

AARP EUROPEAN LEADERSHIP STUDY:

European Experiences with Health Information Technology


France, Norway, and the
United Kingdom

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When applied to health care, technology can help to strengthen personal health management, care delivery, public health, and health-related research (Detmer 2003), as well as improve care and reduce medical errors and other inefficiencies.

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Preface

With health care costs rising at unsustainable rates and the Baby Boom Generation nearing retirement, the United States faces essential and imminent debates on the reform of our health care and long-term care systems. As the leading organization in America for positive social change, AARP is poised to lead the discussion on how to achieve better and more affordable health care in the United States and provide long-term care for older Americans. To further inform the discussion, AARP's Board of Directors and senior management traveled to Europe in June 2006 on a fact-finding mission to examine the experiences, trends, and best practices in global aging.

The European Leadership Study (The Study) concentrated on AARP's priority issues of health care and long-term care and examined how certain European countries are addressing challenges similar to those faced in the United States. In particular, The Study provided a deeper understanding of the European experience on pharmaceutical pricing, health information technology, financing and delivery of long-term care services and health care cost containment.

During The Study, the AARP delegation visited France, Norway, the United Kingdom and the Netherlands. The Study provided an opportunity for direct conversations with government officials, representatives from key nongovernmental organizations, consumers, and business leaders. The Study participants held discussions with national health ministers, health care consumers and practitioners, including sessions with the Chief Executive of the United Kingdom's National

Institute for Clinical Excellence (NICE), representatives from Sanofi-Aventis, France's leading pharmaceutical company, and political party officials in the Norwegian Parliament from the Standing Committee on Health and Care Services. The Study also included site visits to hospitals and long-term care facilities that provided invaluable first-hand observation of care as it is practiced abroad.

With the publication of four Issue Papers prepared by the AARP Public Policy Institute, AARP is presenting the background materials prepared in advance of The Study and the lessons learned that were compiled afterwards. The four Issue Papers address: long-term care; health information technology; pharmaceutical pricing; and health care cost containment. The Issue Papers rely on published materials, readily available data sources (such as reports and studies from the Organization for Economic Cooperation and Development and the European Commission, among others) and include, when possible, knowledge from first-hand, in-country experiences.

Due to the nature of available information sources, it was difficult to systematically draw direct comparisons among the four countries visited. Nevertheless, the papers offer important lessons for the United States and teach us that, while we are progressing in some areas of health and long-term care, there is much we can learn from European countries as we address these critical issues.

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Introduction to Health Information Technology Issues

Improving health care quality remains an international challenge. It is apparent from cross-national studies that quality problems do *not* stem from either the way health care is financed or how much is spent (McGlynn 2004). The health care systems of virtually all nations would benefit from the cultural transformation and system redesign recommended by the Institute of Medicine (IOM)¹ to achieve the six objectives for health systems: safety, effectiveness, patient-centeredness, timeliness, efficiency, and equitability (Committee on Quality Health Care in America 2001; McGlynn 2004).

Information technology can promote and facilitate achievement of the IOM objectives through electronic data collection, storage, retrieval, and sharing of various types of health information, including clinical, administrative, and financial data. When applied to health care, technology can help to strengthen personal health management, care delivery, public health, and health-related research (Detmer 2003), as well as improve care and reduce medical errors and other inefficiencies. Ultimately, health information technology (HIT) may also yield substantial savings—by some estimates, as much as \$77 billion per year for inpatient and outpatient care at a 90 percent adoption rate (Hillestad 2005; U.S. General Accounting Office 2003).² Clinical and administrative functions that could contribute to savings include: technology applied to the implementation and use of electronic medical records; order management and results reporting; patient care management;

decision support for clinicians and patients; Internet access for patients and providers; automated billing and other financial transactions; and electronic admission/registration and discharge data (U.S. General Accounting Office 2003).

With a few notable exceptions, such as the Department of Veterans Affairs in the public sector and large integrated HMOs like Kaiser Health Plans in the private sector, United States (U.S.) adoption of HIT lags considerably behind most European countries. Some estimate that the U.S. is behind between 4 and 13 years in implementing a national initiative compared to those nations with more mature national HIT systems (Anderson 2006). Finland, the Netherlands, Sweden, Denmark, and the United Kingdom are considered the leading users of HIT (Harris Interactive 2002a). Nevertheless, in view of its primary purpose as an enabling tool to improve health care quality, the full power of HIT has not yet been realized, even in those countries where HIT adoption is more advanced. For example, electronic clinical information systems cannot consistently track patients across care settings or multiple providers—a function that is critical to better care coordination, improved quality, as well as performance assessment (McGlynn 2004).

Status of HIT in the United States

In the U.S., a “fragmented, go-it-alone culture, and seemingly inadequate investment of funds . . . have appeared to handicap HIT installation” (Bower 2005). A summary assessment of the current state of HIT finds a mixed picture: low penetration of electronic medical records among physicians (15 percent) and hospitals (30 percent); high availability of digital clinical data within certain sectors (pharmacy, laboratory, claims, and imaging); substantial development of proprietary networks by insurers and pharmacy benefit managers (PBMs); uneven adoption of standards; and modest progress toward the development of health information exchanges (Lansky 2006).

