement, Utilization Management, Revenue Optimization and many more.

In partnership with the value-based care providers we support, we have been building the Bridge platform into the most comprehensive and effective platform available for population health management," said Pranam Ben, CEO of the Garage.

"We've grown our impact to more than 30 states, enabling exceptional quality care and contributing to more than \$608 million in gross Medicare savings to date. We are committed to making value-based care the norm in the U.S. healthcare system, and our ACO partners are demonstrating the real-world impact technology can have in driving value for taxpayers, healthcare providers and patients." ■

# Community Wellness Introduces COVID Home Management Program

Leading U.S. national provider of Remote Patient Monitoring (RPM) services, Community Wellness, has introduced a new program designed to expand the bandwidth and clinical strength of American hospitals due to the COVID-19 Delta surge.

At the time of writing, the U.S. is recording more than 1,000 deaths a day, a count that has more than tripled in a month. Hospitalizations have risen significantly during the summer and as a result many hospitals and care providers continue to struggle to manage the volume of inbound patients.

The new offering for Community Wellness has been developed to offer a comprehensive, turnkey home monitoring program for COVID patients designed to improve outcomes for patients and preserve limited hospital resources.

Community Wellness provides FDA-approved, Bluetooth-enabled devices and a HIPAA-compliant app for tracking symptoms and vital signs to monitor patients, allowing them to safely recover in the comfort of their own homes, thereby reducing unnecessary hospitalizations and improving utilization of limited resources, e.g., ED beds, staffing, and ancillary support.

In the event of a patient's deterioration as detected by vital sign changes, worsening symptoms, or clinical concerns raised by the Community Wellness clinical support staff, and under the direction of the hospital-appointed physician prescribing the service, the patient will be returned to an appropriate medical facility for advanced supportive care (likely a direct ED admission).

"Our hospitals and providers are heroically and tirelessly man-



aging an enormous surge in COVID patients presenting to their Emergency Departments. We can ease the burden on both the healthcare system and patients for those with low-to-moderate risk of progressing to severe or critical illness. Using simple-to-use home medical devices, along with video, voice, and text access to our clinical support staff, patients can safely recover in the comfort of their own homes in most cases," said Community Wellness Chief Medical Officer, Scott Parzynski, MD. "Should their condition warrant, they would be able to return to the ED for a fast-track readmission and definitive care."

Community Wellness is making its COVID Home Management program available to U.S. hospitals and large clinics seeking solutions to ED overcrowding as a result of the pandemic. ■

## Smartphone Blood Pressure App Publishes Clinical Validation

The team behind the OptiBP app that uses a smartphone's camera to accurately record blood pressure has published clinical study results that validate the accuracy of the technology.

Conducted by the team of Prof. Patrick Schoettker at CHUV Lausanne University hospital and the University of Lausanne UNIL in Switzerland, the study results confirm Biospectal OptiBP meets the ISO 81060-2 international protocol for accuracy for blood pressure measurement devices. The study results also rein-

force the clinical accuracy of Biospectal's OptiBP software-based smartphone app solution to accurately measure blood pressure utilizing transdermal optical sensing with only a fingertip applied to the lens of a smartphone camera.

"While cuffless blood pressure measurement devices such as dedicated wrist bands and smartwatches exist in the market, Biospectal is the only validated, software-based smartphone app solution that meets the ISO 81060-2 international protocol for accuracy," said

Biospectal CEO and co-founder Elliott Jones. "Biospectal OptiBP makes a huge leap in the ease of blood pressure monitoring and management by enabling convenient, frequent monitoring capability via a smartphone app. As a result, Biospectal OptiBP is well-positioned to become the new essential tool, not only for daily blood pressure monitoring but also for communication with physicians in times of growing telehealth practices."

The Blood Pressure Monitoring Journal study demonstrates the accuracy of the

Biospectal OptiBP smartphone app to estimate the blood pressure of participants using a standardized protocol set by the Association for the Advancement of Medical Instrumentation/European Society of Hypertension/International Organization for Standardization (AAMI/ESH/ISO). The study complies with the ISO 81060-2 norm, which establishes a list of standardized criteria to validate the accuracy of a new non-invasive blood pressure measurement device.

A comparison was performed between a standard measure (auscultatory blood pressure estimation with a double stethoscope and independent blinded experienced observers) and the cuffless Biospectal OptiBP device to obtain the results. Results demonstrate a mean error of  $0.5 \pm 7.7$  mmHg for systolic and  $0.4 \pm 4.6$  mmHg for diastolic blood pressure, within the ISO 81060-2 norm's allowable  $\pm 5$  mmHg mean error and standard deviation of  $\pm 8$  mmHg for systolic and diastolic blood values. As a result, Biospectal OptiBP's performance meets the ISO 81060-2 requirement and demonstrates equivalent performance to the standard inflatable cuff.

