



USES AND APPLICATIONS OF IT IN PUBLIC HEALTH

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(I) ABSTRACT

The scope of this paper encompasses a broad range of issues dealing with various uses and adoption of emerging communication technologies that promote availability of many applications in different industries. One particular industry which is experiencing a rising consumer and physician demand for the adoption of IT is national healthcare. Healthcare organizations today are increasingly becoming virtual organizations where complex technologies transform the traditional practice of medicine. However, due to a financial crisis experienced in healthcare today, the industry is burdened by numerous challenges with regards to adoption of new technologies. These challenges exist because of complex socio-economic and organizational issues as well as difficulties created by federal and state regulatory environment. The broader scope of this paper attempts to capture the legislative framework which promulgates the adoption and implementation of innovative health information technologies commonly referred to as HIT.*

(II) PURPOSE

The purpose of this paper is to demonstrate the use of Health IT (HIT) and its various applications in healthcare. The U.S. national healthcare is delivered through a variety of public and private sources making it a complicated process burdened by various legal, organizational, and political constraints that are placed on this market due to its heavily regulated nature.

The use of health information and communication systems has advanced to the forefront of national healthcare agenda in recent years. The use of HIT is rapidly changing ways healthcare is delivered today, however its adoption is a multilayered process burdened with different limitations associated with the emergence of virtual communication systems that are quickly redefining traditions in the practice of medicine.

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(III) INTRODUCTION and BACKGROUND

Health care spending and the role of the Federal Government in defining a strategy for Health IT

“America's spending on health care continues to grow faster than the rest of the economy, accounting for an ever-larger share of the country's gross domestic product. Prices for health care goods and services are rising faster than those for other goods and services, and we're using more health care than ever before.”¹

Healthcare spending in the United States has gone through several transformations over the recent decades, having reached a 44 percent rise in “real per capita terms” in the last 10 years according to the 2006 Economic Report of the President (ERP).² Additionally, healthcare spending is growing faster than the normal rate of inflation, greatly increasing the cost of health insurance premiums. Some of the contributing factors cited in the ERP as leading causes for the marked rise in healthcare sector spending are: inefficient resource allocation and uneven cost-sharing mechanisms, high prices associated with medical goods and services, interaction between new and expensive technologies and health insurance coverage, and complex issues arising from government regulation of social programs.³ The dominant trends that drive rapid growth are increased spending in federally-funded programs (e.g., Medicare, Medicaid); adoption of technologically advanced healthcare goods and services, and accelerated growth of premiums in private health insurance markets driven by consumer demand and the rising costs of

¹ America's Health Insurance Plans (AHIP). “Rising Health Care Costs.” Issue areas. Available online at [<http://www.ahip.org./content/default.aspx?bc=39|341||327&pf=true>]

² President George W. Bush and Council of Economic Advisors, *Economic Report of the President* (Congress, February, 2006 accessed November 14, 2006); available from [http://www.gpoaccess.gov/eop/2006/2006_erp.pdf.]

³ Ibid.(2, accessed).

goods and services.⁴ Another factor driving healthcare spending costs cited in the ERP is inefficient health markets that have led to over-utilization of medical care.⁵

It has been estimated that the U.S. spends a proportionately larger share of GDP on healthcare than other industrialized countries. This difference can be explained in part by high levels of per capita income and output. Healthcare spending increased from around six percent of GDP in 1965 to 16 percent of GDP in 2004. Based on recent data from the Center for Studying Health System Change (HSC) reported by AHIP, annual growth of healthcare costs has been steady between seven and eight percent since 2004 after having peaked to 10 percent in 2001 and 2002.⁶

Whenever there is an increase in per capita spending, there is an equally severe pressure on the use of government programs and increased public spending. Government healthcare expenditures have increased from 25 percent in 1965 to over 45 percent today due to escalating costs of social entitlement programs such as Medicare and Medicaid for senior citizens.⁷ Rapid growth in healthcare places significant burdens on markets and consumers and constrains federal and state budgets. The persistence of the above trends, combined with the retirement of baby boomers and the 2006 Medicare Drug benefit requirement, leads to a substantial share of federal financing creating overall increased costs to governments. A 2006 GAO report defines the federal government having a crucial role in “shaping the healthcare industry as a regulator, purchaser, healthcare provider, and sponsor of research, education and training.”⁸ Federal agencies provide funding for approximately a third of our nation’s total healthcare costs. Major

⁴ Ibid.(2, accessed).

⁵ Ibid.(2, accessed).

⁶ Center for Policy and Research, *Health Cost Trends Remain Stable at 7-8 Percent* (November 2006 accessed November 20 2006); available from <http://www.ahipresearch.org/PDFs/CostTrends2006.pdf>.

⁷ Ibid (2) President George W. Bush and Council of Economic Advisors, (accessed).

