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Contents

List of Figures vii

List of Tables viii

List of Boxes ix

Foreword x
Robert Madelin

Preface xii
Claire-Marie Healy and Petra Wilson

Acknowledgements xv

Notes on Contributors xvi

1 Introducing eHealth: Past, Present and Future 1
Diane Whitehouse, Petra Wilson and Magdalene Rosenmöller

Part I Politics – Policy and Institutions

2 On the Creation of AIM and Its First Six Years 19
Niels Rossing

3 European eHealth Agenda, 1990–2010 26
Ilias Iakovidis

4 From Governments to Governance: An Emerging Paradigm in eHealth 37
Joan Dzenowagis

5 New Directions in eHealth Governance in Europe 50
Zoi Kolitsi and Michèle Thonnet

6 The Emergence of EU Law and Policy on eHealth 61
Petra Wilson

Part II People – Professionals, Patients and Consumers

7 Physicians' Perspectives on eHealth 77
Birgit Beger and Michael Wilks

8 Nursing's Pivotal Role in eHealth: A Brief, Selective History 95
Nicholas R. Hardiker

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Copyrighted material – 9781137379429

9 The Emerging Role of the Health Informatician as a Key Player on eHealth 106
Jean Roberts

10 eHealth for Patient-Driven Healthcare 120
Diane Whitehouse and Magda Rosenmöller

11 Dynamic Quality Control for a Changing Internet 131
Célia Boyer and Mayoni Ranasinghe

12 Social Networks for Health: A Personal Snapshot 148
Denise Silber

Part III Practice – New Ways of Working and Other Challenges

13 The Role of eHealth in Supporting Care Coordination 161
Nick Goodwin and Albert Alonso

14 The eHealth Contribution to Person-Centred Care 174
Dipak Kalra, Jörg Artmann, Veli Stroetmann and Niels Boye

15 HIT: The Leadership Role of Hospitals 190
Antoine Geissbühler, Josep M. Piqué and Magdalene Rosenmöller

16 Recent US Experience with Health ICT 202
Don Eugene Detmer

17 Reshaping Health in a World of Mobile Phones 215
Patricia Mechael, Ada Kwan, Avrille Hanzel and Chelsea Hedquist

18 eHealth in Drug Discovery and Disease Research 230
Mats Sundgren

19 The European Virtual Physiological Human Initiative 244
Vanessa Díaz-Zuccarini, Rainer Thiel and Veli Stroetmann

20 Making the Economic Case for eHealth 259
Tom Jones

Index 275

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1
Introducing eHealth: Past, Present and Future

Diane Whitehouse, Petra Wilson and Magda Rosenmöller

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,

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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

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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

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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

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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.

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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.

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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

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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.

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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

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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

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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

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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

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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

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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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Index

Aaker, Jennifer, 154
acceptance, 33
accountability, 218
Accountability and Affordability Act, 206
accreditation, 59
administrative data, 81
Advanced Informatics in Medicine (AIM), 19–25
  community, 23
  European Commission and, 20–1
  introduction to, 19
  overview of, 21–2
  programme organisation, 22
Advanced Research Projects Agency Network (ARPANET), 131
ageing population, 13, 161, 177, 190, 231
AIM, *see* Advanced Informatics in Medicine (AIM)
Alonso, Albert, 9, 161
ambient assisted living, 116, 165
ambulatory medicine, 195
American Board of Preventive Medicine, 209
American College of Surgeons, 207
American Medical Association, 205
American Medical Informatics Association, 206–7, 209, 210
Andreessen, Marc, 131
Annan, Kofi, 38
anti-counterfeit drug services, 218, 220
apps, 70–1, 116–17, 134–6
assistive (adaptive) technology, 116, 165
Australia, 13, 166
authentication, 82, 88
autonomous patients, 13, 134–5, 174
avatars, 136–8, 185