Recently, under the leadership of the Office of the National Coordinator for Health Information Technology (ONC), the federal government has begun to take a more active role in promoting the development and acceleration of HIT. A 17-member advisory committee (the American Health Information Community [AHIC]), created by the Secretary of the Department of Health and Human Services in September 2005 to accelerate the adoption of HIT applications, has identified four “breakthrough” opportunities for using HIT in the areas of biosurveillance, consumer empowerment, chronic care, and electronic health records. Workgroups have been charged with making recommendations to the AHIC that will produce tangible and specific value to the health care consumer that can be realized within a one-year period for each of the breakthrough areas.

Contracts have been awarded to public/private groups to advance nationwide interoperable HIT and the secure portability of health information across the nation. These groups will establish strategic partnerships to:

- create and evaluate processes to “harmonize” health information standards;
- develop criteria to certify and evaluate HIT products;
- develop solutions to address privacy and security practices that might impede secure communication of health information; and
- develop a prototype architecture for a standards-based, nationwide health information network that will test patient identification and information locator services, user authentication, access control and other security protections, and specialized network functions.

Finally, due to the importance and cross-cutting nature of privacy and data security issues, in May 2006, the AHIC recommended that the Secretary of the U.S. DHHS create a subgroup to solicit broad public input to inform an initial policy framework and to address: methods of patient identification; methods of authentication; mechanisms to ensure data integrity; methods for controlling access to personal health information; policies for breaches of personal health information confidentiality; and guidelines and processes to determine appropriate secondary uses of data (American Health Information Community 2006).

Country Approaches

Although the focus of this briefing is not the European Union (EU), it should be noted that many HIT implementation challenges transcend national boundaries. National and pan-European strategies coexist and should be considered, particularly in light of EU activity related to the security of networks, eGovernment, eLearning, and eBusiness (TemaNord 2005). The European Commission Action Plan for 2004 includes objectives to: (1) strengthen the use of electronic health records, telemedicine, medical imaging, and e-prescribing and (2) accelerate the investment, deployment, interoperability, and awareness of the benefits of e-health by 2008 (Singleton 2006).

On average, in 2002, among EU members, 78 percent of general practitioners had an Internet connection, 48 percent of medical practitioners had electronic health care records, and 46 percent used the Internet to transmit patient data to other providers. However, levels of Internet use are much lower for telemedicine functions (12 percent), including transactions between patients and their providers for email consultations (12 percent) or appointment-setting online (2 percent) (Commission of the European Communities 2004). As indicated in the three country-specific overviews below, national use and pace of adoption varies.

In general, Internet use³ has been greater in the U.S. than in the EU, although access to the Internet is rapidly growing worldwide. However, as of 2003, the proportion of the population that sought information from the Internet at any time over the previous 12 months was 45 percent in the U.S. compared to 20 percent in

the EU; further, the proportion of the population that had consulted the Internet recently was 24 percent in the U.S. compared to 10 percent in the EU (Work Research Centre 2003).

Overall, the pace of HIT implementation and organizational change has been slow, and numerous challenges must be addressed for an integrated European program to succeed, including: (1) securing commitment and leadership from health authorities; (2) attaining interoperability of e-Health systems to permit seamless integration of heterogeneous systems; (3) ensuring broadband connection for online health services and infrastructure for regional health information networks; (4) eliminating the fragmented regulatory environment of the European eHealth market; and (5) assuring confidentiality and data security (Commission of the European Communities 2004).

Plans are underway to address these challenges. Going forward, by the end of 2006, member states of the EU will identify interoperability standards for health messaging and electronic health records and identify common approaches to patient identifiers. A European Health Insurance Card is already available that includes patient name and personal identification number and enables individuals to get treatment in other member states. The long-range plan is to add an electronic chip to facilitate information exchange among member states and to reduce the risk of error, fraud, and abuse (FrenchEntree.com).

UNITED KINGDOM

General Approach: In 2000, the national government acknowledged that the traditional paper-based record represented a barrier to an efficient, effective health care system, and identified HIT as an integral component of its national modernization program. The National Programme for Information Technology (NPfIT) was charged with improving the quality and convenience of care by ensuring that providers and patients have the right information at the right time; and implementing projects to modernize the NHS using HIT to improve the patient experience and clinical care (Severs 2006). The national vision for the program (also called “Connecting for Health”) is to establish a modern, efficient, patient-focused health care system that benefits patients, clinicians, and health care institutions, as well as the National Health Service (NHS) itself. Patients will have choice of providers and control of, and access to, their records. Clinicians and institutions will have access to up-to-date, comprehensive data to inform clinical decision making and secure ways of transmitting and receiving patient information (Cooper 2006). In addition, the NHS expects to have more accurate and timely information about the health of its patient population as well as how the system is operating. Full implementation of this vision will require integrating and connecting multiple systems and services across a federated NHS that is characterized by local differences and autonomous organizational and administrative approaches. A June 2006 report of the UK’s Comptroller and Auditor General described the scope and vision of the Programme

as “. . . wider and more extensive than any ongoing or planned healthcare IT programme in the world, and it represents the largest single IT investment in the UK to date” (Comptroller and Auditor General 2006).

