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1

Introducing eHealth: Past, Present and Future

Diane Whitehouse, Petra Wilson and Magda Rosenmüller

Overview

As seen in the Preface, this book is intended as a tribute to the work of our friend and colleague, Professor Jean-Claude Healy. Jean-Claude Healy was at the origin of many of the early ideas in the 1990s and the first part of this decade, which formed the foundations of eHealth in Europe. Stimulating and building eHealth in Europe was one of his key objectives – indeed, a decade ago, “eHealth matters” were the opening words of the European eHealth Action Plan that stemmed directly from the work of Jean-Claude and his team (European Commission, 2004). Jean-Claude’s heritage, his vision, and the initial building blocks put in place through his and his colleagues’ work, is still manifest in Europe today, where eHealth continues to establish itself as a key enabler of safe and efficient health and care.

Yet today, there is still a lot to do to make eHealth a complete reality. Current European studies, as well as the European policy position, emphasise that the promise offered by information and communication technologies (ICT) in healthcare remains largely unfulfilled (European Commission, 2012). Policy planning is focused on identifying, addressing and overcoming such limitations as deployment, digital skills and literacy, international cooperation, interoperability, and research and development. Both here, and in terms of future challenges, the shift is very much towards the co-design and co-production of innovative initiatives (Goodwin, 2013; Loeffler et al., 2013). Technologies that remain challenges for the fields of health and care include big data, genetic developments, mobile health, and many more. The issues surrounding these topics are being looked at by the experts who write in this volume.

What is eHealth?

eHealth is an attractive, concise and easy-to-remember term for a very large, yet not always clear-cut, concept. Some see the term as occasionally ambiguous,

and others as an evolving definition. These shifts in terminology have been explored from the early years of the 21st century onwards (see, for example, Whitehouse and Duquenoy, 2009; 2010; George et al., 2012). Overall, the definition of eHealth moved first from an encyclopaedic listing of applications (European Commission, 2004) to a concentration on “the relationship and connections between the data shared among institutions and users” (European Commission, 2007, p. 10). In 2010 – as seen in the 2010–2011 policy work of the European Commission – it transitioned to an even more all-encompassing description, which focused largely on the challenges of healthcare supported by ICT rather than on eHealth itself (European Commission, 2011a, p. 3):

eHealth is the use of ICT in health products, services and processes combined with organisational change in healthcare systems and new skills, in order to improve health of citizens, efficiency and productivity in healthcare delivery, and the economic and social value of health. eHealth covers the interaction between patients and health-service providers, institution-to-institution transmission of data, or peer-to-peer communication between patients and/or health professionals.

The notion of eHealth comprises three separate elements. They are the three market-related notions of products, services and processes; the two organisational aspects of change management and personnel/user expertise; and the trio of expected outcomes – improved individual health status, healthcare delivery and the economic and social value of health.

For academics, discussion around the precise meaning of eHealth remains a matter of keen debate. This is occurring even at the very moment in time that increasing numbers of people are arguing that it is time to drop the “e” in eHealth (EHTEL, 2009; Ebels, 2012; Roberts, this volume). The trend is to concentrate on important challenges related to the two domains of both health and care. Indeed, as is evident in European policy documents, the focus is now on innovative healthcare for the 21st century, and personalising health and care in a wide variety of applied and scientific developments (European Commission, 2011a).

As co-editors, we decided to maintain the concept of eHealth for the scope, title and orientation of this volume. This was indeed the idea and the name that was adopted when much of the work described here began in the late 1990s. The notion of eHealth represents the book’s point of departure (see, for example, the two chapters by Rossing and Iakovidis). It is, however, a moot point that eHealth – as a concept – may be disappearing rapidly from people’s psyche and vocabularies. Indeed, the demise of the term may be considered to be an indicator that eHealth’s ambitions have been achieved. It is now a term that is well embedded in people’s consciousness. In the same way, the term eCommerce

is no longer in use because nearly all commercial enterprises – as part of their mode of doing business – use some element of that former expression.