Babbage, Charles, 95
Beger, Birgit, 7
behavior change, 219
benefits, 262, 266–7
big data, 46, 208
bioinformatics, 29, 208, 209, 245
biomarkers, 235–6, 240–1
biomedical information management, 252
biomedical sciences, 28, 230–43
blogs, 132–3
blood pressure monitoring, 139
Blue Button Plus, 208
Borg, Tonio, 124
Boyer, Celia, 8, 131
Bush, George W., 205
business models, 183, 239, 240

Cailliau, Robert, 131
CALLIOPE Network, 50, 53–5, 58
Canada, 166, 206
CancerContribution, 156
capacity building, 221, 226–7
Cardionet, 140
care coordination, *see* co-ordinated care
Care Coordination/Home Telehealth (CCHT) programme, 169, 170
care delivery, 70, 117, 162, 190
case-finding tools, 167–9
The Case for eHealth, 151
case management, 171, 176
cell phones, *see* mobile telephony
Center for Disease Control and Prevention (CDC), 206
certification, 59
Chain of Trust project, 121
Changamka Ltd, 225
Children's Hospital of Barcelona, 156
Christensen, Clayton, 12
Chronic Care Model, 9
Chronic Care Model (CCM), 163, 175–6
chronic diseases, 9, 133, 161, 169, 171, 174–8, 190–1, 197
CISMeF, 151
civil society, 43–4
Clinical and Translational Science Awards, 209
clinical data, 81
clinical informatics, 209
clinical information systems, 176
Clinical Procedure Terminology, 205

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clinical study design, 236–7, 240
clinical terminology, 99–101, 205
cloud computing, 115–16
COHERENCE system, 28
collaboration, 7, 10, 14, 46, 50, 52–3, 55–8, 162, 239, 241
collective intelligence, 132–4
communication, 9, 215–16, 219
communication protocols, 179
Competitiveness and Innovation Programme (CIP), 28
complex adaptive systems, 163–4
confidentiality, 79–80, 192
connectivity, 27–8
consensus-building platform, 197–8
consent, 79, 85
consumer-rating services, 157
cooperation, 29, 30–4, 50–2, 59–60
co-ordinated care, 9, 161–71, 178, 180–1, 191–3, 195
co-production of health, 174, 181–2, 184–6, 190–1
cost benefit analysis (CBA), 260–2
cost effectiveness, 51, 89–90, 162, 211, 237
cost overruns, 268–9
cost reimbursement, 66
costs, 262, 266–7
Council Conclusions of eHealth, 31, 32–3
Council for Health Informatics Professions, 8
Council of EU, 62–3
cross-border healthcare, 67–9, 79, 192
cross-border interoperability, 32–4, 52–5, 57–60, 80–2, 192
cross-border mobility, 87–8
Crossing the Quality Chasm, 210

data, 123–4
  administrative, 81
  big data, 46, 208
  clinical, 81
  co-ordination, 181, 191–3
  for Digital Patient, 251–2
  monitoring, 116
  ownership of, 111
  protection, 79–80, 86–7, 196, 206
  remote collection, 218–19, 220
  secondary uses of, 111–12
  security, 21, 57, 70–1
  sharing, 9, 181, 205–6, 208
  standardisation, 80–2, 252
  structured, 193–4
decision-support systems, 165, 167, 210
demographics, 13
Detmer, Don, 10
diabetes, 175
Diagnosia, 158
diagnostic support, 218, 219
Digital Agenda for Europe, 30
digital health continuum, 185–6
Digital Patient Initiative, 11, 244–57
Directorate General (DG), 62
disease models, 235–6
disease research, 230–43
disease signatures, 235
disease tracking, 218
DocCheck, 158
Doctoralia, 157
doctors, *see* physicians
Doctors 2.0 & You, 152
Doctors.Net, 158
Dose of Digital wiki, 136
drug development/discovery, 10, 11, 230–43
DXY, 158
Dzenowagis, Joan, 5, 37

economic evaluations, 259–72
economy, 11
education, 84, 102–3
EFMI, *see* European Federation of Medical Informatics (EFMI)
eHealth
  barriers to, 78–84, 124–5
  benefits of, 88–90, 117
  care coordination and, 161–71
  cost benefits of, 51, 89–90, 237
  cost of adopting, 85
  cross-border interoperability of, 32–4, 52–5, 57–8, 80–2, 192
  defined, 1–3, 230, 260
  deployment of, 26–9, 124–5
  developments in, 208–11
  drug development and, 235–7
  economic aspects of, 51–2, 195–6, 259–72
  European agenda for, 1990–2010, 26–36
  future of, 90–1, 145, 158