According to the World Health Organiza-

tion, high blood pressure or hypertension is the number one chronic condition and a major cause of premature death worldwide and the most important, modifiable risk factor for cardiovascular disease. Dubbed "the silent killer," hypertension has no noticeable symptoms to indicate something is wrong. Undiagnosed and uncontrolled hypertension are two of the most significant contributing factors to morbidity and mortality. The best ways for patients to protect themselves are being aware of the risks of hypertension and making positive lifestyle changes.

"The study by the Blood Pressure Monitoring Journal further validates the precision of software-as-a-medical-device technology in a standardized clinical setting, and marks an important milestone to democratize access to blood pressure measurement for hypertensive patients worldwide," said Prof. Patrick Schoettker, M.D., Chief Medical Advisor at Biospectal. "Access to smartphone-based solutions to measure blood pressure will allow widespread diagnosis of hypertension and could thereby improve management of hypertensive patients in various settings. This is particularly true in low-income countries where blood pressure devices are scarce,

but smartphone penetration is high."

Backed by grants from the Bill & Melinda Gates Foundation and Global Grand Challenges Canada's Saving Lives at Birth initiative, Biospectal also recently launched two global, independent research and validation studies using Biospectal OptiBP. Currently underway in four low-resource countries, the studies center on the routine measurement and monitoring of blood pressure, assessment of hypertension during pregnancy, and enable global field testing and validation of Biospectal's OptiBP smartphone app and data platform integration with the WHO's Digital Antenatal Care module, following WHO SMART guidelines and built on the WHO Open Smart Register Platform (OpenSRP). Biospectal's patented OptiBP technology was co-developed and clinically validated by the Swiss Center for Electronics and Microtechnology (CSEM). A large-scale, third-party research study published in Scientific Reports in Nature in October 2020 also demonstrated Biospectal's ability to measure blood pressure as accurately as a sphygmomanometer, commonly referred to as a standard blood pressure cuff. ■





# Over 200 Leading Healthcare Thinkers and Experts Lined up for the 44th World Hospital Congress

An ensemble of over 200 presenters comprising of healthcare experts, leading industry thinkers, and best practice presenters is being lined up for the 44th World Hospital Congress – the flagship event of the International Hospital Federation (IHF) – which will take place on 8 to 11 November in Barcelona, Spain, along with an online broadcast exclusively available for virtual attendees.

Hosted by La Unió Catalana d'Hospitals (Catalan Hospital, Health and Social Services Association - UCH), the Congress is poised to be one of the first hybrid healthcare management events that will happen in the region. It is a unique global forum where industry executives from more than 50 countries will convene to share new knowledge, expertise and good practices in hospital and healthcare leadership, management, and service delivery.

Over 60 sessions have been arranged to fill a well-thought, wide-ranging program that covers important topics related to the theme: People on board: Transforming healthcare by blending agility, responsiveness, and resilience. Among several sessions across the four-day event, the following are some of the thought-provoking topics available in the program:

## Getting ready for the next global pandemic: European and North American perspectives

Public health leaders and hospital CEOs will share their views on how the next global pandemic might unfold and how they are leading their organizations to prepare for the next global health crisis. Hear from:

- » Dr. Rod Hochman, President and CEO, Providence, United States
- » Prof. Natasha Azzopardi, Director, World Health Organization
- » Dr. Bechara Couchair, Vaccinations Coordinator - White House COVID Response Team
- » Prof. Josep M Campistol, CEO - Clinic Hospital, Hospital Clínic Barcelona, Spain
- » Wright Lassiter III, President and CEO, Henry Ford Health System, United States
- » Bertrand Levrat, CEO, Geneva University Hospital (HUG), Switzerland

## Accelerating research, development and distribution of the COVID-19 vaccine: Lessons learned from key stakeholders

Various stakeholders will discuss key learnings from the fast-tracked journey of the COVID-19 vaccine and how these can be applied to the near future. Hear from:

- » Dr. Hans Kluge, Regional Director for Europe, World Health Organization
- » Dr. Carmen Cabezas, Secretary of Public Health, Department of Health of the Generalitat de Catalunya, Spain
- » Thomas B. Cueni, Director General, International Federation of Pharmaceutical Manufacturers & Associations

- » Dr. César Hernández, Head of Department of Medicines for Human Use, Spanish Agency for Medicines and Medical Devices, Spain
- » Dr. John N. Nkengasong, Director, Africa Centres for Disease Control and Prevention, Ethiopia