eHealth has been regarded as encompassing many different forms of technology (European Commission, 2004; 2011a). In this book, several authors base their work around the term eHealth and its progress over time (examples include the chapters by Joan Dzenowagis; Ilias Iakovidis; Zoi Kolitsi and Michèle Thonnet; Niels Rossing; and Birgit Beger and Michael Wilks). Contemporarily, technologies supporting new forms of care such as integrated care and person-centred care are tackled by Nick Goodwin and Albert Alonso, and Dipak Kalra and his colleagues. Electronic health records are the core subject of Don Dettmer's chapter, but the implication for personal or individual records is also taken up in the papers by Mats Sundgren and Vanessa Díaz-Zuccarini and colleagues, as well as from the hospital viewpoint (Geissbühler and colleagues). Other authors are more oriented towards particular technologies – the Internet, web, social media and social networks are all evident in the chapters by Celia Boyer and also Denise Silber, whereas mobile health (mHealth) is covered by Patricia Mechael and her co-authors. Two specific domains in the field of informatics are handled here: medical informatics by Niels Rossing, and nursing informatics by Nick Hardiker.

Scope, aims and goals

The scope of this book is threefold. It aims to capture the current policy debates by putting them in their historical context, review the ways in which all the appropriate actors are involved in using ICT to ensure access to high-quality yet economic healthcare provision, and cover actual practice through a range of inputs, case studies and examples. It also considers patients' empowerment and participation. The book offers useful insights into how to tackle the challenges facing the healthcare systems of many regions and countries throughout the globe, even if its primary focus is on the European Union. Together, these approaches provide a rounded context for the environment in which eHealth is being developed and implemented. In this sense, the volume is an "umbrella" book, one which – although it stays with the big picture and offers a holistic overview of ICT use in healthcare systems – also mines in depth many important, and more detailed, topics.

The book brings together a series of chapters written by more than 30 leading experts in their respective eHealth fields. Among the authors are eminent health policy and eHealth leaders at international, European and national levels; leading business school faculty; corporate executives; well-known hospital executives and researchers; healthcare professional leaders; and prominent individuals in non-governmental organisations and civic society.

The book has three main messages. First, it enables readers to gain a better understanding of the uptake of ICT in healthcare. It uses examples that show

how patients, physicians and healthcare providers all collaborate better in an improved and more efficient healthcare system as a result of using eHealth. It therefore covers a considerable number of good eHealth practices while it does not forget by any means the challenges that remain to the use of technologies in healthcare. Second, the book reflects its contemporary position between a great deal of work having been achieved while substantial work on transformation still needs to be done. The book's historical overview shows how healthcare has changed due to the introduction of ICT. It also indicates how healthcare will change in the future, and how these alterations can be managed to assure high value for patients, professionals and the system as a whole. It particularly points to what can be learned positively from the experiences of others. Third, the book illustrates how the work of healthcare professionals may change, and how its readers, as diverse stakeholders, might involve themselves pro-actively in that transition process by contributing to the developments that are about to happen.

Healthcare systems, and the ways in which they can be supported by state-of-the-art and future technologies, are very much on a journey of transition. Indeed, the transition will be ongoing: as one cycle of deployment and implementation reaches maturity, the next is forthcoming. Electronic health records – once considered revolutionary in their implications – are moving into far more common use, combined with the availability of mobile telephony (mHealth); the exploration of genetic data to predict and prevent disease and hereditary health conditions is becoming increasingly usual; and the notion of human beings wearing “chips in the[ir] head[s]” – to cite one of Jean-Claude Healy's favourite examples – is an organic continuation of the contemporary growth in the use of sensors, radio-frequency identifiers and networks (<http://futuremed2020.com>) (eHealth Task Force, 2011).

This book does not pretend, by any means, to cover the complete width and variety of practices in the field of eHealth that are present and upcoming. eHealth is such a comprehensive field that it would be impossible to cover all its aspects in such a modest volume. For example, to name but three, the challenges posed by interoperability, medical devices and procurement have not been examined here in any great detail. For this reason, this volume has a simple structure, which reflects its main themes: policies, people and practices. The logic behind each of these sections is outlined here by the three contributing editors.