Copyrighted material – 9781137379429

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eHealth – *continued*
global strategy for, 40–1
governance of, 6, 30–4, 37–49, 50–60, 194–8
history of, 149–50
hospitals and, 190–200
integrated care and, 179–80
laws and policies, 67–9
life sciences industry and, 230–43
newness of, 84–5
nursing's role in, 95–105
for patient-driven healthcare, 120–8
person-centred care and, 174–89
physicians' perspectives on, 77–92
scalability, 237, 240
social networks and, 148–58
eHealth Action Plan, 1, 29, 31, 40–1, 84, 123–4
eHealth Governace Initiative (eHGI), 31, 33–4, 58, 69
eHealth Impact (eHI) study, 11, 260–1, 263
eHealth Interoperability Framework, 82
eHealth Lead Market Initiative, 30
eHealth Ministerial conferences, 29
eHealth Network, 50, 52, 56, 58, 69, 82, 87–8
eHealth Task Force, 123
e-Identification, 54
Electronic Data Interchange for Administration, Commerce and Transport (EDIFACT), 22
electronic health records (EHRs), 4, 10, 21, 27–8, 125, 149, 151, 165–6, 176, 177, 181, 191–3, 195
access to, 80
cross-border interoperability of, 30, 32–4, 52–5
economic case for, 265–8
meaningful use of, 205–7
re-use of, 237–9, 240
safety of, 209–10
US experiences with, 202–11
electronic health records, cross-border interoperability of, 57–60, 80–2, 192
Employment, Social Policy, Health and Consumer Affairs Council (EPSCO), 62
employment opportunities, 127
Endogoddess, 156
engagement, 28, 46, 175, 205
England, 13, 168–9
e-patients, 116, 133
epidemic outbreak tracking, 218, 219–20
ePrescriptions, 57–8, 85
epSOS (European Patients' Smart Open Services), 29, 31–2, 50, 53–5, 58, 85
eSENS (Electronic Simple European Networked Services), 57
estimations, 264–5
Estonia, 166
ethical issues, 79
Ethiopia, 224
e-toile project, 196–7
European Commission, 2, 5, 6, 19–21, 26–7, 29–35, 40, 41, 52, 62, 123, 151, 171
European Council, 6, 62, 80, 86
European Court of Justice (ECJ), 62, 64–7
European eHealth agenda, 26–36
cooperation on, 30–4
policy support, 29–30
research and deployment, 26–9
European Federation of Medical Informatics (EFMI), 20
European Health Telematics Association (EHTEL), 121–3
European Innovation Partnership on Active and Health Ageing, 171
European Parliament, 6, 52, 62–3, 68, 80, 86–7
European Patients Forum, 89, 121
European Strategic Programme for Research and Development in Information Technologies (ESPRIT), 20
European Union (EU), 26, 50
co-operation in, 50–2
governance, 58
healthcare spending in, 123
laws, 61–71
patients, 64–7
policies, 61–71
European Union Action Plan for eHealth, 24
evidence-based medicine, 234
expert patient, 89

Facebook, 148, 154
fee-for-service reimbursement, 191, 194

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finances, 83–4, 222–3
financial case, 263, 270–1
Finland, 169
Fisher, Irving, 261
Flowlab, 125–6
Food and Agriculture Organization, 40
Food and Drug Administration (FDA), 136
FRAX tool, 247
freedom of movement, 64–5

gaming, 136–8
Gaudet, Tracy, 126
genes, 127
genetic testing, 208, 234
Geneva Health Information Exchange (HIE), 196–7
Geraets-Smits/Peerbooms case, 66
gerontechnology, 165
Global Observatory for eHealth, 44, 216
Goodwin, Nick, 9, 13, 161
governance, 6, 30–4, 37–49, 194–5
  collaborative, 55–8
  co-operation and, 50–60
  effective mechanisms for, 45–7
  European Union level, 58
  global strategy and, 40–1
  HIT, 195–8
  hospitals, 198–9
  legal issues, 57–8
  new directions in, 50–60
Greece, 169
Green Book, 260–1, 270
Grémy, Francois, 19–20
grid computing, 46, 115–16

