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Creator: Rich Quelch – Head of Marketing

Document: Whitepaper: Wearable Tech & General Technology is Advancing in the Healthcare industry

Technology is advancing and evolving with every passing day. This is certainly true in the health industry, and it is incredible to think just how far we have come. These days, it's not uncommon to have robotics as an element during surgeries while virtual reality tech is being used in medical schools to give students a hands-on approach in a safe environment. On a more basic level, touch screens and tablets can be used to process patients quickly while still maintaining an excellent quality of care.

Today, a new trend is sweeping across the health industry, and that is wearable tech. Wearable tech has already become a major part of our personal life. We use it to keep track of our number of steps, measure our heartbeat and tech like Apple Watches has a variety of functions. However, it is now quickly becoming a vital tool and taking an important place at the health industry table along with other digital technologies.

Wearables And Developments

There have been a number of incredible developments in wearables that are used in the medical field. The AccendoWave and Samsung partnership has lead to a device that can be worn and used as a pain distraction. After a six month trial period, the tech showed promising results with 90 percent of users saying they enjoyed wearing the device. Today, the tech which monitors pain levels and then provides a range of distractions from games to TV shows or music is being tested around the country.

There is also tech that can be used to safely track patients easily like the Fever Scout. Anyone who has ever worked in a hospital will know how difficult it can be to keep track of all patients. With the Fever Scout, the device can be placed on the patient. If there is a spike in their fever and they require attention the doctor or nurse can be alerted immediately. This device was introduced in 2017 and has seen a great level of success on the market. It has been particularly helpful for patients that need to be constantly monitored such as young children.

Wearable tech can also be used for recovery, and an example of this would be the Rapeal Smart Glove. The glove fits on to the hand like an exoskeleton and can be programmed for thirty-minute exercises that measure and improve the movement in patients who have suffered from a stroke. The glove uses Bluetooth technology and has been on the market since 2014. It can even be purchased for home use.

Indeed, even surgeons have benefited from the use of wearable tech with some quickly gravitating towards Google Glass. Glass was supposed to be released onto the public market but never emerged. However, that hasn't stopped it being used in surgeries where doctors have expressed their delight at having all the information they need right in front of their eyes. Wearable tech that includes AR support may also one day be used to make sure every surgical procedure can be performed with pinpoint accuracy.

Clinical Trials And How Digital Technologies Can Support Accurate Data

Digital technologies have certainly improved clinical trials by providing real, accurate data for doctors and researchers. In clinical trials, it is crucial that all variables measured do provide information that is as accurate as possible down to the lowest decimal. This level of accuracy will lead to clearer results that will ensure that the best possible treatment plans are developed.

With wearable tech, patients can constantly be monitored, and the information can be viewed in real time. This means that doctors running trials will always have the accurate, real-time information they need. As well as this, the latest tech can measure

and provide information back to doctors and researchers at set intervals, often without any patient interactions.

Thanks to cloud server technology, all the information and data collected from these trials can be uploaded and accessed instantly on a number of tech devices including tablets, phones and laptops. Thanks to new encrypted software, all the data can be kept safe and secure under new standards of regulation.

Wearable tech and digital technology can also improve how patients are found and enrolled in clinical trials. In trials, it is crucial that patients match certain requirements so that the results of the study are not invalidated. With wearable tech, doctors can get the best, up to date and accurate information on each individual patient. And, with online digital technology, patients can use databases to find the clinical trials they want to join and quickly sign up to give them the best change for treatment.

Real-Time Communication

Research is currently ongoing into wearable tech that will provide true, real-time communication between patients and doctors or health professionals. Essentially, this is about taking the concept of wearable tech one step further. As already mentioned, wearable technology has become a massive part of our lives and can measure various aspects of our health such as our blood pressure. Researchers are now interested in exploring how to make this tech and even more natural part of our everyday life in a way that can benefit the health industry. Ideas include wearables underneath the skin, inside clothing and even electronic skin. Everything from wearable stethoscopes to asthma monitoring patches and smart bandages are currently being explored and in active development.

With tech like this, doctors will receive real-time information and be able to act upon it immediately. Patients could also be alerted as to when to administer their own care. For instance, an asthma monitoring patch might alert someone when they were going to have an asthma attack so that they could get their inhaler.

For more basic tech, we can look to the devices that almost everyone carries around with them - smartphones. A survey revealed that 95 percent of nurses use their smartphone while they are at work. With software like TigerText, real-time communication is a possibility allowing doctors and nurses to collaborate in a way that is completely HIPAA compliant. Alerts can be received from the LAB, EHR or ADT systems and attachments can be sent or forwarded securely to improve patient care.

How Digital Will Improve The Future Of Drug Development

Industry experts believe that digitalization is the answer how to improve drug development and the management of the supply-chain for pharmaceutical companies. With digital tech, there can be a greater level of efficiency in this field leading to better and indeed cheaper drug development. By reducing the costs, more healthcare companies and indeed patients will gain access to the drugs they need. According to some analysers, there could be an average saving of $300 million for each drug approved.

This again, links back to wearable tech because with wearables the clinical trials needed to test drugs will be faster, more effective and more efficient. Today, results from these trials are typically collected from visits to the hospitals, but that is quickly changing. With wearable tech, the results of drug trials can be gained instantly leading to faster approval and reduced costs.

`As well as this, many drugs trials are reliant on the memory or indeed the guesswork of patients. With wearable tech, this can change, and instead real, accurate information can be collected directly from the device.

There’s another type of tech that will also play a vital part in the future of drug development. AI technology could again increase efficiency when sifting through data. Rather than using labour, an advance AI software could explore a wide collection of data in minutes, finding patterns and promising results or even the right compound for a certain drug. This could ultimately eliminate human error from the equation.

What Is The Future Of Digital Within Pharma?

Today, digital technologies already play a vital role in the pharma industry and in the future that role will continue to grow. Artificial intelligence is certainly going to play a major part in medicine and healthcare over the next few years. It is entirely possible that we will see the end of human clinical trials in our lifetime. Today we are moving to the point where wearable tech is providing real-time information in drug trials. In the world of tomorrow, simulation modelling could theoretically test thousands of different drug compounds for humans in a matter of minutes. This will only happen if pharma continues to support tech research.

Wearable devices will be less wearable and more integrated into our bodies with devices implanted underneath the skin becoming likely. At this point, medical care will become far more efficient, and treatment plans could be administered instantly as soon as signs of a medical issue arise.

This will also lead to a more personal approach to medicine whereby a patient's individual genomes can be viewed and measured to provide the ultimate treatment plan not just for a group of patients suffering from a condition but for the individual. By doing this, doctors will know exactly what drugs and dosages will be most effective for each patient to ensure the optimum treatment plan is approved.

As for wearable tech, we can expect devices that impact the senses to be a pivotal part of treatment in the future. Both AR and VR tech will have a vital part to play in diagnosis and treatment in the future.

It is fair to say that thanks to the development of wearable tech and digital technologies there are even more incredible advances on the horizon for the health industry.