Politics: Policies and Institutions

Examining critical success factors for the transformation of any key issues in society requires the right political climate, institutions and leaders who can help formulate and make policy. Policies provide both the framework and

the drivers for progress in combination with the work of the people on the ground, who put the policies into practice. Healthcare supported by ICT is no exception to this general rule. eHealth has been driven forward by energetic people possessing insight and vision, by solid policy positions and documents, and by people who have committed to actions that have coalesced around these political directions.

Five chapters form the core of this first section of the book. The first chapter in this section is written by Niels Rossing, who has evoked his personal memories of the early years of what became eHealth in Europe, and specifically in the European Commission. Niels was the first individual tasked with heading up this domain, and he was also the direct predecessor of Jean-Claude Healy. Niels highlights the way in which a number of substantial elements in the health field have not changed dramatically over the past 25 years. Today, as in 1988, it is still anticipated that eHealth will improve and facilitate healthcare, and develop sustainable products and services through a close collaboration between academia and industry. Yet, in 2013, in addition to policy-makers, it is very much the citizens and patients themselves who are getting engaged and realising this potential!

Ilias Iakovidis, who was also an early colleague of Jean-Claude Healy, takes up the story of eHealth in Europe as from 1990. Over the last quarter century, the European Commission has contributed to the emergence of several generations of technologies in diverse domains of healthcare. Much of this work has been accompanied by the development of relevant policy instruments (from research programmes on diverse areas of eHealth research and innovation) and by noteworthy deployments in products, goods and services. This progress puts a number of European regions and Member States at the leading edge of societal and technological innovation. Many healthcare benefits are already, and will likely continue to be, the result.

From governments to governance: Joan Dzenowagis explores how this paradigm has shaped eHealth, and charts some of its key aspects worldwide. She traces the history of the path taken by eHealth inside the World Health Organization, through its various committees, task forces and assemblies: such was the organisation's determination to facilitate the use of technologies to improve healthcare standards worldwide. The expected results continue to be greater access to healthcare and improvements in its quality, effectiveness and efficiency. Jean-Claude Healy made a unique contribution to this initiative. Joan's is a very personal view of someone who worked closely and intensely with Jean-Claude Healy. Its wording shows the degree of passion and commitment to eHealth that this very unusual individual generated in his colleagues and the surrounding community. This willingness to take bold steps forward lays out an inspiring message for many other groups of stakeholders working in contemporary health-related fields.

Governance in eHealth has previously been a considerable challenge, argue Zoi Kolitsi and Michèle Thonnet. Yet, in recent times, there is a growing clarity about how to govern this field. Built over the course of years, increased cooperative work on ICT related to healthcare is taking place among the European Member States and eHealth stakeholders. New proposals for eHealth for the 2013–2020 timeframe are now on the agenda: new institutions have been created to service and support these next stages in eHealth policy development and deployment. More are on the agenda. Like many other authors in the book, these two women take both a historical and a future-oriented view of eHealth.

Shaping eHealth through legal actions is the concern of Petra Wilson. Her expertise in the legal aspects of eHealth dates from the late 1990s, when she worked in the European Commission to advance a sound policy understanding of the ethical and legal aspects of eHealth. Her chapter offers an overview of the way in which various court cases, that have alternatively challenged or supported the use of the Internet for health purposes, have had an influence in Europe. Eventually there has been a shift towards a Directive, which supports cross-border access of patients to healthcare throughout the Union (European Commission, 2011b). Petra explores the ways in which legal frameworks could facilitate a more expansive framework for healthcare-enhancing technologies.

The politics and institutions portrayed in this section of the volume are among the most influential in the healthcare field both globally and in terms of the European continent. They include the World Health Organization, the European Commission, the Council and Parliament and the relevant ministries of a set of the European Member States. Also included is an overview of legislation at levels that cover the European continent and, in many cases – most relevantly for the health sector – the individual nations. It is these countries that, ultimately, possess the mandate for tackling healthcare. They do not, however, always carry the responsibility for policy-making in the many other areas of legislation – such as data protection; security; mobile telephony and medical equipment – that affect directly the technologies used to provide and support healthcare.

