How Can eHealth Help Fix Broken Health Systems?

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Most healthcare systems are failing to reach or sustain their core values of solidarity and universal access. Many causes are identified, including demographics factors, soaring care costs, quantitative and qualitative insufficiencies of the healthcare workforce, increasing complexity and fragmentation. There is a widespread expectation that health IT will be a part of the solution to these problems. Most probably rightfully so, even though strong evidence remains scarce [1–3].

After decades of relative stagnation, where most of the developments and evaluation took place in a few pioneering healthcare institutions, we are now witnessing an implementation spree fueled by multiple ingredients: the political recognition of the failure of healthcare systems in terms of safety, quality, equitable access and sustainability, the expectation that the tools of the information society will bring benefits in health systems as they did in other domains, and, last but not least, significant public investments and related incentives, notably in the US and in other Western countries.

However, it is now well understood that rushed implementations of clinical information systems can be dangerous, and that human and organizational factors are key determinants, more so than technology itself, for achieving positive outcomes. As we move forwards on this fast track, it is therefore more important than ever to understand, evaluate and improve these factors, in the real-world settings of our complex healthcare systems. McMullen and colleagues [4] propose a pragmatic, anthropologically-based rapid assessment process (RAP) for evaluating clinical informatics interventions. Field tested in multiple and diverse care settings in the US, during three-day intense site visits by multidisciplinary teams, it produced feedback judged relevant by many healthcare professionals.

Even though, during the first decades of the field of healthcare informatics, efforts have mostly been focused on hospital clinical information systems, current challenges are shifting to outpatient care, primary care, prevention and wellness. In parallel, the center of gravity is moving from healthcare professionals to patients and individuals. Hospitals are indeed expensive and sometimes dangerous places to stay in. Streamlining the flow of patients so that they can be taken care of at the optimal level of the health system becomes a key challenge. This requires significant evolutions in the organization of health systems and their underlying information systems, and thus, significant risks and investments. Ideally, decision-makers should have access to a strong evidence base, or, at least, sound evaluations of existing projects, their impact on financial and clinical outcomes, and their lessons learned. Mäenpää and colleagues [5] report on the detailed evaluation of the health information exchange in a hospital district in Finland.

As healthcare information systems move closer to the patient and to the – still – healthy individual, borders get progressively blurred between care- and public health informatics tools. New ways of exploiting the data-rich environment that surrounds us emerge. As they become semantically-annotated, they become accessible to computerized intelligence, leading to more understandable information, and, eventually, to new knowledge. It therefore becomes tempting to make more use of the vast amount of clinical data that gets ac-
cumulated in clinical information systems, for optimizing the way care is delivered, for guiding public health policies, or for accelerating biomedical and pharmaceutical research, and eventually transforming it [6]. Holzer and colleagues [7] propose an IHE-based architecture that integrates the notion of secondary use of electronic health records data in the design of a health information exchange.

However, sharing private information between care professionals, across institutions, with public health officers, with university or industry researchers, and even across the legal boundaries of nations does generate legitimate worries about the protection of the privacy of both the citizen and the professionals involved. This hinders and, in some cases, stops, the deployment of large-scale eHealth networks. It is therefore essential that all the stakeholders understand the information systems they use and trust them, so that they can give their informed consent to the manipulation and sharing of personal, sensitive data. Rahmouni and colleagues [8] have developed a decision-support tool that lets professionals describe a scenario of data sharing and then produces a list of explicit legal requirements that actors of this scenario must comply with in terms of privacy.

Even if progress can still be expected from the development of integrated health-care information systems, it is likely that the traditional way of making use of IT-enabled tools has reached limits in their ability to provide new and disruptive solutions. The advent of mobile, collaborative, and consumer-driven computing opens promising perspectives. The development of the Web 3.0, combining the social tools of the Web 2.0 with higher degrees of personalization as well as intelligent, semantically-enabled tools, is expected to have a significant impact in the field of health and biomedical research. In order to make the best possible use of these eHealth tools and truly contribute to the improvement of the health of citizen, we must anticipate and get ready to cope with the unexpected usages and societal challenges they will enable, and be able to evaluate and document their real-world impacts.

### References