Hardiker, Nick, 7
health awareness, 218
healthcare
  access to, 11, 124, 179, 217, 227
  business and service models, 183, 239, 240
  competition, 12
  co-ordination of, 9, 161–71, 178, 180–1, 191–3, 195
  cost effectiveness of, 51, 162
  cross-border, 67–9, 79, 192
  delivery, 70, 117, 162, 190
  government spending on, 123
  integrated. *see* integrated care
  legal issues, 33, 57–8, 61–71, 79
  patient-driven, 120–8
  personalised, 9–11, 28, 185, 208, 234–5, 240, 241, 244, 248, 249–51, 255–6
  policies, 62–3
  preventive, 193, 209, 210–11
  quality of, 190
  systems, transitions in, 4
  workers, 219
Healthcorpus, 137–8
health delivery systems, 27
health education, 220
health goals, 38–9
Health Improvement Portability and Accountability Act (HIPAA), 203–4
health informatics profession, 7–8, 106–19
  branding, 106–7
  characteristics of workforce, 107–10
  entry and career progression, 114–15
  future challenges for, 110–12
  future developments in, 115–17
  personal goals and, 115
  professional growth and evolution of, 112–17
health information, 8
  access to, 45, 132, 144–5
  management, 252
  processing, outsourcing of, 111
  quality of, 138, 144–5
  sharing, 179, 181, 205, 232, 237–9, 240
  standardisation, 138
Health Information Exchanges (HIEs), 209–10
health information networks, 27–8
health information technology (HIT), 190–200
  see also information and communication technologies (ICT)
  electronic health records and, 191–3
  governance, 195–8
  incentives for use of, 194–5
  latest developments i n, 208–11
  leadership and, 198–9
  life sciences industry and, 233
  in population-based care, 193–4
  trust and, 198
  in US, 202–11
Health Information Technology for Economic and Clinical Health (HITECH), 204–7, 209

Copyrighted material – 9781137379429

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Health on the Net Foundation (HON), 8, 131, 138, 140–5, 152
health professionals, tools for, 27
health-related apps, 70–1, 116–17, 134–6
health sector, 51
Health Space project, 77
HealthTap, 134
health telematics industry, 27
Healy, Jean-Claude, 1, 5, 6, 8, 11–12, 19, 21, 24, 35, 37–8, 40–2, 44–8, 50, 60, 61, 71, 151, 245
Hippocratic Oath, 80
HIT, *see* health information technology (HIT)
home automation, 169
home support, 70
HON, *see* Health on the Net Foundation (HON)
HONcode, 140–4
hospital information systems, 149
hospitals, 9–10, 190–200, 203
human genomics, 193