⁸ Health Information Technology. HHS Continuing Efforts to Define Its National Strategy. Testimony Before the Subcommittee on Federal Workforce and Agency Organization, Committee on Government Reform, House of Representatives. Statement of David A. Powner, Director, Information Technology management Issues. GAO-06-1071T.

federal programs such as Medicare and Medicaid provide healthcare to more than 115 million Americans based on HHS reports cited by the GAO. (The attached table in Appendix I shows the breakdown of beneficiaries and expenditures in Major Federal Programs for Fiscal Year 2004.)

Improving the quality and delivery of healthcare is the main impetus for healthcare reforms that tends to be a set of contentious issues among policymakers and is especially relevant in light of recent congressional elections. The use of information technology promulgates the achievement of these higher goals and improvements to be made in public health in the years to come. Given the role of federal government's involvement in providing all aspects of health care, it is no surprise that it has assumed a leading role in speeding up the adoption of health IT standards. As such, the public sector has taken initiatives in health IT strategy. The 2006 GAO report discusses progress made by the department of Health and Human Services in its efforts to improve quality of healthcare by setting a number of objectives and issuing recommendations regarding HIT adoption practices and uses (Please refer to Appendix II for a list of Health IT contracts awarded by HHS's Office of the National Coordinator).⁹

(IV) DISCUSSION

Before full benefits and potential of the use of communications technologies can be fully realized by the healthcare industry and population as a whole, universally accepted standards for use of electronic health care transactions have to be in place and functioning efficiently. As stated in the opening section of the paper, this is a heavily regulated area in health care today. Some key issues that are frequently raised in national policy debates with regards to public health and the use of new innovative technologies include: doctor-patient relationship; medical malpractice; cross-border and cross-state licensure, standards and reimbursement for

⁹ Ibid. (8, accessed)

telemedicine services. The development of complex innovative technologies is reshaping cultural, social and organizational dimensions of the traditional practices of medicine.

Permeated with legal concerns about safeguarding privacy in an attempt to achieve efficiency, affordability and accessibility and lower transaction costs, these security issues create many constraints in the system. The regulatory framework used to analyze the spread of innovative IT practices in health care focuses on achieving integration and implementation of policies and procedures while subscribing to federally established requirements. Federal mandates such as HIPAA (The Health Insurance Portability and Accountability Act) adopted by Congress in 1996 continue to raise very important security and privacy concerns regarding the use of HIT. Aside from privacy concerns, the issue is of just how much has been accomplished in lowering health care transaction costs through HIPAA “remediation” process over the last decade.¹⁰ An AHIP publication cites compliance with HIPPA’s privacy and security rules as well as achieving policy integration followed by resolution of third party issues as the three top barriers to the use of health IT.¹¹

Legislative framework: Health Insurance Portability and Accountability Act (HIPPA)

Federal and state laws that govern the use and sharing of electronically transmitted information were established by the 1996 Health Insurance and Portability Act (HIPPA) and the 1999 Gramm-Leach-Bliley Act.¹² In 2000, the U.S. Department of Health and Human Services adopted comprehensive federal regulations regarding the “use and disclosure of personal health information by health care providers, health insurance plans and clearinghouses.”¹³ Later, in

¹⁰ Ahip Coverage. Nov+Dec. 06. Health Care news, views, trends, and insights. “HIPPA turns 10: High Standards.” Volume 47, No. 6, 2006.

¹¹ Ibid (10)

¹² AHIP. “Confidentiality of Medical Records.” Available online at <http://www.ahip.org/content/default.aspx?bc=39/341/317&pf=true>.

¹³ Ibid (12)

2003 HHS came out “with additional requirements dealing with security of data transmission and computer systems.”¹⁴

As stated above, Congress passed the Health Insurance Portability and Accountability Act in 1996 with the intent of creating a “simpler, more standardized system that would eventually lower health care costs; reduce errors through safe, universally accepted electronic communication of health care transactions; and eliminate paper claims.”¹⁵

*HIPPA Legislation (as cited in the definition of HIPPA rules)*¹⁶

House: 104 H.R. 3103, H. Rept. 104-469, Pt. 1, H. Rept. 104-736

Senate: 104 S. 1028, 104 S. 1698, S. Rept. 104-156

Law: Pub.L. 104-191, 110 Stat. 1936

HHS Standards for Privacy of Individually Identifiable Health Information; Final Rule: 45 CFR Parts 160 and 164; HHS Security Standards; Final Rule: 45 CFR Parts 160, 162, and 164

The national standards for electronic health care transactions and national identifiers for providers, health insurance plans and employers were established by HIPPA, Title II, the Administrative Simplification (AS) provisions.¹⁷ The AS provisions are the most significant provisions of Title II requirements. According to the definition, the AS provisions mandate the security and privacy of health data as well as define a series of offenses pertaining to health care and list criminal and civil penalties for them. Title II of HIPPA also established mechanisms that deal with potential fraud and abuse in the system. “Title II requires the Department of Health and Human Services (HHS) to draft rules aimed at increasing efficiency of the health care system by creating standards for the use and dissemination of health care information.”¹⁸ These rules apply to several entities which include health plans, health care and clearinghouses, and various health care providers that transmit electronic data. The HHS in turn developed five rules for

