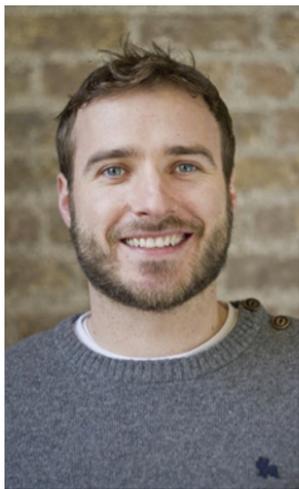


EHEALTH

End to end health monitoring now possible



Dr Robert Grant, PhD, reports back from the Connected Health Summit in Washington DC, and highlights the key terms and trends coming down the line in the world of healthcare and technology

20% of health is due to genetics, 5% the care we receive and the remaining 75% is up to the individual and their lifestyle choices. Healthcare needs to switch focus from reacting to illness, to encouraging wellness.

Jo Ann Jenkins, CEO AARP (American Association for Retired Persons)

For the past seven years, every November, global leaders working at the intersection of healthcare and technology gather in Washington DC to present and share the latest findings, challenges and trends at the Connected Health Summit (previously known as The mHealth Summit).

The Summit takes place in the impressive Gaylord National Resort and Convention Centre, which is situated a few miles outside Washington DC and overlooking the scenic Potomac River, and comes complete with 2000 guest rooms, 400,000 square feet of space, seven restaurants and a 19 story glass atrium. The conference demands such a grandiose setting as it is really several conferences rolled into one: the mHealth Summit, the Population Health Summit, the Global mHealth Forum and the Cyber Security Summit.

The common focus, of course, is how the proliferation of digitally connected devices can revolutionize how healthcare is delivered by extending access beyond the four walls of the hospital and shifting the focus of care to a more engaged patient population. The ever-increasing cost of healthcare, coupled with an ageing population with epidemic levels of chronic disease, means that finding solutions in technology is all the more pressing.

Representing RelateCare, an Irish-US connected health organisation that focuses on patient access and patient engagement, I attended the conference for the second year running and found it both enlightening and inspiring. A wide range of talks from leaders such as Susannah Fox, Chief Technology Officer of the U.S. Department of Health and Human Services (HHS) and Douglas Wood, Medical Director and the Center for Innovation at the Mayo Clinic ensured the information being shared was of the highest quality. While the expansive exhibit-hall allowed face to face interaction with some cutting edge technologies and platforms.

Here are some of the key terms and trends coming down the line in the world of healthcare and technology:

The Internet of Medical Things

This is a term adapted from the all-encompassing Internet of Things which is used to refer to the network of physical objects or “things” in everyday life that are embedded with electronics, software sensors, and connectivity allowing the objects to collect

and exchange data. The Internet of Medical Things (also known as the Internet of Health Things) then, is the network of connected or smart devices and objects that can be used specifically in the delivery of healthcare.

The obvious examples are smartphones, tablets and laptops. But there are also blood pressure and heart rate monitors, glucose monitors, hearing aids, asthma inhalers, thermometers, and specialised sensors placed in the living quarters of vulnerable patients to track the movement and well being of patients. It is also possible to connect pill bottles and medication dispensers that automatically monitor if the right medication is taken at the right time. More consumer-friendly devices such as smart scales, pedometers and fitness trackers can also be integrated



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into the system.

The idea here is that end-to-end health monitoring – even when outside of the hospital – is becoming more and more possible through the IoMT. The data can be fed back to a centralised platform and monitored by a health professional who can then reach out to the patient either through phone, video conferencing or a an actual visit, if necessary.

The immediate benefits from this come for elderly and chronic patients who do not require specialised acute care, but are need of constant monitoring and could stand to benefit greatly from a timely intervention. The IoMT can help reduce costly hospital readmissions and also get the patient more engaged in their healthcare as a part of everyday

life rather than something to think about only when they get sick.

The challenge for the IoMT – as with big data generally – is to be able to integrate all of this data into a centralised platform that can deliver meaningful recommendations back to the user or health professional. Security of the data that is transferred is also a major concern for the use of IoMT.

Speaking at the conference about IoMT, Dr James Mault, Chief Medical Officer for Qualcomm Life argued that The total global economic impact of the Internet of Things (IoT) by 2025 is forecasted to be \$6.2 trillion, with health care expected to contribute the largest single sector value of \$1.88 trillion.

Population Health

Population Health, obviously being the name of one of the smaller Summits is a key trend for the future of healthcare delivery, and one that is talked about by the HSE also. Pop health, as it is known, aims to improve the health of entire groups of human populations. It involves a move away from a focus on the individual as the unit of healthcare delivery and instead looks to the social, cultural, economic and environmental determinants of health in a specific population. These could include the level of access to care in certain communities, the living standard and levels of physical activity of a community, for example. Obviously to do this, requires gathering data through the use of technology on how certain sections of the population behave, so again, the use of technology is key in being able to accurately depict the health status of a specific population.

This would allow health systems to deliver care in a more efficient way by targeting interventions to those most in need. For example, by gathering data on specific populations, through the use of data analytics combined with medical devices, a patient population could be organised by level of risk. A Nurse Triage calling program could then be delivered to the patients based on risk, hence intervening before escalation was needed and hospital admission occurred. This could help avoid painful illness and also save money by avoiding hospital admissions.

Precision Medicine

Precision Medicine was mentioned again and again at the Summit this year. Sparked by



President Obama’s 2015 State of the Union address, where he stated his intention to fund a United States national “precision medicine initiative”. In the long-term, the Precision Medicine Initiative aims to build a comprehensive scientific knowledge base by creating a national network of scientists and embarking on a national study of one million Americans to expand understanding of health and disease. The Mission Statement of the Precision Medicine Initiative reads: “To enable a new era of medicine through research, technology, and policies that empower patients, researchers, and providers to work together toward development of individualized treatments.”

Precision medicine is essentially the tailoring of medical treatment to the individual characteristics of each patient so that preventive or therapeutic interventions can be focused on those who will benefit the most. It does not literally mean the creation of medication or treatments that are unique to a patient, but does aim to classify individuals into subpopulations that differ in their susceptibility to different disease, whether behavioural or genetic, so that care can be delivered in a more accurate and efficient way.

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This is a way of increasing the efficiency with which healthcare is delivered, while sparing the expense and possible side effects for those who will not. By incorporating newly available molecular and genetic informa-

tion, along with the huge amount of potential behavioural data we generate that can be captured digitally, it is possible to deliver care patients in a way that maximises its value.

Start up to watch: Care at Hand: Mobile platform to reduce readmissions. Speaker: Dr. Andrey Ostrovsky, CEO.

One of the more impressive pitches of the week came from a start up called Care At Hand. A mobile care coordination platform that aims to reduce readmissions through the use of a text messaging service that connects Nurses, care managers, home care workers and health coaches, and allows for centralised managing of the patients care journey. A major issue in the prevalence of readmissions is lack of communication between carers during a patient’s healthcare journey. This leads to missed medication and misunderstanding of discharge instructions. Care At Hand aims to create a smooth care transition by creating a centralised platform from which carers can communicate and care can be managed. It has already proven a 39.6% reduction in readmissions in one case study. ■

CONCLUSION:

The HIMSS Connected Health Summit is well worth attending for those interested in the future of healthcare, and how technology can bring solutions to the many problems we face. While a clear and obvious solution has still not emerged, the energy and dynamism present is encouraging. With many changes coming down the line in the Irish healthcare system, we should use this opportunity to integrate these kinds of solutions into how we deliver care in the 21st century.