Many of the policies described in this first section of the book – entitled *Politics: Policies and Institutions* – are directly derived from the era in which Jean-Claude Healy started to work so energetically in the field of eHealth. Many of the authors who write about European and world politics and policies knew him directly and worked with him closely. For this reason, in several of the chapters there are reminiscences of times past and the important role that Jean-Claude played in several major historical events. Overall, however, the texts in this section of the book bring us up-to-date while also covering the historical context and, at the same time, they indicate exciting potential directions for the broader future.

Last but not least, this section of the book provides a story about personal and professional collaboration, not simply institutional development. It involves deep insights into people and the way in which they work together. It highlights the point that the potential of eHealth, and real value in healthcare, can be created with enthusiastic and motivated people, a concept Jean-Claude instilled in everyone he met. By bringing groups of individuals into the foreground of policy-making, it serves as a prelude to the next section of the book, with its more targeted focus on *People: Professionals, Patients and Consumers*.

People: Professionals, Patients and Consumers

The second section of the book, which comprises six chapters, deals in broad terms with the people who form the infinitely rich network of stakeholders who collaborate together on eHealth.

Working together, a doctor and a lawyer, Birgit Beger and Michael Wilks outline the increasingly important role that eHealth plays in healthcare for health professionals who are attempting to put their work into practice. At the same time, they explain the challenges that eHealth can continue to present, particularly for physicians. They suggest remedies for various shortcomings in eHealth developments, including better planning with more secure funding and an improved representation and participation of all stakeholders in the development process. The authors show considerable insight, from the perspective of physicians, into the barriers to the development and deployment of eHealth solutions, and they provide guidance about how these can be addressed.

Informatics is the term most used in the following two chapters that also deal with other health-related professionals. Nurses are working actively to absorb the positive benefits that eHealth can provide. Beginning with the experience of the world-renowned 19th century nurse, Florence Nightingale, Nick Hardiker describes the growing importance of informatics to the nursing profession. eHealth continues to be incorporated actively into the fabric of nursing through education, training and professional development. The early take-up of informatics in nursing led to a recognition of the need to define a variety of standards, especially for clinical terminology. Consequently, the nursing profession has played a key role in the creation of national and international special interest groups to support the standardisation of terminology and the spread of information about how useful a role ICT can play in the field of healthcare.

Jean Roberts then looks at the development of the field of health informatics. She examines the widely varied professional backgrounds – from clinician to specialist in information technology (IT) – that health informaticians have and the complex settings in which they work. The challenge of establishing

the foundations of a health informatics profession is further complicated by such phenomena as direct interaction with members of an increasingly eHealth-literate public, and the growth in mobile health technologies. Jean points to the current work being done by the United Kingdom's Council for Health Informatics Professions to devise continuing professional development programmes. These maintain the core competencies and skills demanded by health-related strategy, management, research and technology.

As people at large become more and more familiar with easy-to-use technologies that support their daily lives, it can be expected that patients – and ordinary people too – will increasingly view technology as just one means to monitor their health status. Diane Whitehouse and Magda Rosenmöller explore how patients will both use easier and smaller eHealth technologies, the “e” – electronics – that support health. They recognise that these technologies will become more and more intimate, and closer to people's bodies, minds and brains. Greater numbers of patients and people will become the real users of eHealth and provide the driving force for the future of eHealth.

The focus therefore turns, in the latter half of this section, towards the kinds of technologies with which patients, people, and consumers are becoming more and more familiar – the Internet, social media and mobile telephony. Celia Boyer describes how the diffusion of healthcare information across the Internet has resulted in benefits for a large number of people. She points out that these conclusions assume that the health-related information provided is both appropriate and of the highest quality, and that users can be certain that this is the case. Historically, Celia traces the establishment and adoption of the Health on the Net Foundation (HON), and its code that signals the trustworthiness of online healthcare information. She also outlines how HON will continue to evolve to accommodate future developments on the Internet.