Specifically, the planned HIT infrastructure will consist of the following components (Detmer 2006; Hendy 2005; National Health Service n.d.):

- NHS *Care Records Service*—an electronic care record for all patients that will, eventually, consist of full local records held on the computers where treatment is provided (e.g., doctor’s office or hospital) and a summary record (a national, central database where information is stored, called the Spine) that contains a summary of essential medical information (e.g., allergies, medication, test results) and demographic information. Links from the Spine will enable access to more detailed information that is available at local sites. When the system is fully implemented, the local records will automatically upload important information to the Spine;
- *Choose and Book*—permits general practitioners to make electronic referrals and book appointments on behalf of their patients;
- Electronic prescription service;
- *N3 Network* for the NHS—a national broadband;
- National email and directory service;
- Digital Picture Archiving and Communications Systems—stores and retrieves x-rays; and
- Electronic support systems for payments to general practitioners (GP).

Due to the size and complexity of the endeavor, implementation of the infrastructure has been “sub-optimal” (Hendy 2005). Initial target dates have been missed, and several milestones have been delayed (Comptroller and Auditor General 2006). Delivery of the first phases of the Care Records Service, originally projected to occur in 2005, is not expected until late 2007. Deployment of the national clinical record originally targeted for 2004 will occur only in pilot form in late 2006.

Nevertheless, a recent audit of the program indicates that the NHS continues to plan for full implementation of the new infrastructure by 2010, as originally expected (Comptroller and Auditor General 2006). Approximately 90 percent of GP practices are technically enabled to use the *Choose and Book* function, and broadband VPN (virtual private network) is installed for almost all GPs. The actual number of bookings among Primary Care Trusts has been growing, albeit slowly. Training is underway to assist frontline staff to use the networks, and an information campaign has been launched about the NHS *Care Records Service*. Development is also underway to upload information to the Spine from GP systems; in April 2006, there were 219,000 users registered to the Spine (Severs 2006). The NHS also issued plans for new approaches and structures for patient and public involvement in the NHS, including provisions for increased patient access to information about health and

local services; choice with respect to date and time of elective care; the development of a National Clinical Assessment Authority to assess physician performance; and annual disclosure of patient opinion about each local NHS organization (Cayton 2004).

Financing/Projected Savings: Implementation was initially projected to cost approximately £6.2 billion (\$11.8 billion) but is now expected to be £12.4 billion (\$23.6 billion) over the 10-year life of the main HIT contracts. The UK's National Audit Office has described these amounts as "an amalgamation of fixed price contracts," not a budget. The difference between the initial and current estimates is attributed to the addition of new components to the system (i.e., not necessarily cost overruns). In time, the NHS projects savings on hardware and software through national procurement of HIT and expects to realize greater value from national health care expenditures. At the same time, it is recognized that, "the main justification for the Programme is to improve services to patients, rather than merely to make economies in providing pre-existing standards of service" (Comptroller and Auditor General 2006).

National Identifier: The NHS assigns individuals an NHS number that is used to track them across providers and institutions.

Privacy and Confidentiality: There is no explicit right to privacy in the United Kingdom (Singleton 2006). However, the NHS Care Record Guarantee, consisting of 12 specific commitments, assures the public that the NHS will handle patient data in a confidential and secure manner and that it will not share an individual's personal information in an inappropriate manner⁴ (Detmer 2006). The legal framework for the processing and use of personal information is found in the Data Protection Act of 1998. Further, the Freedom of Information Act gives people the right to access information held by or on behalf of public bodies (including the NHS), which obligates the public bodies to disclose the information they publish and how it can be obtained (Meredith 2005).

Clinicians' Use of HIT: In 2002,

- 58 percent of general practitioners used electronic medical records;
- 27 percent maintained practice websites;
- 87 percent used the Internet or general practitioner networks; and
- 18 percent used a computer or PDA (Harris Interactive 2002a).

A survey reported in 2004 indicates that three-quarters of physicians believe that the NHS HIT initiative is an important NHS priority (Powell 2004).

Consumer Use of Technology: In 2004, 65 percent of households had computer and Internet access (compared to 38 percent who had access in 2000; OECD 2006).

Consumer Information: The NHS Direct Online (www.nhsdirect.nhs.uk) offers health information online, access to a 24-hour telephone nurse help line, as well as information on over 70,000 physical NHS sites. In addition, several hundred touch screen kiosks are available in public locations (e.g., pharmacies, libraries, supermarkets). Many millions use the online tools, and about 60,000 users a year access the kiosks (Commission of the European Communities 2004).