¹⁴ Ibid (12)

¹⁵ Ibid (10)

¹⁶ Health Insurance Portability and Accountability Act. Accessed online at http://en.wikipedia.org/wiki/Health_Insurance_Portability_and_Accountability_Act

¹⁷ Ibid (16, accessed)

¹⁸ Ibid (16, accessed)

Administrative Simplification: *the Privacy Rule, the Transactions Code Sets Rule, the Security Rule, the Unique Identifiers Rule and the Enforcement Rule* (Privacy and Security rules are explored in more detail below).¹⁹

HIPPA, Title II, The Privacy Rule – took place April 14, 2003 and “establishes regulations for use and disclosure of Protected Health Information (PHI).²⁰ PHI is any information about health status, provision of health care, or payment for health care that can be linked to an individual. It includes anything dealing with patient’s medical records and history.

HIPPA, Title II, The Security Rule - was issued on February 20, 2003 and took effect on April 21, 2003 with a compliance date of April 21, 2005 for most covered entities, followed by April 21, 2006 deadline for “small plans.”²¹ The Security Rule expands on the Privacy rule and lays out three types of security safeguards required for compliance: administrative, physical and technical. The rule identifies security standards and specification for each one of the three types identified below.

Security Rule: Administrative safeguards -are policies and procedures designed to demonstrate how an entity will comply with the act. It lays out these policies and procedures as well as contingency planning entities must adopt in addressing the use of electronic data transmission.

Security Rule: Physical safeguards – are the controls used to “protect against inappropriate access to protected data.”²² These requirements include things of such nature as monitoring access to equipment containing health information and policies dealing with access to software and hardware as well as security of facility plans and the use of maintenance records.

Security Rule: Technical Safeguards - control access to computer systems while “enabling covered entities to protect communications containing PHI transmitted electronically over open

¹⁹ Federal Register. Part III. Department of Health and Human Services. Office of the Secretary. 45 CFR Parts 160 and 164 HIPPA Administrative Simplification: Enforcement; Final Rule. February 16, 2006.

²⁰ Ibid (16, accessed)

²¹ Ibid (16, accessed)

²² Ibid (16, accessed)

networks from being intercepted by anyone other than the intended recipient.”²³ Important aspects of technical safeguards include the use of check sum, double-keying, message authentication, and digital signature use to ensure data integrity.

HIPPA Effects on research, clinical care and costs of implementation

The enactment of the above privacy and security rules has created many changes to the ways physicians and medical carriers conduct operations. After HIPPA was enacted, “complex legalities and potentially stiff penalties and the cost of its implementation” developed barriers for physicians and medical care professionals.²⁴ One effect on research showed that HIPPA privacy rule had a negative effect on the ability to “perform retrospective, chart-based research” as well as “affected the ability of researchers “to prospectively evaluate patients by contacting them for follow up.”²⁵ In clinical care, penalties for HIPPA violation “can lead physicians and medical centers to withhold information from those who may have a right to it.”²⁶ A GAO analysis cited by AHIP showed that health care providers were often unclear about legal responsibilities and “responded with an overly guarded approach to disclosing information.”²⁷

Implementation of new technologies included newly incurred costs to developing and renewing systems and practices, increase in paperwork and time to meet the legal HIPPA requirements that had a significant impact on finances of medical centers and practitioners.

Establishing privacy and security has been difficult due to an existence of a “cultural divide between payers and providers in a sense that while payers need to obtain enough information to process a claim, the providers are not willing to disclose that information because they “are hiding behind the ‘minimum necessary standard’.”²⁸ Additionally, state privacy laws

²³ Ibid (16, accessed)

²⁴ Ibid (16, accessed)

²⁵ Ibid (16, accessed)

²⁶ Ibid (16, accessed)

²⁷ Ibid (10)

²⁸ Ibid (10)

have complicated the process because of the steps needed to ensure that providers get the necessary training for understanding all the required regulations.

The process which was originally envisioned by policymakers entailed a paperless system much like the banking process where one would swipe a card and the outcome would be a simple payment authorization. However, processing insurance claims is nowhere as simplistic as banking transactions and finalizing electronic claims has encountered difficulties. Because new HIPPA standards called for system compatibility, it entailed system revamping such as software/hardware upgrades and the overall compliance of virtual private networks as well as upgrades to disks, magnetic tapes, CD's, intranets, extranets, leased lines, dial-up modems, etc.²⁹

Besides changes to files and formats, AHIP cites that there was a big reliance on claims clearinghouses which have prevented insurers from changing their internal process and “confusion over regulations with claims attachments”, combined with HHS being slow to finalize the electronic attachment rule. A “disconnect between standards for claims status and real-time processing” has made the process inflexible – an existence of a cultural gap that often exists with introduction of a new medium such as HIT.³⁰