Denise Silber presents the viewpoint of an enthusiastic proponent of Web 2.0 and social media. She sees them as the tools that present the best opportunity for ICT to offer broad and effective healthcare information and support to the largest number of people. Web sites and blogs deal with specific health conditions and feature user-generated content. Social media sites display a variety of health-themed forums: the resulting communities define themselves as, for example, patient-only, professional-only or a mixture of the two. It is therefore important to facilitate the responsible dissemination and exchange of information, and to provide platforms for innovation whether the users are patients or clinicians. Denise's personal memories of the role that Jean-Claude Healy played in the eHealth field are timely reminders of how much of a shift has taken place in the balance of relations between patients and clinicians since this work began in the mid-1990s. Habits and practices in the fields of health and eHealth have indeed changed substantially, and are continuing to do so.

Practices: New ways of working and other challenges

eHealth is driven forward by policies developed by people with real vision and insight; these stakeholders have important and meaningful roles to play. At the same time as they gaze forward into the future, they undergo real changes in their day-to-day experiences in many spheres of the society and economy around the globe. This section of the book concentrates on organisational, professional and work practices. It looks not only at how such principles and practices are being modified today, but also how more far-sighted technologies – those used in drug discovery and development, for example, and in personalised medicine – will change in the future. Eight chapters examine several different aspects of practice, and the variety of practices that are posed to individuals and institutions working in the eHealth field.

In the first chapter of this section of the book, Nick Goodwin and Albert Alonso make it clear that co-ordinated – integrated – care is an important component in any vision of sustainable, effective healthcare. After describing the considerable challenges in modelling such a complex entity, they outline the characteristics of an effective integrated care service. They then describe how ICT can support integrated care by improving communication, enabling information and knowledge to be shared, and supporting the self-management of long-term conditions. They suggest that the wider adoption of integrated care and its associated technologies requires a larger number of example cases than exists today – which have been comprehensively evaluated and judged successful. There is every reason to believe that the integrated care landscape is changing so as to promote increased change and innovation – given, for example, the launch of a large-scale pilot in this field in March 2013 (http://ec.europa.eu/information_society/apps/projects/factsheet/index.cfm?project_ref=325158).

The importance of communication and data sharing is echoed in the second chapter of this section, where Dipak Kalra and his colleagues look at person-centred care. The authors discuss the increasing level of involvement of individuals in the management of their own health, particularly in the context of chronic diseases. They examine how ICT can support the effective functioning of the Chronic Care Model to create an effective health management programme. Furthermore, ICT can accommodate the transition from self-care to integrated care, and maintain the expertise and involvement of health and social care professionals. Using a future-oriented scenario, the authors identify a set of key enablers for person-centred care, and they broaden the concept into one that engages patients as co-producers of their health. In conclusion, the chapter addresses the challenges that abound in scaling up those ICT solutions that support person-centred care.

Hospitals too are key institutions for healthcare. The use of eHealth both within and among hospitals, in conjunction with the wider health and care

communities, is crucial. A leading academic and two health sector executives have co-authored the third chapter in this section of the book. They examine IT use in two specific hospitals: the Hospital Clínic, Barcelona, and the Hôpitaux Universitaires, Geneva. They provide examples of how highly integrated IT systems can be introduced into such institutions. These kinds of establishments, as well as healthcare providers, provide critical leadership in the introduction, implementation and expansion of eHealth. To achieve the full potential of IT, sound IT governance is paramount. Whereas this chapter examines practice at the level of hospitals, managing eHealth can also be a regional, national and international exercise.

Comparing and contrasting international systems is always a fascinating exercise. Electronic health record systems have now shifted in the United States of America to become a central pillar in national health policy, argues Don Detmer. His chapter examines how this transition in policy, technology and practice has emerged, and he reviews a number of health domains including care, research and education. He discusses future prospects and challenges, and even how to coordinate these efforts around the world. It is for this reason that current European–North American collaboration (USHHS–EC, 2010) is to be welcomed, a notion that has been emphasised in another setting in this volume by Jean Roberts.

eHealth is of increasing importance to the pharmaceutical industry: it offers considerable opportunities for the enhancement of clinical research. In Chapter 18, Mats Sundgren describes the way in which networked electronic health records can facilitate tremendous progress by various research platforms, especially in the field of drug discovery and drug development. Thanks to IT, by making such detailed information as phenotypes and individual or group genetic data available, medical treatments are becoming ever more personalised.