FRANCE

General Approach: France has not yet established a fully integrated (i.e., administrative and clinical components) HIT framework (eUSER 2005). Rather, to date, HIT initiatives have focused mainly on business and administrative applications that facilitate patient data administration and financial reporting. Smart card technology is in place (see below), and some hospitals feature online registration for elective hospital stays (eUSER 2005). All medical centers, clinics, and hospitals have websites that offer general information, such as a listing of their services. The low volume of online services is undoubtedly affected by the relatively meager penetration and use of the Internet (see below), although this is changing rapidly. Moreover, communication between physician and patients is hampered by barriers noted in a 2000 report of the French Physicians Association, such as concerns about confidentiality and privacy of patient information, legal concerns about rendering clinical opinions in the absence of a face-to-face visit, and lack of explicit payment for online consultations⁵ (eUSER 2005). Notwithstanding these obstacles, recognition by government officials and others of the need to improve quality and patient safety coupled with advancements in the functionality of clinical information systems presages substantial increases in the application of HIT (Frost and Sullivan 2005).

The SESAM-Vitale, the first completely automated system in which smart cards were used in the health care sector, was introduced in France in 1998 to simplify and accelerate provider reimbursement (Smart Card Alliance 2005). The SESAM-Vitale is a service of the National Health Insurance Fund (CNAMTS) and supervised by the SESAM-Vitale Economic Interest Group (GIE), a public/private partnership established in 1993 to manage the system and provide technical support (Vitale Mission n.d.).

SESAM-Vitale is a dual-card system consisting of a card for patients (*La Carte Sesame Vitale*) and a card for health professionals (*La Carte de Professionnel de Santé [CPS]*). The data on a patient's card cannot be read without the presence of the CPS. *La Carte Sesame Vitale* is issued to all people age 16 and older who are entitled to social security reimbursements. In addition to the patient's name, it includes the insured's identity number (the *Numéro d'Inscription au Répertoire* or NIR, the French equivalent to the U.S. Social Security number) and administrative entitlement information, such as the type of insurance coverage, insurance fund name, and proof of entitlement.

About two-thirds of health care professionals are now linked via the SESAM-Vitale (Sesam-Vitale 2006). However, use varies by sector, with high rates among pharmacists (95 percent) and general practitioners (82 percent), and lower rates among laboratories (14 percent; Badey 2006; eGovernment News 2004). The SESAM-Vitale has eliminated paper in the claims processing function and has allowed the CNAMTS to significantly reduce administrative staffing (Becq 2006). Since its introduction, the processing time for provider reimbursement has been reduced from two to three weeks to five days (Sesam-Vitale 2006).

Plans are underway to expand the functionality and capacity of the SESAM-Vitale and to adopt standards that will ensure interoperability between government-issued cards and card-reading devices. The smart card technology will be upgraded to greatly increase the chip capacity, reinforce the security of health insurance operations, and reduce fraud with the inclusion of a photograph of the holder (eGovernment News 2004).

Finally, an important upgrade will enable “*Vitale 2*” to become an electronic health record that will eventually allow health professionals to access patient records electronically from any location. Implementation challenges that are being encountered include assuring confidentiality of personal medical files, opposition to the possibility of physician profiling from the medical community, and the cost of implementation (Becq 2006).

Financing/projected savings: The government projects that electronic patient records will help reduce duplication of services and save the social security system approximately €6.5-7 billion (\$8.3-\$9 billion) by 2007 (eGovernment News 2004). A 2005 report suggests that budget deficits in the French health care system pose a major barrier to the adoption of an integrated national HIT plan and constrain government “buy-in” for HIT investments (Frost and Sullivan 2005).

National Identifier: The *Numéro d’Inscription au Répertoire*, or *NIR*, is the French equivalent to the U.S. Social Security number.

Privacy and Confidentiality: Online communications between physicians and patients are discouraged. The Commission Nationale Informatique et Libertés (CNIL) warns of the potential for privacy breaches that could arise from email use, misdialing of fax recipients, and transmission of patient data online. For these reasons, telemedicine is permitted for diagnostic purposes between health professionals but not between patients and health professionals (eUSER 2005).

The French data protection authority has issued guidelines for health websites that seek to ensure that websites provide high quality data (eUSER 2005), although as of mid 2005, an audit of health websites found that information on users’ rights was still lacking (eUSER 2005).

Clinicians' Use of HIT: In 2002, 11 percent of general practitioners used a PDA in their practice (Harris Interactive 2002a).

Consumer Use of Technology: In 2004, about 50 percent of households had access to a home computer (up from 27 percent in 2000; OECD 2006), while 34 percent had access to the Internet (OECD 2005).