## Nursing leadership in transforming healthcare during a world-wide pandemic: Examples from the field

The importance of global nursing leadership initiatives such as Nursing Now and the Nightingale Challenge will be tackled. Nurse leaders in various roles will share the challenges they faced, successes and innovations during the pandemic. Hear from:

- » Dr. Robyn Begley, CEO, American Organization for Nursing Leadership; Senior VP and Chief Nursing Officer, American Hospital Association, United States
- » Lord Nigel Crisp, Former CEO at NHS in England and Former Permanent Secretary of the United Kingdom Department of Health
- » Dr. Maria Eulàlia Juvé Udina, Board Member, International Council of Nurses; Nurse Executive, Catalan Institute of Health, Spain
- » Prof. Adelaida Zabalegui, Vice Director of Nursing, Hospital Clinic of Barcelona, Spain
- » Romnick Aguilar, Acting Chief Nurse and Infection Prevention and Control Officer, San Pedro Jose L Amante Emergency Hospital, Philippines
- » Zipporah Iregi, Nursing Officer Intern, Kitui County Referral Hospital, Kenya

## Harnessing innovations to build back better: European lessons from the pandemic

Key innovations in the hospital sector will be explored, specifically the areas of telemedicine and technological solutions, skill mix, and bed management to draw lessons on how to build back better our hospital services through adoption, implementation and scaling up of innovations. Hear from:

- » Dr. Josep Figueras, Director, European Observatory on Health Systems and Policies
- » Prof. Dr. med. Reinhard Busse, Head of the Department of Health Care Management, Berlin University of Technology, Germany
- » Dr Nick Fahy, Senior Researcher, Nuffield Department of Primary Care Health Sciences, University of Oxford, UK
- » Prof. Marc Noppen, CEO, UZ Brussel, Belgium
- » Dr. Dimitra Panteli, Programme Manager, Lead Health System Innovation, European Observatory on Health Systems and Policies
- » Dr. Liisa Maria Voipio Pulkki, Director General of Strategic Affairs and Chief Medical Officer, Finnish Ministry of Social Affairs and Health, Finland

# 2021 IHF BARCELONA 44th World Hospital Congress

8-11 NOVEMBER 2021 | PALAU DE CONGRESSOS DE CATALUNYA

## Humanizing technology for smart healthcare delivery: The COVID-19 impact

This will demonstrate how technology-enabled healthcare has huge potential to better humanize healthcare and deliver a more personable and dedicated patient experience. It will focus on how healthcare systems and services have fundamentally changed throughout the pandemic and how digitally enabled healthcare is now a mainstay of many hospital services around the world. Hear from:

- » Richard Stubbs, Chief Executive, Yorkshire & Humber AHSN, United Kingdom
- » Dr. Preetha Reddy, Executive Vice Chairperson, Apollo Hospitals Enterprise Ltd., India
- » Dr. Anne Snowdon, Chief Scientific Research Officer, HIMSS
- » Dr. Heidi Sveistrup, CEO & Chief Scientific Officer, Bruyère Research Institute, Canada
- » Yulun Wang, Founder and Chairman, World Telehealth Initiative, United States

tiative, United States

In addition to the plenary and parallel sessions, there will be posters on display, tradeshow and exhibition by participating organizations and providers, hospital visits, special events for those attending in person and numerous networking opportunities both for presentational and virtual attendees.

With a highly comprehensive program to offer, the IHF and UCH invite healthcare professionals to participate and become part of the important discussion on the transformations that are affecting continuous evolution in the global health system.

Early bird registration to the 44th IHF World Hospital Congress is open until 31 August.

For more information visit [www.worldhospitalcongress.org](http://www.worldhospitalcongress.org) or contact [congress@ihf-fih.org](mailto:congress@ihf-fih.org). ■

# Sensyne Launches Real-world Patient Data Analytics Platform, SENSIGHT

Sensyne Health has announced details of its new real-world patient data analytics platform SENSIGHT, which pioneers a new model for democratizing life science research. Developed using Sensyne's unique data-partnership approach to health data, the new platform is designed to dramatically lower financial barriers in accessing insights from global anonymised and de-identified curated high-quality, longitudinal real-world healthcare data at speed and scale.

SENSIGHT is the first data analytics platform to provide industrial scale access to anonymised and de-identified real world data insights globally across multiple therapy areas combined with built in simple to use research algorithms.