According to AHIP, despite the barriers that HIPPA created, the impetus for paperless electronic system has been great due to the fact that without the absence of minimum standards, medical centers would not have made the investment into new technologies.³¹ Furthermore, claims processing has increased to 84 percent today. 75 percent of national claims were received electronically in 2006 compared to only 44 percent in 2002, according to AHIP survey entitled “Health Care Claims Receipt and Processing Times.”³² Standardization rules have made it easier for various insurers and health care providers to implement EDI (electronic claim processing)

²⁹ Ibid (10)

³⁰ Ibid (10)

³¹ Ibid (10)

³² Ibid (10)

because “Standardizing code sets and transactions simplifies working with multiple providers.”³³ Furthermore, according to AHIP’s report, getting clean and accurate data improves customer service and ensures fast claim processing.

Role of Telecommunication technologies in health care

As stated in the purpose paragraph section, this paper focuses on the use and adoption of emerging communication technologies that promote availability of many applications in different industries. National healthcare as an industry is experiencing a rising consumer and physician demand for the adoption of IT but due to a financial crisis experienced in healthcare today, the industry is burdened by numerous political, socio-economic and legal challenges with regards to adoption of these new technologies. It has been estimated that 14-17 percent of physicians are utilizing electronic software, but “its wider adoption has been hampered both by high costs and the lack of any sort of certification process.”³⁴

Despite barriers, significant achievements in HIT adoption have been made over the years. Emerging technologies allow innovative transformation and are known to improve quality and efficiency as well as help “transcend geographical distances.”³⁵ New information technologies are crucial because they support economic growth and promote effective and speedy communication. However, transcending geographical distances requires the availability of a crucial component that allows quick information delivery - the use of high-speed broadband internet. The adoption of wireless broadband has increased in the past five years but its penetration is not as effective because of the existing problem of digital divide. Digital divide is difficult to overcome but various tax initiatives are being undertaken by the Bush administration

³³ Ibid (10)

³⁴ Kaiser Broker briefing newsletter, “Electronic Medical Records: Meeting the Challenge of Start-up Costs and Assured Security”, Issue 2, 2006.

³⁵ Mun, S.K. and Turner, J.W. “Telemedicine: Emerging E-Medicine.” Annual Review. Biomed. Eng. 1999. 01:589-610. The copyright website retrieved February 19, 2005. GMU Libraries. Social Sciences databases. <http://mutex.gmu.edu:2123/doi/full/10.1146/annurev.bioeng.1.1.589?prevSearch=allfield%3A%28telemedicine%29>

to increase the use of wireless broadband technologies and support consumer benefits in different sectors of the economy. New legislation is believed to reduce "the regulatory burdens that discourage broadband investment, and promoting facilities-based competition among broadband providers, such as cable, wire-line, wireless, satellite and power line."³⁶ This in turn will help to overcome problems in electronic connectivity throughout the healthcare industry and promote the adoption on new technologies in order to increase operational efficiency and raise quality of healthcare delivery.

HIT Defined

According to the American Medical Association (AMA) "Health Information Technology is a term that encompasses a broad range of software applications and the supporting hardware and devices used to support clinical decision making and business processes. Health Information Technology is the software and infrastructure used in the clinical practice of medicine to support the collection, storage and exchange of patient data."³⁷

Examples of HIT (as listed by AMA) include:

Electronic Medical Records (EMRs), ePrescribing systems (eRx), Computerized Physician Order Entry (CPOE), Practice Management Systems (PMS), Picture Archiving & Communication System (PACS) and Personal Health Record (PHR). The terms most frequently used in HIT are EMR's and HER's.

Healthcare is experiencing transformation through innovative technological integration. Major E-health initiatives are taking place in various segments of medical practice. As mentioned before, critical challenges are facing the U.S. healthcare today. Adoption of

³⁶United Press International. July 29, 2004. "Outside View: Bush's broadband economy." Lexis-Nexis. Available online at: continued
[\[http://mutex.gmu.edu:2056/universe/document?_m=b2a5a37ad5f9312a10be4ff188869778&_docnum=25&wchp=dGLbVzz-zSkVb&_md5=ef08e468147df3098d859697537df811\]](http://mutex.gmu.edu:2056/universe/document?_m=b2a5a37ad5f9312a10be4ff188869778&_docnum=25&wchp=dGLbVzz-zSkVb&_md5=ef08e468147df3098d859697537df811)

³⁷ American Medical Association (AMA). "What is Health Information Technology?" Accessed online at <http://www.ama-assn.org/ama/pub/category/print/16684.html>.

information technologies is seen as a way to overcome some of the challenges listed below. As our population ages, the use of healthcare services is increasing while creating resource scarcity in an environment burdened by financial deficits. It is believed that by year 2030 “one in five Americans will be over 65 years of age, consuming a larger portion of our healthcare resources.”³⁸ⁱ Some of the major problems cited by experts include: healthcare costs, inflation within the industry, dissatisfied medical professionals leaving the industry which creates personnel shortages, malpractice costs, lack of healthcare coverage and “rising insurance premiums”.³⁹

According to a report by Mun, K. and Turner, J.W. (1999), the financial crisis experienced by the healthcare system is caused by factors that include “shrinking incomes, as well as the inability to cut the cost of patient care throughout the industry.”⁴⁰ Other factors include the inability of insurance companies and healthcare providers to cover these costs while running up large financial deficits. According to Mun’s analysis, healthcare organizations seek ways to establish new physician payment systems and thus looking for new ways to improve their operations.