Consumer Information: In 2002, 60 percent of French respondents believed that health care information on the Internet was of good quality, and 93 percent found it trustworthy (Harris Interactive 2002b). The most frequently visited websites were commercial health pages (Harris Interactive 2002c). Fifty-seven percent used the Internet “sometimes” to look for information about specific medical conditions (Harris Interactive 2002c). However, only very small proportions of respondents ever acted on the information they saw on the Internet or believed that health-related information had a “major impact” on how well they managed their health (20 percent) or helped them comply with treatments (10 percent). Only 13 percent discussed Internet-obtained information with their doctor, and only 5 percent asked their doctor for a prescription medication based on such information (Harris Interactive 2002b). Finally, in 2002, 8 percent thought it would be “extremely likely” that they would use a confidential service to communicate with their doctor on the Internet, while 35 percent reported that it was “not very likely” or “not at all likely” that they would (Harris Interactive 2002d).

NORWAY

General Approach: Compared to many other countries, Norway is advanced with respect to the deployment and use of HIT. The Directorate for Health and Social Affairs has the responsibility for coordinating Norway's national planning strategy for HIT implementation. Since 1997, three national action plans⁶ for HIT development have been issued to: stimulate electronic communication and data exchange; strengthen collaboration and efficiency between health and social services; improve quality; and achieve cost savings (Bergstrom 2004; Norwegian Ministry of Social Affairs–Norwegian Ministry of Health 2004). An additional goal of HIT is to use technology to overcome barriers that arise from Norway's low population density and the long distances residents must travel to obtain medical care. While the Norwegian government recognizes that HIT is not a “universal solution for all challenges,” it views HIT as a means of “reducing stress on the public sector and creating opportunities” (Bergstrom 2004).

The development of policies and standards applicable to HIT is addressed by four key national competence centers: (1) *KITH*–The Norwegian Center for Health Informatics (develops and implements standardized terminology and coding systems, secure information exchange and standards for electronic medical records); (2) *NST*–The Norwegian Center for Telemedicine (provides research and promotes telemedicine services in practice); (3) *KoKom* (advises the national and local govern-

ments on operational issues); and (4) *NSEP*—The Research Center for Electronic Health Record Systems (conducts research and education related to electronic health records).

The Norwegian Health Network will ensure data quality, security of information, and protection of privacy during the exchange of sensitive information. It consists of five regional health networks which were linked in October 2004 to connect the entire health sector, including municipalities, counties, regions, and different administrative levels.

The Norwegian Health Network is designed to provide a foundation for electronic interaction and exchange among health personnel and with their patients. The network is based on a physical infrastructure that has adequate capacity and coverage and provides a set of basic services to facilitate interaction among the various components of the network. However, complete integration and connectivity among hospitals, general practitioners, private specialists, and pharmacies has not yet been achieved.

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Norway has HIT standards in place to address: coding and classifications systems and definition of terms; electronic health records and information exchange; and architecture, archiving, and security. However, still lacking is an overall architecture that relates to the care process (Hygen n.d.), including decision support tools to provide professionals with evidence-based sources of information. (The inclusion of this type of support is part of the most recent strategic plan for HIT.)

National Identifier: There is a single national health identification number that is used for all social security benefits, including health, disability, unemployment, etc. (Andresen 2006).

Privacy and Confidentiality: Norway has rigorous legislative requirements concerning the handling of personal health information (Bergstrom 2004). *Te@mwork 2007* addresses the dual imperatives of safeguarding the confidentiality and integrity of sensitive personal information and affording complete, updated, correct, and relevant information to those who have a legitimate need for such information (Norwegian Ministry of Social Affairs—Norwegian Ministry of Health 2004). Accordingly, work has been initiated to develop a “trade standard” to apply a minimum set of requirements for information security. In addition, the government is proceeding with a strategy for a Public Key Infrastructure (PKI) that will enable implementation of digital signature throughout the health sector.

Clinicians’ Use of HIT: All physicians (GPs and specialists) have electronic health records (and have had them since the 90s), as do the vast majority of hospitals (80 percent; Hygen n.d.). However, there are large variations in the extent to which hospitals use electronic health records, and many still maintain parallel paper-based records (Bergstrom 2004). In addition, PACS (Picture Archiving and Communication Systems that permit electronic transmission of medical images)

were to have been available in virtually all Norwegian hospitals by 2005. Finally, Norway puts great emphasis on telemedicine because it permits at-home treatment from nurses and physicians and helps to address opportunities for providing access to service for vulnerable population groups, including those living in rural areas, that otherwise might not receive care.⁷ It is interesting to note that, relative to the adoption of other HIT applications, some consider use of “telehomecare” lagging (Aas 2006). However, Norway pioneered teleradiology 15 years ago for use in emergency care, second opinions, and consultations between hospitals and physicians.

Consumer Use of Technology: In 2004, 72 percent had access to a home computer (OECD 2006), while 60 percent of households had access to the Internet (OECD 2005).