Iakovisis, Ilias, 5, 26
IBG Star, 156
ICT, *see* information and communication technologies (ICT)
identification, 82, 88
India, 220
informatics, 7–8, 19–25, 27, 29, 61, 149
  bioinformatics, 29, 208, 209, 245
  clinical, 209
  medical, 19–25, 27, 29, 106–19, 208–9
  neuro-informatics, 29
  nursing, 95–105
  role of specialists in, 106–19
information, *see* health information
information and communication technologies (ICT), 1, 2–3, 177–8
  see also eHealth; health information technology (HIT)
  adoption of, 45, 101
  creating public value using, 45–7
  in development era, 38–40
  developments in, 131
  effectiveness of, 184
  evolution of, 149–50
  hospitals and, 190–200
  integrated care and, 180–1
  marketplace and procurement models, 183–4, 186
  policies on, 37–8
  for predictive medicine, 28–9
  role of, 163
  standards, 184, 186–7
  US experiences with, 202–11
  Virtual Physiological Human (VPH) initiative, 244–57
information society, 37–8, 45, 46
innovation, 5, 13, 59, 71, 83, 85, 145–6, 171, 234–5
institutions, 4–7, 9–10, 198–9
insuOnline, 158
insurance, 83–4
integrated care, 9, 10, 161–71, 177–81, 195
  dimensions of, 178–9
  eHealth and, 179–80
  levels of, 163–4
  outlook for, 169–71
  person-centred care and, 177–81
  role of eHealth in, 164–5
Integrated Health Networks, 163
Integrated Health Service Delivery Networks, 163
Integrating the Healthcare Enterprise (IHE), 199
International Classification of Disease/ SNOMED, 205
International Foundation for Integrated Care (IFIC), 171
International Medical Informatic Association (IMIA), 19–20, 97–8, 100–1, 107
International Organization for Standarization (ISO), 101
International Physiome project, 29
International Telecommunications Union (ITU), 39
Internet, 8, 207
  access to, 113
  evolution of, 131–4
  future of, 139–40
  impact of, 145
  quality control for, 131–46
  regulation, 142–3
Internet Healthcare Coalition, 150
interoperability, 32–4, 52–5, 57–60, 80–2, 192, 232, 238
Interoperability Agreements, 60

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inter-professional communication, 166–7
Ireland, 177
iTunes, 154

Jones, Tom, 11

Kaiser Permanente, 166, 195
Kalra, Dipak, 9
Keldoc, 157
Kenya, 220, 225
Khreshmoi, 144–5
King's Fund, 13
knowledge technology, 244–6
Kohll/Decker decision, 65–6
Kolitsi, Zoi, 6

laws
  eHealth, 67–9
  EU, 63–4
  mHealth, 69–71
leadership, 31, 34, 198–9
Legal, Privacy, and Protection of Data (LPPD), 57
legal actions, 6
legal issues, 33, 57–8, 60, 61–71, 79
Lepperdinger Group, 127
liability, 187
life expectancy, 127, 231
life sciences, 230–43
  challenges in, 231–2
  eHealth and, 234–41
  information landscape, 232–3
  worldview of information, 233
Linkcare, 192–3
location-aware services, 226
Logical Observation Identifiers Names and Codes (LOINC), 204

Maastricht Treaty, 63
Meamedica, 157
Mechael, Patricia, 10
MEDCOM, 27–8
Medicaid, 204
medical errors, 28
medical informatics, 19–25, 27, 29, 106–19, 208–9
  as brand, 106–7
  performance outcomes, 109
Medical Web Masters, 150
Medicare, 204

mHealth, 4, 112, 125, 131, 134–6, 215–27
  case studies, 219–20
  current state of, 216–20
  defined, 70, 216
  evidence, 221–2
  financing models, 222–3
  future of, 225–7
  interconnected systems, 221–5
  integration with other mobile services, 225
  interoperability, 223–4
  laws and policies, 69–71
  strategies and policies, 224–5
  technology standards, 223–4
mHealth Alliance, 10, 215, 224, 226–7
mHealth Technical Expert Review Group (mTERG), 221
Millennium Development Goals, 38–9, 217, 227
Mintzberg, Henry, 12
mitigation, 268–9
Mobile Academy, 220
Mobile Alliance for Maternal Action (MAMA), 219
mobile health, *see* mHealth
mobile technologies, 112, 215–27
  see also mHealth
Mobile Technologies for Community Health (MoTECH), 219
mobile telephony, 4, 8, 10, 126, 134–6, 215–27
molecular profiling technologies, 234
Mosaic, 131
mPesa, 225
mTrac, 219–20
Müller-Fauré-van Riet case, 66
multiple morbidity, 176–7

Nancarrow, S. A., 166
nanotechnologies, 28
National Committee on Vital and Health Statistics, 204
National Health Service (NHS), 71, 108, 134, 168–9
National Health Service (NHS) Future Forum, 13
National Institute for Health and Care Excellence (NICE), 80
Nationwide Health Information Network (NwHIN), 205