Information technologies facilitate solutions that help manage the healthcare industry by increasing “operational efficiency” and reducing costs associated with healthcare delivery while bridging the digital divide that exists between urban and rural communities.⁴¹ Although, they are seen as a great step towards improving quality and efficiency of healthcare, the adoption process has been rather slow. Barriers exist with regards to the spread of new communication technologies. Some of the most common barriers cited are that the industry as a whole lacks

³⁸ CAPITOL HILL HEARING TESTIMONY. June 17, 2004. Lexis-Nexis. Available online at: [\[http://mutex.gmu.edu:2056/universe/document?_m=fbc5eadf00de0e947a4a1e7385aaeee&_docnum=3&wchp=dGLbVzz-zSkVb&_md5=c288d49da28daba3a7dced4489e62aee\]](http://mutex.gmu.edu:2056/universe/document?_m=fbc5eadf00de0e947a4a1e7385aaeee&_docnum=3&wchp=dGLbVzz-zSkVb&_md5=c288d49da28daba3a7dced4489e62aee)

³⁹ Ibid (36)

⁴⁰ Ibid (33)

⁴¹ Ibid (33)

“interoperability and data standards”, lack of funding and organizational challenges.⁴² Physicians in different areas require ability to access medical records fast and efficiently at the point of care but studies show this practice does not utilize electronic uses as much as possible because of fragmentation in the use of IT applications. Accessing medical records in the safest possible way requires electronic connectivity and system integration. Lack of funding discourages the adoption of new communication technologies by the health industry. Organizational challenges require both the public and the private sector to step in at the federal and state levels to improve the process of IT implementation in healthcare. At the private sector level all the key stakeholders have played a significant role in IT implementation in healthcare: physicians, hospitals, IT manufacturers and suppliers of medical equipment and health agencies alike.

(V) METHODOLOGY

Technological Application in healthcare: E-health and Telemedicine; Other E-Health Initiatives

The methodology portion of this paper provides a description of some of the uses of innovative technologies such as the advancement of telemedicine and various E-Health initiatives that are taking place in healthcare today.

The following summary includes various advances in the use of IT in health care demonstrated by an AHIP report entitled “Innovations in Health Information Technology: Effective New Solutions from America’s Health Insurance Plans.” AHIP is a leading trade association representing 1300 members that provide healthcare services to millions of Americans. Below are some of the examples of IT applications in healthcare, as listed by the AHIP report.

⁴² Ibid (33)

Various states have made advancements in the use and implementation of HIT:

- A Florida health insurance plan established an electronic intensive care unit (e-ICU) program in three participating hospitals that experienced shortage of critical care physicians. “The advanced technology system allows specially trained critical care physicians and nurses to monitor ICU patients’ physiological changes on a 24/7 basis from a remote location. The system alerts onsite medical teams of potentially detrimental changes so they can intervene immediately to avert crises. In its first year of operations, the program saved lives, fewer ICU patients experienced cardiopulmonary arrest, and the risk of mortality among ICU patients fell.”⁴³
- Three health insurance plans in Massachusetts have collaborated to start the e-prescribing technology by physicians in the state. With the help of a handheld device, physicians are able to access patient’s medication histories, check for potentially harmful drug allergies and adverse interactions, and renew prescriptions electronically.⁴⁴
- Another health insurance plan in Utah created a website that allows “one-stop shopping for managing health savings account (HSA) balance and tracking health insurance claims online.”⁴⁵ Members can safely track their contributions to HSA’s and download monthly statements as well as use their debit HSA cards.
- A Nevada health insurance plan established a digital radiology program that captures X-rays in digital format rather than on film and makes them immediately available for its medical group’s doctors to review and evaluate. “X-ray images are accompanied by radiologist’s notes, which are transcribed electronically with a voice recognition system and stored in

⁴³ AHIP. Center for Policy and Research. “Innovations in Health Information Technology.” November 2005. Available online at <http://www.ahip.org>.