Lessons for the United States

The U.S. and the European countries that were studied share a common understanding of the potential that HIT holds for health care improvement and cost reductions in the health care sector. England, France, and Norway, as well as other countries in the European community, recognize the critical role that HIT can play as an enabling tool to advance quality improvement initiatives by means of interoperable systems that facilitate better coordination within and across health care settings. Several common features observed in the European countries (such as universal coverage, assignment of a national identifier) have contributed to more rapid HIT adoption than has occurred in the U.S. In addition, the U.S. differs fundamentally from its European counterparts in such areas as the organization and delivery of health care, national views on the role of government, and attitudes about the importance of individualism versus social solidarity; such differences may have inhibited more rapid HIT adoption in the U.S. in comparison to the pace observed in Europe. Anderson and colleagues also observe that the simple health insurance contract structures and standard nomenclatures helped to facilitate HIT adoption by European countries (Anderson 2006).

Nevertheless, there are valuable lessons the U.S. can learn from the European experience, including ways to avoid some of the pitfalls that earlier HIT adopters may have encountered. It is a useful exercise to consider how other countries have pursued national initiatives to develop their HIT infrastructures. The experience of the

three countries considered in this brief suggests that there are several developmental steps that must be addressed, regardless of geographic location or health system design. These are discussed below.

A national commitment to HIT is essential. Perhaps the most obvious dynamic observed in the three-country study of England, France, and Norway is the national priority placed on implementation of technology in the health care sector and the willingness of national governments to spend political and financial capital to achieve “connectivity.” A clear articulation of support for a national framework by opinion leaders and decision makers is needed to establish the direction for public and private initiatives.

Until the recent announcement of a 10-year initiative to develop electronic health records and other uses of HIT, the U.S. has not made HIT adoption a national priority. (Some would argue that this plan pales in comparison to international efforts, particularly in England and Norway.) Even in France, which is arguably behind the two other countries studied, early adoption of smart card technology has enabled a national, electronic approach to claims payment which, going forward, will greatly facilitate rapid progress and implementation of electronic patient health records.

Except for a few notable exceptions in the U.S., the level of public and private investment has not yet been sufficient to accelerate the use of technology in health care. Of course, the size and scope of U.S. efforts must be, of necessity, far more extensive, making the task more difficult than in the countries studied, which have smaller, more unified health care systems. Nevertheless, incentives are not yet in place in the U.S. to accelerate wide adoption of health technology. There continues to be a disconnect between who pays and who benefits from HIT (Taylor 2005). Investment by providers will continue to be inhibited until they perceive that the advantages of HIT are shared among all stakeholders and not primarily to payers. Government investment is similarly stalled due to the absence of clear, documented savings. A recent congressional proposal to promote adoption of HIT and national standards for implementing electronic medical records was stalled after the Congressional Budget Office projected that the proposal would increase spending (Monegain 2006).

Even when the political environment is favorable, implementation of a nationwide HIT infrastructure is a daunting, complex process. The experience of the UK demonstrates the challenges of achieving HIT goals and presents an enlightening and sobering lesson of how difficult it is to implement a national health information infrastructure. Cultural barriers (e.g., in France, where there is evidence of provider resistance to sharing records and other HIT applications) and/or provider resistance can pose serious challenges to HIT adoption. In addition to adequate financial resources, organizational and cultural transformation, as well as political and clinical leadership to motivate acceptance from all interested stakeholders, must guide the design and implementation processes. In the UK, the national govern-

ment fully appreciates that “to truly realize productivity gains, this IT investment will need to be accompanied by profound service transformation too . . .” (Cavendish 2006).

Personal health identifiers would facilitate data sharing. The use of unique patient identifiers is common to all of the countries that we studied. In the U.S., there is still no consensus on this issue, although it has been considered (and rejected) by congress in the past (1998). Some stakeholders are pressing for a reexamination of the decision on using identifiers for health care data (Conn 2006) on the grounds that they would greatly aid information sharing. They view the lack of a unique identifier as a serious impediment to patient authentication and rapid HIT progress. Others believe that patient authentication can be achieved without such an identifier. For example, Connecting for Health, a large multi-stakeholder consortium, recently demonstrated that alternative approaches can successfully locate and authenticate individual patient data, thus obviating the need for a unique identifier (Markle Foundation 2006).

The public must be assured that personal health information is adequately protected. Many European countries have implemented policies to address privacy and data security in ways that satisfy and reassure their citizens (e.g., England, Norway). In the U.S., consumers and patients are wary of relinquishing control of their personal data, and privacy considerations are contentious and a potential barrier to more rapid HIT deployment; some observers assert that such perceptions and concerns about data protection are “largely flawed” (Shortliffe 2005). Nevertheless, recent breaches in the U.S. have exacerbated concerns among consumers and public officials. Designing effective procedures to address breaches and violations that all stakeholders can accept remains a policy challenge for the U.S. As noted elsewhere in this brief, the AHIC is initiating steps to forge greater consensus on privacy and data security.