The platform provides clinicians, research academics and life science professionals with an instant AI research capability to analyse



health insights across a curated common data environment, underpinned and protected by a rigorous information governance and security framework. No direct patient data is, or ever will be, shared on SENSIGHT. The platform instead rapidly interrogates Sensyne's deep diverse datasets and

delivers intelligent analytics and data-driven insights, not the data itself. Subscribers will be screened to ensure legitimate interest, with only those in accredited companies and organisations being accepted.

Researchers can communicate and ➔

collaborate with each other on the platform - creating a virtual scientific research network that connects professionals across the healthcare and life sciences industries creating a community with common interests in particular research fields or areas of unmet medical need.

Lord (Paul) Drayson PhD FREng, Chief Executive Officer of Sensyne, said, "Sensyne Health was founded to bring the power of clinical AI and health data analytics to improve patient outcomes, reduce healthcare costs and accelerate the discovery and development of new medicines. For several years we have worked within an ethical, transparent, and fair framework that ensures patient data privacy and security and shares the commercial return from our work with healthcare providers such as the NHS and health systems in the US. SEN-

SIGHT now enables us to exponentially scale that vision and creates a new channel for our other products and services. The transformative power of Sensyne's ethical AI is now available to the smallest and largest healthcare and life sciences organisations and its design enables the creation of a global community of researchers all working towards a common aim: better health for all."

SENSIGHT has launched with access to a 2 million anonymised and de-identified patient data set which is expected to grow rapidly to 10 million patients by the end of December 2021. The data is available from Sensyne's unique research partnerships with leading NHS and international healthcare providers.

This data is available free to Sensyne's partners, while commercial users will be

charged £25,000 per person per year.

### Synthetic Patient Cohorts

A specific feature of SENSIGHT at launch is the ability to offer medical researchers unique functionality to analyse the feasibility of running synthetic control arms on specific patient data sets using Sensyne's proprietary analytics tools. Synthetic control arms create virtual patient groups based on real patient data to serve as the control group in a clinical trial.

The platform enables the ability to create, validate and explore curated patient cohorts, initially in the areas of heart failure, stroke, and haematological cancer with a further six disease areas following by the end of December 2021 and future plans for SENSIGHT eventually covering most disease areas. ■

ations, providers can use these digital tools to optimize care and build long-standing relationships with patients."

Additional findings from the Healthcare Management and Patient Loyalty Report include:

- » Data security is a top concern - 64% of patients would be more likely to use a digital health tool or platform if I had confidence that it kept my data secure.
- » Communication is key to building trust - 75% of patients believe that the better their healthcare providers are at staying in touch with them, the more trust patients have in doc-

tors' management of their health.

- » Younger generations are more interested in tech-managed health options - 68% of those 18-40 would consider utilizing a digital tool (such as a mobile app, smart watch, or voice-prompted assistant) to manage their health compared to 37% of those aged 56 and older.
- » When managing health conditions with digital tools, there is room for improvement - When it comes to managing and monitoring a health condition only 52% of patients were satisfied with hands-free devices or voice assistants like Alexa, 64% were satisfied with mobile apps and 70% were satisfied with smart watches. ■

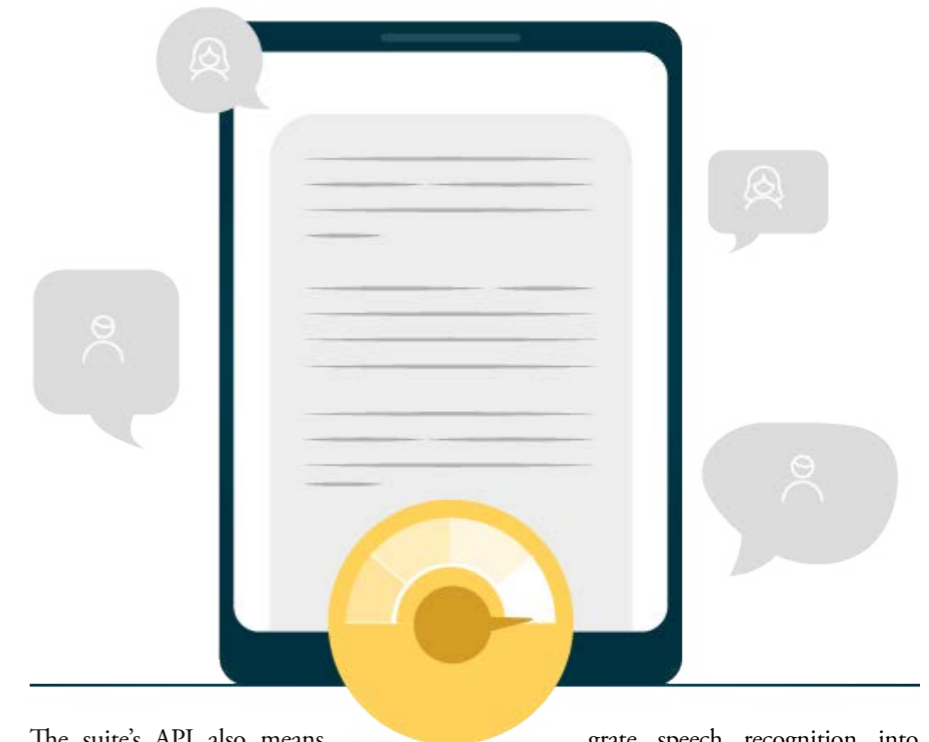
## Portable, Secure AI-Powered Speech Recognition Reduces Hospital Clinical Admin and Costs