⁴⁴ Ibid (41)

⁴⁵ Ibid (41)

Word documents for easy viewing.”⁴⁶ Physicians are able to access X-rays along with radiology assessments within hours of making the request which improves their ability to make “timely and informed treatment decisions.”⁴⁷

- IT initiatives include recent developments in the use of Personal Health Records (PHR’s) mentioned in the earlier section of this paper. An individual today may receive care from a number of different providers in multiple locations, and for most consumers no system is in place to coordinate and summarize the information from different providers. PHR’s are used to aggregate an individual’s personal health history into a permanent record. Health Insurance Plans are developing a wide variety of PHR’s and other forms of electronic health records. Health insurance plans in different states (Washington State, New York and Tennessee) have created systems of interactive technologies that allow members to log in into a website and view their medical records and immunization histories, consult with doctors via e-mail, renew prescriptions, schedule appointments, obtain lab results, and access a searchable drug reference library.⁴⁸

- **The use of Telemedicine**

Wireless broadband technologies facilitate the use of many new applications, and enhance other previously existing applications beyond their dial-up capacities.⁴⁹ One such application includes *telemedicine*. The digital global network has facilitated major developments in the medical industry over the past three decades by advancing “diagnosis, treatment and prevention of illnesses.”⁵⁰ Technological advancement and continuous government regulation

⁴⁶ Ibid (41)

⁴⁷ Ibid (41)

⁴⁸ Ibid (41)

⁴⁹ United Press International. July 29, 2004. “Outside View: Bush's broadband economy.” Lexis-Nexis. Available online at:

[\[http://mutex.gmu.edu:2056/universe/document?_m=b2a5a37ad5f9312a10be4ff188869778&_docnum=25&wchp=dGLbVzz-zSkVb&_md5=ef08e468147df3098d859697537df811\]](http://mutex.gmu.edu:2056/universe/document?_m=b2a5a37ad5f9312a10be4ff188869778&_docnum=25&wchp=dGLbVzz-zSkVb&_md5=ef08e468147df3098d859697537df811)

⁵⁰ Bashshur, R. L. et al. “Telemedicine: A New Healthcare Delivery System”. Annual Review. Public Health. 2000. 21:613-37. GMU Libraries. Social Sciences Database. The copyright website retrieved on February 19, 2005.

and support for telemedicine produce opportunities for many sectors of the economy including advancement for “engineers, scientists, care providers, payers, and policy makers”⁵¹. The most common definition offered by Mun *et al.* as well as the American Medical Association: “Telemedicine can be broadly defined as the use of telecommunications technologies to facilitate the delivery of healthcare at a distance...via telecommunications and interactive video technology. This definition includes the integration of a wide range of technologies and applications”.^{52 53}

According to Bashur R. *et al.* (2000), the origin and evolution of telemedicine just as any other complex technology is difficult to trace but it goes as far back as the beginning of telephone use.⁵⁴ The first application involving telemedicine use was “the National Aeronautics and Space Administration’s (NASA) manned space flight program and the development of sophisticated technologies for biomedical telemetry, remote sensing, and communication in space.”⁵⁵ Its second application formed from telecommunications development in the private sector. The early systems used by NASA in the manned space program were utilized to monitor vital functions of astronauts in space. Specifically, telemedicine was used to monitor heart rate, blood pressure, respiration rate and temperature during space flight. These early applications led to a development of more complex tasks that could be performed via telecommunications technology such as diagnosing medical emergencies and establishing biomedical experimentations on orbital stations.

[\[http://mutex.gmu.edu:2123/doi/abs/10.1146/annurev.publhealth.21.1.613?prevSearch=allfield%3A%28telemedicine%29\]](http://mutex.gmu.edu:2123/doi/abs/10.1146/annurev.publhealth.21.1.613?prevSearch=allfield%3A%28telemedicine%29)

⁵¹ Ibid (36)

⁵² Ibid (33)

⁵³ Journal of Drugs in Dermatology, Jan-Feb. 2005. V4:i1, p102-104. “Telemedicine Legal Update 2004: reimbursement, the doctor-patient relationship, teleconsultations, and the legal status of digital images.” GMU Libraries. Infotrac databases. The copyright website retrieved on February 19, 2005.

⁵⁴ Bashshur, R. L. et al. “Telemedicine: A New Healthcare Delivery System”. Annual Review. Public Health. 2000. 21:613-37. GMU Libraries. Social Sciences Database. The copyright website retrieved on February 19, 2005.

[\[http://mutex.gmu.edu:2123/doi/abs/10.1146/annurev.publhealth.21.1.613?prevSearch=allfield%3A%28telemedicine%29\]](http://mutex.gmu.edu:2123/doi/abs/10.1146/annurev.publhealth.21.1.613?prevSearch=allfield%3A%28telemedicine%29)

⁵⁵ Ibid (52)

Telemedicine did not just originate from the space program, however. In the last forty years telemedicine has been practiced by many different medical sectors. It was first used by psychiatrists in the late 1950's and practiced by dermatologists in the 1960's by connecting interactive black and white television that linked Boston's Logan Airport traveler's clinic with a university dermatology department. In the 1990's it became widely practiced by thousands of radiologists. In 2003 various reports estimated that there were 62 active teledermatology programs in the U.S. as well as well as numerous others practicing internationally.ⁱⁱ Mention should be given that the first generation of telemedicine programs in the U.S. ended abruptly due to lack of government funding, as well as due to the fact that technology was expensive and unreliable.⁵⁶ The development of telemedicine picked up in the 1990's because of the expansion of information and telecommunication systems.