The fifth chapter of this section concentrates on the role that mobile technologies play in health. Patricia Mechael and colleagues are from the mHealth Alliance, which is hosted by the United Nations Foundation. They write of how mobile telephony is reshaping health, especially in terms of the possibilities that mHealth has to offer the developing world. Indeed, mHealth is particularly suited to strengthening the communication and information opportunities offered by eHealth. Its communications, mobility and widespread coverage ensure it can affect the health experiences of many members of the general population. Mechael et al. offer numerous examples of how mobile technologies operate in contemporary societies, with their focus on the emerging economies. They then recommend how to realise the full potential of mHealth.

For over ten years now, the personalisation, prediction and optimisation of treatments have been a major preoccupation in the European health field, as

Vanessa Díaz-Zuccarini and colleagues discuss. The focus has been especially on the side of clinical research. The European Virtual Physiological Human (VPH) initiative has proven to be a considerable success since its inspired early days. Today, the Digital Patient initiative is just one example of the contribution made by VPH to individualised, patient-centred medicine. Developed by researchers – in conjunction with a much wider range of stakeholders – the Digital Patient roadmap details how progress in physiological modelling could improve healthcare and lifestyle interventions and their quality and accuracy. It is now possible to foresee how advanced technologies can offer tremendous improvements to patients' health and the effectiveness of clinical teams.

Until a decade ago, evaluations of eHealth implementations were restricted in their handling of economic or financial issues: few assessments, for example, included either cost data or examined costs or benefits over time. However, since the launch of the first eHealth Impact (eHI) study in 2002, more than 50 economic evaluations on both good and weak economic performances have used the methodology that was the result of that study. Not only have these evaluations provided important and meaningful data, they also identify clearly which risks it is important to bear in mind when trying to make realistic deployment decisions in the eHealth field. Tom Jones identifies how the concept of socio-economic return now informs many decisions on eHealth investment in quality, access and efficiency, and is likely to expand its influence even further. Having such an important and sobering tool as eHI is particularly useful in a period of continuing socio-economic challenges. It is able to support decision-making about which technologies to commission, how to procure eHealth, with which stakeholders to work and how long it will take to achieve sensible expectations.

At the same time as one looks forward, it is always important therefore to maintain a steady realism about the present and the near future. A decade ago, mentioning money in the same breath as healthcare was often considered quasi-sacrilegious: yet, Jean-Claude Healy was not afraid of stepping into such contested ground. For this reason, the focus of the book's final chapter is on not only access to and quality of health and care, but also the practical axis of its efficiency and effectiveness: its economy.

The eHealth landscape is fast moving, at the same time as it faces certain barriers. At least two chapters in this final section of the book on practices are remarkably complementary insofar as they examine fields – drug discovery/development and the Virtual Physiological Human (VPH) – which have been under development for at least a decade, and yet which continue to promise great hopes for the longer-term future.

Taking an extensive timeline into the future has always been a wise move. In the period of 2003–2005, Jean-Claude Healy encouraged much crystal ball-gazing among Europeans, in the fields of research, telecommunications

policy and health-related deployment. He hypothesised, at this early stage of reflection, that many eHealth and health-related innovations took on average some 17 years to come to fruition. It is, therefore, both fascinating and fun to examine certain longer-term visions and trends of the future. A quick foresight-oriented scan is taken of some recent insights into where the next stages of health and care may head.

Looking towards the future

It is important to offer a flavour of what possible futures might affect the health and social care systems of Europe whether we are talking about 2020, 2030, or indeed 2050. Certainly, it is important to look beyond 2020 (<http://ec.europa.eu/digital-agenda/en/digital-futures>). For this, it is important to draw on views emerging not only from Europe but also worldwide.