The global pandemic has further highlighted the need for more efficient, device agnostic, voice-enabled healthcare products and services and an accelerated move away from legacy devices such as pagers and unsecure commercial generic voice recognition apps. Advancements in AI and voice technology mean clinicians now have access to secure tools that can help reduce admin by up to an hour a day and save hundreds of pounds in related data entry costs.

Clinical voice solutions specialist, Scribetechnology, is one provider working with healthcare institutions across the UK to implement its new cloud-based voice AI product suite, Augnito.

Augnito is an evolution of Scribetechnology's digital dictation and transcription services, which have been used by the NHS for 20 years. It is a portable, secure, cloud-based, AI-driven clinical speech recognition product that offers fast, easy ways to capture live clinical data on any device, Windows, Mac, or smartphone, with 99% accuracy.

It turns medical information into clinical documentation by automatically transcribing medical records, referrals, or patient letters at the point of dictation. Augnito also supports speciality language models including radiology, histopathology and cardiology and can recognise regional and international dialects.



The suite's API also means that Scribetechnology is working with hospitals to integrate voice accessibility to existing Trust's clinical systems or to speech-enable an EPR. A unique kit offers healthcare technology professionals and software developers a fast, easy way to automatically integrate speech recognition and voice-driven commands and controls into their own clinical systems.

In addition to saving healthcare professionals up to an hour on admin work every day with at-the-cursor speech recognition, speech systems are also being used to inte-

grate speech recognition into clinical systems providing options to update patient records and streamline existing workflows quickly and easily.

Shiraz Austin, Co-Founder and Managing Director of Scribetechnology, said: "The pandemic has highlighted the need for more efficient solutions in our healthcare systems. Augnito has been designed with input from doctors and AI scientists with the aim of significantly reducing clinicians' workloads, allowing them to focus on providing the best possible care for their patients." ■

## Survey Reveals Digital Tools Are Key in Maintaining Patient Engagement

According to a new survey from digital consultancy Mobiquity there is a significant divide between how patients across different age groups leverage technology to monitor and manage their health. The Healthcare Management and Patient Loyalty Report provides insights into how digital health platforms impact patients' engagement, trust and loyalty

It comes as no surprise that the majority of patients have increased usage of telemedicine options in the last year, but 80% of older patients (56+) still prefer more face-to-face interaction with providers. On the other hand, 54% of those 25-40 would like to continue using telemedicine as much as possible even as in-person restrictions continue to be lifted.

Beyond aiding with communication, technology use plays a significant role in patient loyalty. If a healthcare provider offered telemedicine options, over half of respondents aged 18-40 would be more likely to keep annual visits and seek preventive care versus 29% of patients 56+. On top of that, 50% of patients 25-40 stated that once they have gone through the process of setting up their provider's mobile app, they are less likely to switch compared to only 29% of those 56 and older. Additionally, 44% of those aged 25-40 would switch doctors to get a better digital experience while only 12% of those 56+ would do the same.

Even with this generational divide, there are a few universal findings:

- » Of those surveyed, 95% indicated that it is important that their healthcare provider makes it easy for them to ask questions and get responses from a physician or nurse.



- » If the overall experience is easier, 78% of patients are more likely to seek medical treatment.
- » Only 67% expressed satisfaction with telehealth, indicating there is plenty of room for improvement.

"In the last 18 months, healthcare professionals had to rapidly transform their digital offerings to provide care to patients while also ensuring both parties' health and safety," said Teun Schutte, managing consultant at Mobiquity.


"Across all industries, we've found that these digital habits are not going away. When it comes to healthcare and life sciences, our report confirmed that catering to these new tech-focused preferences is necessary to build strong and trusted relationships with patients. By providing a variety of care options to all gener-

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