- **Examples of Telemedicine Use**

According to the Journal of Drugs in Dermatology, "the largest user of telemedicine services is the United States military, a payer exempt from state and federal regulation."⁵⁷ There are many other health care systems that utilize telemedicine extensively in prisons, on ships and in rural areas. The business of telemedicine is experiencing continuous support from government funding. It is estimated that \$275 million per year are spent on support for demonstration projects. This is exclusive of what the government spends on its Medicaid reimbursement and direct services provisions. The Medicare Prescription Drug, Improvement and Modernization Act of 2003 fueled funding for "certain rural telemedicine projects from \$30 million to \$60 million."⁵⁸ Estimates performed by MedMarket Dilligence show that there were 169 million telemedicine care visits and "telemedicine information exchanges between a practitioner and

⁵⁶ Ibid (52)

⁵⁷ Ibid (51)

⁵⁸ Ibid (51)

patient that resulted in 6.28 billion.”⁵⁹ Federal policies promoting and supporting the development of the National Information Infrastructure (NII) have produced additional support for development of the telemedicine field. Currently, every state has a telemedicine program.⁶⁰ Current applications in telemedicine include and not limited to: teleradiology (as the most mature telemedicine application), teleoncology, teledermatology, telesychiatry, telemedicine for neurosurgery patient management, telemedicine for hemodialysis and diabetes.

- **Key issues and challenges in the application of telemedicine**

Different healthcare sectors demand the application of telemedicine in a variety of ways and therefore produce different challenges. Some of the key issues addressed in the practice of telemedicine through the discourse of national debate by law and policy makers include “limited access to care for certain segments in the population, escalating cost, and uneven quality of care.”⁶¹ The three key challenges in the application of telemedicine include: cost, quality and accessibility. The following are some of the concerns that arise in telehealth: patients would like to see an improvement in the quality of healthcare by increasing access to medical specialists; hospitals and other healthcare providers want to see telemedicine as a tool to reduce the cost of care; and physician providers would like to see telemedicine as a way to increase wealth. The role of telemedicine is not yet clearly defined because it encompasses a network of operations amongst numerous users and utilizes the use of unfamiliar technologies that may produce conflicting outcomes (unforeseen and delayed circumstances).

⁵⁹ Ibid (51)

⁶⁰ Ibid (52)

⁶¹ Ibid (52)

- **Cost, Quality and Accessibility as three leading factors that influence successful HIT implementation**

Cost

Cost is perceived on two levels with regards to the use of HIT. Because of the rapid expansion of information technology and a variety of programs in use, it is difficult to estimate the true costs associated with implementation and program operation. Additionally, according to AMA, it is difficult “for physicians to reconcile the increased cost of health care nationally with their reduced (or flat) reimbursement rates from payors like Medicare.”⁶²

There appears to be little cost information coming from research.⁶³ Financial uncertainties of this kind make it difficult for legislation to be passed that establishes a permanent role of telemedicine in healthcare. Other costs deal with the reimbursement for telemedicine and other HIT services. Medicaid programs provide some forms of reimbursement to telemedicine services but they base their decisions for payment policies largely on financial costs involved and benefits provided.

Quality

Conceptually, quality is a multidimensional issue that has not received a lot of definition in telemedicine and in the use of telehealth in general.⁶⁴ According to AMA, nearly 100,000 deaths occur each year as a result of medical records. These events are perceived to be avoidable with the establishment of more effective and accessible clinical documentation systems.

To this date, research shows there is a high rate of satisfaction in telemedicine with both providers and clients. However, according to Bashshur *et al.*, “the quality of research itself has been severely constrained by inadequate research designs, samples, measurement, and

⁶² Ibid (35)

⁶³ Ibid (52)

⁶⁴ Ibid (52)

analysis”.⁶⁵ Bashshur identifies several measures of quality: “Quality may be measured in terms of structural, process, and outcome indicators”.⁶⁶ The report indicates that health outcomes are emphasized strongly. They serve as a basis for policy determination and program support. The two aspects of quality referred to in this report are technical and interpersonal. According to the study, “the latter refers to caring, as well as client and provider satisfaction with care, whereas the former refers to the process and outcome of care.”⁶⁷ Again, a lot of research to date concentrates mostly on the interpersonal quality of telemedicine services. Some findings demonstrate the following: “There have been no strong indications of feelings of discomfort, concerns about potential breach of confidentiality, or the impersonality of the medium on the part of patients, as was feared.”⁶⁸

Research on the structural aspect of quality has not yet assumed a consistent pattern despite a lot of support in the field of telemedicine that suggests that “innovative information technology, remote sensing, and computers can be used effectively to extend the productive capacity and distributive efficiency of available health care resources.”⁶⁹ There is strong conclusive evidence on the matter that shows the following: “(a) telemedicine delivers adequate information for a majority of categorical clinical and diagnostic procedures, and (b) specific instances of failure in diagnostic accuracy were fully attributable to the specific technology that was used, such as the lack of color in dermatological images.”⁷⁰

