# EDITORIAL

## Here We Go Again – 'Digital Health'

The Journal of the International Society for Telemedicine and eHealth (JISfTeH) continues to grow and mature in format, content, and process. The format of the journal has changed modestly, as will be seen in the first articles published this year. Process is also changing. Each paper now has an associated and specific DOI number, and authors' ORCID (Open Researcher and Contributor ID) are displayed. References include DOI (digital object identifier) or PMID (PubMed ID) numbers or web links when available and copyright and licensing details are provided within each paper. Efforts towards indexing continue. Finally, we are beginning the process of reviewing, renewing, and raising numbers of our Editorial Board, something we will report on in the next few months.

As always, changes from past years encroach and threaten the future. Quite recently the term '*Digital Health*' came into our lexicon, and was even - very recently - being considered by our parent Society – The International Society for Telemedicine and eHealth (ISfTeH). This new term – *digital health* – seems to be rolling over existing terms – including eHealth. Why? Surely there must always be a good rationale for doing something – rather than just superficially looking 'hip', or hoping to have a better chance at gaining funding for something seemingly 'new'! So, what is '*digital health*' – an area of healthcare focused entirely on fingers and toes, or perhaps rectal examinations? Probably not – but let's first remind ourselves of what eHealth is.

We know what eHealth is.[1] Really, we do – if only people would pay attention. On their website in 2005, the World Health Organization (WHO) used a definition that was accurate and succinct: eHealth is: "the use of Information and Communication Technologies (ICT) for health". It is still on their website today.[2] Yet even within the WHO changes are afoot. Last year, at the 71st World Health Assembly, Member States agreed on Resolution WHA71.7. This was a resolution on '*digital health*', promoting the development and use of 'digital technologies in health' to achieve Universal Health Coverage and advance Sustainable Development Goals.

So, do we know what 'Digital Health' actually is? Is it truly different from eHealth? Are the terms synonymous? When did it become popular? Searching PubMed for the term 'Digital Health' in early January 2019 gave 1,207 results from 1990 (1 publication) to 2018 (398 publications). When first used in the 1990's, the term was applied to 'digital health sciences libraries'.[3,4] The 2000's saw publication rates between 0 and 5 per year, describing such sophisticated

approaches as delivery of '*digital health*' information by television.[5] The first year with more than 100 publications using this term was in just 2016, which is perhaps also when the confusion - and contradiction with eHealth - became marked.

The term 'digital' (as opposed to analog) simply refers to binary code or combinations of the digits 0 and 1, i.e. bits (binary digits), which in differing combinations and permutations are used to record and represent words and images. This is the basic tenet of computing – nothing more novel than that. Devices that process and use 'digital' information include personal computers, calculators, compact disc players, cellular telephones, communications satellites, and high-definition television sets. Sound familiar?

Looking at the WHO website, you would believe the terms eHealth and '*Digital Health*' are synonymous; the subsection 'eHealth activities across WHO' lists *Digital technologies* for noncommunicable diseases, *digital technologies* for sexual and reproductive health, and *digital health* in TB care and control![2]

Wikipedia, to which many might turn for a simple and definitive answer, begins to show that the reality may not be as clear as imagined. They define '*digital health*' as "the convergence of digital technologies with health, healthcare, living, and society to enhance the efficiency of healthcare delivery and make medicines more personalized and precise."[6] Kostkova defines *digital health* as the "use of information and communications technologies to improve human health, healthcare services, and wellness for individuals and across populations."[7] Alternatively, Hsu states "*Digital health* technology, and in particular, apps on smart phones, may provide a suitable vehicle for easy access to clinical processes".[8] Replacing '*digital health*' with eHealth would make these sentences distressingly familiar. Wikipedia goes on to state that the discipline of '*digital health*' involves the "use of information and communication technologies" intended to "help address the health problems and challenges faced by patients". And the WHO's definition of eHealth - oh yes - "use of information and communication technologies (ICT) for health"!

How about the Federal Drug Administration in the USA? In their Digital Health Innovation Action Plan they do not define '*digital health*'. However, on their website, they say "The broad scope of *digital health* includes categories such as mobile health (mHealth), health information technology

(IT), wearable devices, telehealth and telemedicine, and personalized medicine".[9] What was that WHO definition of eHealth?

In contrast, Mesko et al.[10] define '*digital health*' as *"the cultural transformation of how disruptive technologies that provide digital and objective data accessible to both caregivers and patients leads to an equal level doctor-patient relationship with shared decision-making and the democratization of care"*. Then there are other examples. In his book 'The Fourth Wave: Digital Health', Paul Sonnier defines digital health as "the convergence of the Digital and Genomic Revolutions with health, healthcare, living, and society".[11] Similarly, Dr. Eric Topol, a pioneer of the field of *Digital Health*, seems not to define but simply speak of the convergence of genomics, big data, and digital technology to provide personalised health care at lower cost. These are quite different perspectives, but begin to differentiate digital health from eHealth. *Digital Health* **IS** different from eHealth, but should not replace it; rather – because Digital Health clearly uses 'Information and Communication Technologies (ICT) for health' - it forms another component within the growing and complex Venn diagram of eHealth.

Should such umbrage be shown to the term 'digital health' – after all, 'eHealth' arose from a similar birth of everything 'e' around 20 years ago. Also, science progresses through paradigm shifts that create tension between stakeholders until one paradigm predominates. Furthermore, one could even argue that we have had '*digital health*' since the inception of the 'digital' computer! So perhaps not.

However, we – proponents of eHealth – should be concerned. Think of the confusion that STILL exists around the term eHealth, and associated terms like telehealth, telemedicine, m-health, etc. etc.. Despite the existence of endless glossaries and many publications WE have still not agreed upon a universal, standard definition of eHealth, and related terms. If WE do not, or cannot, agree, how on earth can others be expected to begin to truly and correctly understand and apply these terms and concepts. Yes, technology changes, and available applications with it – but the principles remain, and they can be embedded in globally agreed universal definitions. Let us not muddy the waters still further by bringing yet another term to the lexicon. Rather let us finally bring clarity to the field and at least agree on the term eHealth. As clearly, simply, and cleverly defined by the WHO so many years ago – "the use of Information and Communication Technologies (ICT) for health". This is still the best definition for eHealth.

Will we be sufficiently motivated to rise to such a challenge - globally agreed universal definitions?

If not …… here we go again …….

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# References

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