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net benefit, 263–5, 269
Netherlands, 166
neuro-informatics, 29
Nevermind, 136–7
Nexes, 193
NHS Choices, 156
NHS Direct, 152
NICE, *see* National Institute for Health and Care Excellence (NICE)
Nigeria, 220, 225
Nightingale, Florence, 7, 95, 101
non-governmental organizations (NGOs), 37, 39
Nuffield Trust, 13
nurses, 7
Nursing and Midwifery Council (NMC), 102
nursing informatics, 95–105
  advancing, 101–3
  beginnings of, 95–6
  clinical terminology and, 99–101
  defined, 97
  growth of, 96–8
  support for, 98–9
Nursing Minimum Data Set (NMDS), 99–100

ObamaCare, 206
offshoring, 111
online communities, 116
Open Data Kit (ODK), 220
Organisation for Economic Co-operation and Development (OECD) countries, 13
Orphanet, 152
osteoporosis, 247–8
outsourcing, 111

PALANTE, 122
Pan American Health Organization, 163
pathways of care, 179
patient-clinician relationship, 89
patient confidentiality, 79–80
patient-doctor relationship, 8, 134, 138
patient-driven healthcare, 11, 120–8
  see also person-centred care
patient monitoring, 28
Patient Opinion, 157
patient records, 79
patients
  active role of, 195
  authentication of, 82, 88
  autonomous, 13, 134–5, 174
  as co-producers of health, 184–6, 190–1
  cross-border mobility, 87–8
  data of, 111–12
  education of, 126, 176, 187
  empowerment of, 120, 126, 133, 175–6, 184, 187
  engagement of, 28, 46, 175, 205
  e-patients, 116, 133
  EU, 64–7
  expert, 89
  identification of, 82, 88
  involvement of, 121–3
  monitoring, 70
  online communities, 116
  policies impacting, 123–5
  privacy of data of, 86–7
  rights of, 67–9, 80
PatientsLikeMe, 133, 156, 208
patient summaries, 125
patient tools, 28
patient universities, 126
payment systems, 191, 194, 204
personal computers (PCs), 61
Personal Health Systems (PHS), 180
personalised medicine, 9–11, 28, 185, 208, 234–5, 240, 241, 244, 248–51, 255–6
Personally Controlled Electronic Care Record (PCECR), 166
person-centred care, 9, 174–89
  chronic disease management and, 174–8
  future challenges for, 186–7
  integrated care and, 177–81
  key enablers of, 183–4
  scenario for, 181–2
pharmaceutical industry, 10, 193–4, 230–43
phenotypes, 10
physicians
  online communities, 157–8
  perspectives on eHealth of, 77–92
  relationships between patients and, 89, 134, 138
  role of, 86

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Picture Archiving and Communication System (PACS), 85
policies, 4–7, 9, 12–13, 29–30, 107
  challenges to policy-makers, 87–8
  eHealth, 67–9
  EU, 61–71
  hospital, 199
  impacting patients, 123–5
  mHealth, 69–71, 224–5
  planning, 1
  US, 210–11
politics, 4–7, 31
population-based care, 193–4
Porter, Michael E., 12
predictive medicine, 28–9, 234, 255–6
predictive risk assessment, 167–9
preventive healthcare, 193, 209, 210–11
primary care, 77, 193
PRISMA, 166
privacy, 79, 86–7, 192, 196, 210, 238
professional accountability, 187
professional networks, 171
professionals, 107
Project Mwana, 219
Propellerhealth, 140
prospective evaluations, 270
Pulse!!, 137

quality control, 131–46

Ranasinghe, Mayoni, 131
registeries, 193
regulatory issues, 79
Reichertz, Peter, 20
remote data collection, 218–19, 220
remote monitoring, 70, 169, 176
Renaloo, 157
Renewing Health project, 28
research and development (R&D), 26–9, 193–4, 230–43
Research and Development in Communication Technologies (RACE), 20, 22
Research and Technical Development (RTD) programme, 23
REShape & Innovation Centre, 157
retrospective evaluations, 270
right-sourcing, 111
risk assessment, 167–9, 247–8
risks, 265, 268–9
Roberts, Jean, 7, 10, 106
Rosenmöller, Magda, 8, 120
Rossing, Niels, 5, 19, 61