Measuring the value of HIT, including return on investment, should be considered in light of both its direct and indirect benefits (Shortliffe 2005). Leaders of the NHS in the UK recognize that HIT is not an end in itself but rather a means to an end, with the potential to hasten the improvement of health care quality. They acknowledge that HIT is not likely to yield short-term savings. When asked whether the NHS considers HIT a cost containment strategy, Richard Douglas, Director General, Finance and Investment of the NHS observed that expecting HIT to yield substantial savings in the short to mid-term would be “a triumph of hope over experience” (Douglas 2006).

Endnotes

- ¹ Recommendations of the IOM offer a perspective on how patients and their clinicians should relate and how care processes should be redesigned to optimize patient needs (Committee on Health Care Quality in America 2001).
- ² It should be noted that rigorous studies on costs savings are lacking, even in those countries that make greater use of HIT than the U.S. (Anderson et al. 2006; Shekelle et al. 2006).
- ³ In this brief, Internet access is presented as a very rough proxy of consumer readiness for using HIT applications.
- ⁴ A copy of the NHS Care Record Guarantee can be found in Appendix A of “Learning from Abroad: Lessons and Questions on Personal Health Records for National Policy” (PPI Publication #2006-10). http://www.aarp.org/research/health/healthliteracy/2006_10_phr_abroad.html
- ⁵ Note that these are similar to barriers found in the U.S.
- ⁶ *More Health for Each bIT, Say@!, and Te@mwork* 2007.
- ⁷ Of course, to benefit from the technology, such population groups would have to have Internet access and “digital literacy.”

References

- Aas, M. March 20, 2006, 2006.
- American Health Information Community. 2006. "Meeting Details." Washington, DC.
- Anderson, G., Frogner, B., Johns, R., Reinhardt, U. 2006. "Health Care Spending and Use of Information Technology in OECD Countries." *Health Affairs* 25(3):819-31.
- Andresen, M. April 10, 2006, 2006.
- Badey, F. 2006. "Introduction to the French Health Care System: presentation to the AARP Board of Directors." Baltimore, Maryland.
- Becq, G. 2006.
- Bergstrom, R., Heimly, V. 2004. "Information Technology Strategies for Health and Social Care in Norway." *International Journal of Circumpolar Health* 63(4):336-48.
- Bower, A. 2005. *The Diffusion and Value of Healthcare Information Technology*. Santa Monica: RAND Corporation.
- Cavendish, W. 2006. "Future Challenges in Healthcare and Potential Directions of Policy." London, England.
- Cayton, H. 2004. "Patient Engagement and Patient Decision Making in England." In *Improving Quality of Health Care in the United States and the United Kingdom: Strategies for Change and Action*, pp. Pennyhill Park, Bagshot, England.
- Commission of the European Communities. 2004. "Communication From the Commission to the Council, the European Economic and Social Committee, and the Committee of the Regions- e-Health- Making Healthcare Better for European Citizens: An Action Plan for a European e-Health Area." Brussels.
- Committee on Quality Health Care in America. 2001. *Crossing the Quality Chasm*. Washington, D.C.: National Academy of Science.
- Comptroller and Auditor General, N. A. O. 2006. "The National Programme for In in the NHS: Report by the Comptroller and Auditor General." London.
- Conn, J. 2006. "Identity Crisis?" [accessed on June 2, 2006, 2006]. Available at: <http://www.modernhealthcare.com/printwindow.com?articleId+39927&pageType=article>.
- Cooper, T. 2006. "Delivering IT for a Modern, Efficient NHS." In *Does IT Work?: Next Generation in the Information Age*, pp. Washington, D.C.: AARP Global Aging Program.
- Detmer, D., E. 2003. "Building the National Information Infrastructure for Personal Health, Health Care Services, Public Health, and Research" [accessed on March 15, 2006]. Available at: <http://www.biomed-central.com/1472-69473/3/1>.
- Detmer, D., E., Steen, Elaine. 2006. *Learning from Abroad: Lessons and Questions on Personal Health Records for National Policy*. pp. 69. Washington, D.C.
- Douglas, R. 2006. "Remarks at June 7, 2006 Meeting with AARP Board of Directors,.." London, England.
- eGovernment News. 2004. "French Electronic Health Insurance Card to be Upgraded" [accessed on April 1, 2006, 2006]. Available at: <http://europa.eu.int/idabc/en/document/2519/353>.
- eUSER. 2005. "Public Online Services and User Orientation- Country Brief: France" [accessed on March 16, 2006, 2006]. Available at: http://www.euser-eu.org/euser_countrybrief.asp?CaseID=1790&CaseTitleID=740&MenuID=.
- FrenchEntree.com. "The New European Healthcard" [accessed on March 14, 2006, 2006]. Available at: <http://www.frenchentree.com/fe-health/DisplayArticle.asp?ID=7243>.
- Frost and Sullivan. 2005. "Analysis of the French Healthcare IT Market" [accessed on April 3, 2006, 2006]. Available at: <http://www.marketresearch.com/product/display.asp?productid=1199326&xs=r&SID=60993697-347938296-387951961&curr=USD&kw=&view=toc>.
- Harris Interactive. 2002a. "European Physicians Especially in Sweden, Netherlands, and Denmark, Lead U. S. in Use of Electronic Medical Records." *Health Care News*. Robert Leitman.
- Harris Interactive. 2002b. "Four-Country Survey Finds Most Cyberchondiracs Believe Online Health Care Information Is Trustworthy, Easy to Find and Understand." *Health Care News*. Robert Leitman.
- Harris Interactive. 2002c. "Four-Nation Survey Shows Widespread but Different Levels of Internet Use for Health Purposes." *Health Care News*. Robert Leitman.

