



## DIGITAL HEALTH

# Creating a patient-centric health system

Connected health has been one of the most talked-about concepts in healthcare and technology circles of late. Touted as a panacea to our over-burdened and under-funded healthcare system, it has spawned a multitude of conferences, startups, research programs and international organisations.

## So what exactly is it, and why does it matter?

Connected Health, at its most basic, refers to a vision for the improvement in how healthcare is delivered through the use of various digital and communication technologies. Also referred to by terms such as Digital Health, eHealth, mHealth, Telecare, Telehealth and Telemedicine, Connected Health aims to use existing technologies and the ubiquitous connectivity of the internet to integrate health information, coordinate the delivery of healthcare and improve the quality and reach of care.

The driving motivation is to deliver healthcare in a more efficient way, while vastly improving access for patients by overcoming the traditional barriers of space and time that once kept patients removed from care. Joe Kvedar (Founder and Director of the Centre for Connected Health, Boston Mass. 2007) sums it up this way: "Connected Health is the use of messaging and monitoring technologies to bring care to where the patient is, when the patient needs it."

Notice the emphasis on placing the patient at the centre of care. By equipping patients with the tools and knowledge to self-monitor and communicate with carers remotely, the patient is empowered to become responsible for their own health. No longer will it be necessary for patients to travel to physical buildings, or to communicate face-to-face with doctors, for certain consultations or queries. The traditional provider-centric method of delivery will evolve to a patient-centric system, facilitated by the



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A solution for healthcare systems in crisis

integrated use of technology. Connected Health also applies across the care continuum: with an emphasis on prevention and the pro-active management by patients of their health.

## Healthcare systems in crisis

The levels of hope and optimism surrounding connected health are understandable when one looks at the worrying trends facing healthcare systems around the world – Ireland included – in the coming decades. A combination of rising costs, an ageing population, increases in chronic disease levels and ever-increasing demand, are converging to cause a fear for the sustainability of systems in the future.

As people age, co-morbidities become more common, treatment situations tend to get more complex and hence care becomes more expensive. These categories account for the vast majority of healthcare spending – over 80 per cent – so our healthcare system is facing a serious challenge if it is to cope in the coming decades.

Connected Health solutions are seen as a way to mitigate the coming crisis by redesigning the healthcare system so it can handle the increasing demand, while also improving the level of care delivered.

An elderly patient, suffering with two or more chronic diseases, say diabetes and hypertension, could be equipped with a user-friendly remote monitoring device to continuously track

glucose levels and heart rate; this information could be automatically relayed back to a carer or monitored by a third-party Nurse triage service; the patient is contacted if certain red-flags are raised. This call could happen over the phone or video-conferencing, and could be used to remind the patient about medication adherence, and schedule any necessary appointments with the relevant physician. Care delivered in this way allows the patient to stay in the comfort of their home, while always connected to clinical expertise. This also reduces the demand for beds in a hospital, thus reduce costs.

This kind of integrated care-delivery picture is heavily reliant on the availability of Electronic Health Records, another core part of the Connected Health vision. EHRs make connectivity possible by creating a single record of each patient's medical and health information that is owned by the patient, but can be shared, instantaneously with multiple doctors and carers. This allows, for

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example, the nurse-on-call service to give meaningful advice when they contact a patient, as they can access the patients' medical history, medications, and any other relevant information. It could allow for ePrescribing, and online appointment scheduling. It is essential to overcome the inherent fragmentary nature of healthcare.

Connected Health makes a lot of sense, in theory. Yet, even though many of the technologies required already exist, the digital revolution has still not revolutionised healthcare. Various other complex industries – banking and finance, air travel, retail, pharmaceuticals – have been

critically reliant on the use of digital technologies for decades, and have since made great advances in efficiency and customer satisfaction. Why hasn't it happened for healthcare, where, arguably, it is needed most?

## What are the barriers to the adoption of Connected Health?

Much of the explanation lies in the unique nature of the existing healthcare system. Connected Health solutions are inherently disruptive, and the high-risk and high-volume environment of healthcare makes implementing disruptive changes difficult. Trialling new organisational forms requires a certain comfort with uncertainty and with mistakes being made in transition. Healthcare is less able to afford such risks, and is less comfortable with uncertainty than other industries. To successfully adopt something like Electronic Medical Records or Remote Patient monitoring in Ireland would involve deep structural changes to how healthcare systems

of clinical evidence, issues surrounding data protection and privacy, and reimbursement models.

## Ireland and Connected Health

Overcoming these barriers will require leadership from the highest-levels and the involvement of all stakeholders from the earliest stages of development. Organisations like ARCH aim to do exactly this by bringing together clinicians, entrepreneurs, policy makers and academics to work together in understanding the needs of the healthcare system and how technology can respond to those needs.

The Irish health system is currently undergoing "the most fundamental reform of our health services in the history of the state" as outlined in the policy document Future Health – A Strategic Framework for Reform of the Health Service 2012-2015. This will see the country moving towards a Universal Healthcare model based on a money-follows-the-patient

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