Saving One Million Lives (SOML) initiative, 225
scalability, 237, 240
Scherrer, Jean-Raoul, 20
self-care, 9, 185
self-management, of health, 125–7, 163, 174–7, 179–80, 187
self-testing, 174
Semantic Health Network, 54, 58
semantics, 81–2, 192
sensory devices, 145
Serious games, 158
Sermo physician's community, 158
Seven Sisters, 23
Síaz-Zuccarini, Vanessa, 11
Silber, Denise, 8, 148
smart cards, 21
smart home technology, 165
smartphones, 70, 134–6, 226
  see also mobile telephony
social media, 8, 89, 152–8
social networking, 133, 148–58
Spain, 265–6
Sproxil, 220
stakeholders, 7–9, 37, 50, 185, 194, 240, 260, 262, 270
standardisation, 51–4, 57, 59, 80–2, 99–101, 138, 184, 186–7, 223–4, 252
Standard Nomenclature of Medicine (SNOMED), 204
STEP, 29
STORK, 54
STORK 2.0, 54
structured data, 193–4
Sundgren, Mats, 10
Sundhed, 152
supply chain management, 218
surveillance systems, 218
SUSTAINS, 122
symptom checkers, 134
Syrum, 157

team-delivered care, 176, 178
technical issues, 33–4
technologies, 8, 13, 89

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technologies – *continued*
see also information and communication technologies (ICT)
assistive (adaptive), 116, 165
convergence of, 126, 127–8
interoperability, 223–4
mobile, 215–27
standards, 223–4
Teisberg, Elizabeth, 12
telecare, 165, 169
telehealth, 121, 165, 169, 170, 178, 179
telemedicine, 30, 125–6, 149, 165
telemonitoring, 149
teleradiology, 85
terminology, 81–2, 99–101, 205
Thonnet, Michèle, 6
3GDoctor, 156
TicSalut, 28
time overruns, 268–9
timescales, 262
Topol, Eric, 13
training, 84, 102–3
transhumanism, 128
treatment support, 218
Treato, 157
Treaty on the Functioning of the European Union (TFEU), 63–4
trust, 33, 198
23andme, 208
Twitter, 148
Twitter hashtags, 157

UCB, 157
Uganda, 219–20
UN Global Alliance for ICT and Development (UNGAID), 47
United Kingdom, 13
United Kingdom Council for Health Informatics Professions (UKCHIP), 106, 108–9
United Nations Foundation, 215
United Nations Population Fund, 40
United States, 10, 166, 202–11
up-coding, 206
user authentification, 33
user identification, 33

valued added tax (VAT), 263
value-driven payment systems, 204
Van Braekel case, 66
venture capital, 155
Veterans Administration (VA), 126, 166, 169, 170, 203, 208
virtual communities, 154–5
Virtual Physiological Human (VPH), 11, *29*, 244–57
clinical user interface, 253–4
defining digital patients, 248–51
future directions for, 255–6
mathematical modeling, 252–3
for osteoporotic patient's risk assessment, 247–8
scientific and technological challenges, 251–5
translation and adoption, 254–5
vision of, 246–7
virtual wards, 168–9

Wagner, Edward, 175
Web 2.0, 8, 132–4, 143, 152–8
Web forums, 133
WebSurg, 152
WellDoc DiabetesManager System, 135
Whitehouse, Diane, 8, 120
WHO, *see* World Health Organization (WHO)
Wikipedia, 152–3, 154
Wilks, Michael, 7
Wilson, Petra, 6, 61
workforce mobility, 117
workforce skills, 184
World Congress of Medical Informatics, 98
World Health Assembly, 41–2, 47
World Health Organization (WHO), 5, 6, 19, 20, 24, 37, 38–41, 44–5, 85, 178, 216–17
World Summit on the Information Society (WSIS), 37, 38, 40, 42–5
impact of, 44–5
successes and failures of, 43–4
World Wide Web, 131, 132–4, 145, 149, 152

YouTube, 154

Zambia, 219

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