

## A definition of Digital Health

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## **A definition of Digital Health**

**Ciarán Morrison**

When discussing any of subject matter it is always important to have a clear message. This can change depending on which individual or organisation you are interacting with. In this post, I want to discuss what the term digital health means and showcase some of the concepts it encompasses. To begin with the Canadian Health Infoway defines digital health as the use of information technology/electronic communication tools, services and processes to deliver health care services, while the Australian government states that it is simply electronically connecting the points of care so health information can be shared securely. As both Australia and Canada are recognised leaders in digital health it is important to note their definitions.

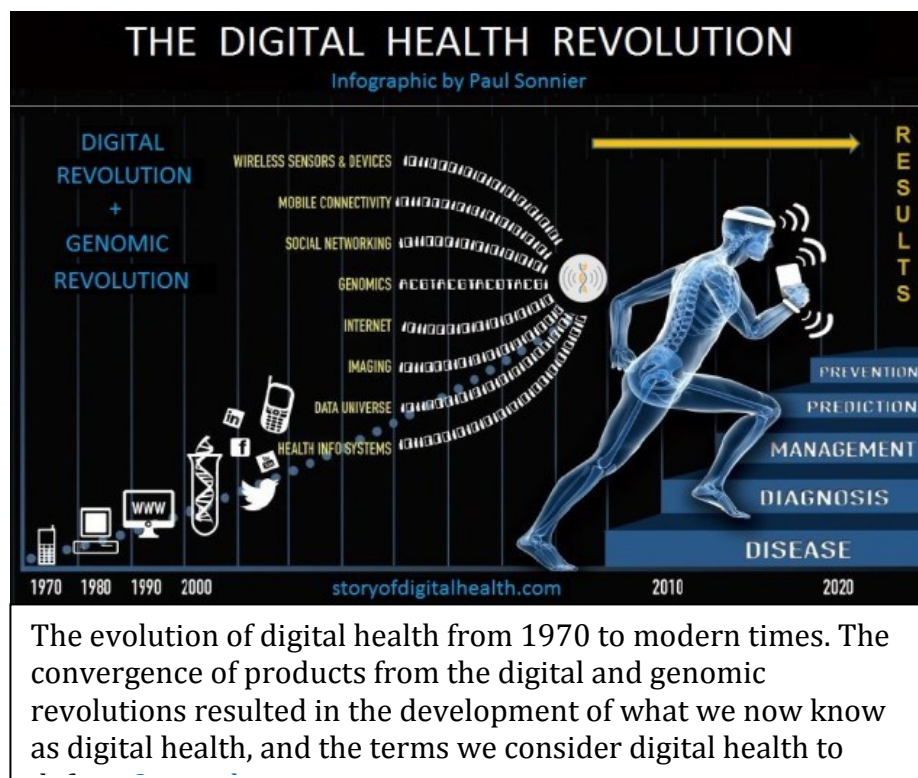
The most commonly used definition of the term could be said to be Paul Sonnier's description of digital health being "the convergence of the digital and genomic revolutions within health, healthcare, living, and society". Whilst this is a more commonly used definition, the Canadian Health Infoway's definition accurately depicts the current point in which digital health exists. The genomic convergence proposed in Sonnier's definition would appear to have been premature, as there is still little in the way of genome based health interventions. As digital and genomic advances continue we will hopefully arrive at a point in which genomic convergence within health, healthcare, living and society, re-enters the digital health definition.

The applications of Digital Health consist of certain essential elements such as wireless devices, hardware and software sensors, microprocessors and integrated circuits, the internet, social networking mobile and body area networks, health IT, genomics and personal genetic information. Because of the varied nature of these elements, digital health can be seen as an umbrella term for a multitude of fields, including eHealth, mHealth, telehealth and telemedicine, precision and personalised medicine. All of these involve the integration of various technologies and/or electronic services into the healthcare process.

eHealth describes the utilisation of medical informatics that manages and delivers health services and information using the internet and associated technologies. mHealth refers to mobile health, which involves the use of emerging and existing mobile communications and network technologies within health services. Telehealth and telemedicine share similarities with mHealth as they describe the provision of healthcare to patients in remote locations using telecommunications technologies, but it is important to remember that both analogue and digital technologies fall under the guise of

telehealth and telemedicine. Precision and personalised medicine refer to the customisation of a person's healthcare using various technologies and/or services to facilitate the process. Precision and personalised medicine mirror both the drive for citizen centred services across health and care, and the consumer climate out with health and care, where the personalised experience has become the norm (i.e. amazon, google etc.). This combined with the fact that fitness and wellbeing are at the forefront of consumer health products/services, is all pushing digital health to become the mechanism by which health and care will catch up with the personal experience trend.

The terms above exist amongst a larger group of terms that can be functions of digital health. Figure 1 below helps us visualise how digital health has emerged and where it is headed. This post hopes to more clearly define the focal point between the integration of the genomic and digital revolutions and its outputs.



The list of terms that could fall under the scope of digital health is vast and the majority of share certain aspects and tend to interlock with each other. Because of this the exact definition of digital health is seemingly in flux. As the terminology used for technology integrated health and care services is complex, truly defining digital health thoroughly requires much more review and analysis. But if we accept that the terms listed previously fall under the umbrella of digital health, then we can begin to understand digital health more clearly. Currently digital health is the precipice of the digital revolution, and the integration of digital technologies, devices, and services into the healthcare process to deliver care for patients, to and from any location, whilst securely sharing and allowing access to relevant health data for them, their carer's and health care providers. It is important to note that this a field of healthcare whose function should not be seen as an optional tool for healthcare practitioners and patients, but as part of the healthcare process and should be used in an end-to-end care plan for every citizen. Its implementation requires expertise from multiple fields to come together to create a culture in which digital health is fully integrated into every day health and social care, from education and training right through to practice. This definition is a work in progress, but as we know digital health is a work in progress, but it is important to build upon a steady structure, so using this definition we can move forward with a bit more clarity than before. Hopefully this post has been of interest, if not useful (hopefully its both). Keep an eye on this space for the next post from the DHI team.