Today, many forms of academic and policy literature about healthcare focus on healthcare systems and organisations rather than on their underpinning technologies. In the mid-2000s, Michael E. Porter and Elizabeth Teisberg (2006), and Clayton Christensen and colleagues (2009), concentrated on the notion of the United States' (US) healthcare system in crisis and the need for major reform. These views were clearly being developed in parallel to expectations of policy- and regulation-related reform.

The first of these two books, *Redefining Health Care*, outlined a framework for redefining healthcare competition based on patient value. It offered a number of recommendations for hospitals, doctors, health plans, employers and policy-makers. To quote its publishing house, it suggested a “move to a positive-sum competition that will unleash stunning improvements in quality and efficiency.” The second book built on Christensen's earlier groundbreaking insights into the nature of disruptive innovation (1997). Yet it was oriented, more specifically, towards patient works and personalised care combined with new business models and the reform of health insurance and other regulations. Somewhat more soberly, in 2012, Henry Mintzberg (Mintzberg, 2012) was keen to dispel many of the myths that surround healthcare and its management. He particularly critiqued the notions of “detached” social engineering, heroic leadership and healthcare as a business. Rather, he was inclined to “reframe” the healthcare sector. As a result, he explored approaches related to distributed management, bottom-up strategies, collaboration, care and a holistic, systems-based approach. Here, the message is clearly about process with a social orientation. Overall, Mintzberg made a compelling case for both healthcare institutions and authorities to “make their case for scale on social grounds” (2012, p. 7).

In the policy field, many countries and their institutions have examined what the future may bring in the health and care domains. At least among

Organisation for Economic Co-operation and Development (OECD) countries, given their socio-economic similarities, many of their analyses share resemblances. The focus is on changing demographics, particularly in relation to older adults; difficult economic circumstances; and increasing autonomy of patients combined with the availability of easy-to-use technologies. Even in countries which still have the experience of expanding youthful demographics, such as in Africa or Latin America, the three latter factors remain startlingly similar.

Just two of the more well-publicised examples are Australia and the United Kingdom, specifically England. In the first case, Australia concentrated on care for older adults; mental health; performance standards; primary, secondary and tertiary care; prevention; reform; stakeholder engagement; and the workforce. In the second case, England's National Health Service (NHS) Future Forum was set up as an independent group to "pause, listen and reflect" on the content of the country's Health and Social Care Bill, and to make a series of recommendations on the future modernisation of the country's health system (Field, 2011). The four key themes that the report highlights are all important: choice and competition, patient involvement and public accountability, clinical advice and leadership, and education and training (the report did not, however, focus on IT specifically). The King's Fund and Nuffield Trust came together to respond to the work of the forum. With their commitment well and truly anchored to the notion of integrated care, Goodwin and colleagues (2012) avow that: "The prize to be won is a health and social care system centred on the needs of individuals and patients and delivering the best possible outcomes." As we have seen earlier, this degree of insight into health and care over the next five-to-ten-year period, and beyond, is crucial also for the European Union and its individual Member States.

Some researchers and policy-makers take a very specifically technological orientation. Eric Topol is just one example. A top US cardiologist, he claims in his latest book (2012) that, as yet, "the digital world has hardly pierced the medical cocoon". He cites examples for the potential of transformative technologies that include wireless health devices, miniaturisation, social networks and cloud computing, the personalisation of healthcare with its focus on the importance of genomics: all of which can help head towards "precision therapy". As one of America's eminent voices on the digital revolution in medicine, and a leading light in several medical institutes, he argues that although important innovations are close at hand, for radical transformations to take place in the democratisation of medical care this has to be demanded by consumers.

What is clear, above all, from these trends and from this volume of insightful essays, is that people and technology are going to continue to operate together in their own unique format, each influencing the other. Health and care, alongside many other spheres of social engagement, are influenced by this

continuing degree of interaction. The 2014 focus on collaboration, co-operation, co-design and co-production is likely to set the scene for health and care in the future. As health and care move towards greater degrees of integration, we can expect that policies, people and practices will each in their own right – and together in combination – influence, via eHealth, the quality, accessibility and the economy of health and health systems.

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