- Harris Interactive. 2002d. "The Future Use of the Internet in Four Countries in Relation to Prescriptions, Physician Communication, and Health Information." *Health Care News*. Robert Leitman.
- Hendy, J., Barnaby Reeves, Naomi Fulop, Andrew Hutchings, Cristina Masseria. 2005. "Information In Practice: Challenges to Implementing the National Programme for Information Technology: a qualitative study." *BMJ* 331:331-36.
- Hillestad, R., James Bigelow, Anthony Bower, Federico Girosi, Robin, Meili, Richard Scoville, Roger Taylor. 2005. "Can Electronic Medical Record Systems Transform Health Care? Potential Health Benefits, Savings, and Costs." *Health Affairs* 24(5):1103-17.
- Hygen, J. n.d. "Health Informatics and Telemedicine in Norway." KITH.
- Lansky, D. 2006. "Health Privacy in the U.S.-National Health Information Network,." In *Does IT Work? Next Generation Care in the Information Age*, pp. Washington, D.C.
- Markle Foundation, C. f. H. 2006. "Connecting for Health Common Framework." New York, N.Y.
- McGlynn, E. 2004. "There Is No Perfect Health System." *Health Affairs* 23(3):100-02.
- Meredith, B. 2005. "Data Protection and Freedom of Information: the law is only a catalyst for changing the culture of the NHS." *BMJ* 330:490-91.
- Monegain, B. 2006. "House Republicans Stall Healthcare IT Bill." *Healthcare IT News*.
- National Health Service. n.d. "The Spine" [accessed on April 11, 2006, 2006]. Available at: http://www.connectingforhealth.nhs.uk/publications/comms_tkjune05/spine_factsheet.pdf.
- Norwegian Ministry of Social Affairs- Norwegian Ministry of Health. 2004. *National Strategy 2004-2007-Te@mwork 2007*. pp. 23. Oslo: Directorate for health and Social Affairs.
- OECD. 2005. "OECD Key ICT Indicators:." *OECD Science, Technology, and Industry Scoreboard 2005*. pp. Households with access to the Internet (1) 2000-04; (2) percentage of households.
- OECD. 2006. "OECD Factbook 2006—Economic, Environmental and Social Statistics" [accessed on March 30, 2006, 2006]. Available at: <http://oberon.sourceoecd.org/v1+1005953/cl+13nw+1/rpsv/factbook/06-02-03.htm>.
- Powell, J. 2004. "NHS National Programme for Information Technology: Changes Must Involve Clinicians and Show the Value to Patient Care" [accessed on March 10, 2006, 2006]. Available at: <http://bmj.bmjournals.com/cgi/content/full/328/7449/1200>.
- Sesam-Vitale, G. 2006. "The Sesam-Vitale Program" [accessed on April 3, 2006, 2006]. Available at: http://www.sesam-vitale.fr/programme/programme_eng.asp.
- Severs, M. 2006. "Presentation to AARP Board of Directors: The National Programme for IT,." London, England.
- Shortliffe, E. 2005. "Strategic Action In Health Information Technology: Why The Obvious has Taken So Long." *Health Affairs* 24(5):1222-33.
- Singleton, J. 2006. "Health Privacy in the UK." In *Does IT Work? Next Generation Care in the Information Age*, pp. Washington, D.C.
- Smart Card Alliance. 2005. "French Sesam Vitale Health Card" [accessed on April 1, 2006, 2006]. Available at: http://www.smartcardalliance.org/pdf/about_alliance/user_profiles/French_Health_Card_Profile.pdf.
- Taylor, R., Bower, A., Girosi, F., Begelow, J., Fonkych, K., Hillestad, R. 2005. "Promoting Health Information Technology: Is There A Case For More-Aggressive Government Action?" *Health Affairs* 24(5):1234-45.
- TemaNord. 2005. *Health and Social Sectors with an "e": A Study of the Nordic Countries*.
- U.S. General Accounting Office. 2003. *Information Technology: Benefits Realized for Selected Health Care Functions*. Washington, D.C.
- Vitale Mission, S.-V. n.d. "SESAM-Vitale: The French Healthcare Billing System."
- Work Research Centre. 2003. "Benchmarking Health in the Information Society and in the U.S." *Statistical Indicators Benchmarking the Information Society*.