Accessibility

Accessibility remains to be a critical concept to the practice of telemedicine. Accessibility can be assessed based on the scarcity of distribution of available resources that are

⁶⁵ Ibid (52)

⁶⁶ Ibid (52)

⁶⁷ Ibid (52)

⁶⁸ Ibid (52)

⁶⁹ Ibid (52)

⁷⁰ Ibid (52)

measured based on need of a certain segment of population as well as the willingness of providers to deliver services.⁷¹

According to Bashshur's analysis "access refers to an individual's (or a group's) ability to obtain needed services."⁷² As such accessibility is not only measured by geographic factors, but it pertains to "financial, social, cultural, and psychological dimensions."⁷³

- **Analytical Framework used to evaluate HIT implementation: Economic, Legislative, Cultural, Organizational**

As previously mentioned, analytical framework that may be used to determine policy initiatives with regards to telehealth and HIT consists of economic (costs vs. benefits analysis), legislative (regulation, court law), cultural (emerging environments) and organizational components that work interchangeably. According to the 2004 Congressional testimony, "Under the current healthcare system, benefits related to the gains in quality, safety, and efficiency are spread across all stakeholders while the real costs are borne by only a few."⁷⁴

Some key issues that are frequently raised in national policy debates with regards to telehealth include: doctor-patient relationship; medical malpractice; cross-border and cross-state licensure, standards and reimbursement for telemedicine services. The development of complex innovative technologies is reshaping cultural, social and organizational dimensions of the traditional practices of medicine. There are attributes within the complex organizational networks such as HIT that are commonly referred to as "human elements."⁷⁵

Telemedicine for one, redefines traditional medical settings and traditional doctor-patient relationships but it cannot take out the human element completely. Not only there is no longer a one-on-one doctor-physician relationship, other mediums are introduced into the setting: "rather

⁷¹ Ibid (52)

⁷² Ibid (52)

⁷³ Ibid (52)

⁷⁴ Ibid (35)

⁷⁵ Ibid (52)

than a one-on-one relationship with a physician, the patient now encounters (most frequently) a local provider, with whom there is direct personal contact, and a remote provider, with whom there may be only electronic or virtual contact. In addition, in the majority of instances as currently configured, the telemedicine clinical visit often involves technicians who assist in operating the telecommunications equipment, computers and peripheral devices, as well as other auxiliary medical personnel. The essential nature of the (usually) specialist physician-patient encounter is changed from one of human to one of electronic contact and information exchange.”⁷⁶

- **Technical progress: creation of virtual regions**

Organizationally, telemedicine and other HIT applications are part of an emerging environment that provides challenges to the traditional regional healthcare systems, according to Bashshur et al study.⁷⁷ Telemedicine alone has a tremendous potential of serving as a multitude of electronically connected networks that will redefine the hierarchy of “primary, secondary and tertiary-care providers” in healthcare.⁷⁸ These networks begin to function in ways that redefine modern day communication systems because due to technical progress they act as self-sustained systems that are increasingly difficult to regulate and monitor.

(VI) CONCLUSION

The primary goal of the healthcare industry is to deliver quality services to the population while promoting cost-effectiveness and efficiency. Information technology has become a sophisticated force in the development of healthcare and clinical practice which utilizes “advanced computing and telematics for the exchange of medical information” as well as uses

⁷⁶ Ibid (52)

⁷⁷ Ibid (52)

⁷⁸ Ibid (52)

“advanced data acquisition, transmission and storage.”⁷⁹ The technical and organizational complexities involved in the use of HIT make it an exceptionally innovative environment that is still in the state of flux and development.

The common consensus is that “the capabilities of the equipment must be such that the information transmitted is at least as complete as and equal in quality to the information transmitted in the traditional setting.”⁸⁰ The acceptance of HIT is a continuous process that requires “awareness, interest, evaluation, trial, and adoption/rejection.”⁸¹

It is evident from the above analysis that even though the use of HIT has evolved over the last decade there are still unanswered questions due to a complex nature of adoption of its practices and regulatory issues that exist in the marketplace. Public and private initiatives that have been undertaken focus on reducing barriers to adoption of innovative technologies in healthcare. However, until standardization takes full effect and the full value of HIT can be realized, barriers such as privacy safeguards will continue to exist until information can be so easily exchanged that it defies geographic distances in the practice of modern day medicine. For now, the paperless society as we know it today remains somewhat out of reach.

⁷⁹ Ibid (52)

⁸⁰ Ibid (52)

⁸¹ Ibid (52)

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APPENDIX I (Beneficiaries and Expenditure in Major Health Care Programs)

Table 1: Beneficiaries and Expenditures in Major Federal Health Care Programs for Fiscal Year 2004

Federal agency	Program	Beneficiaries	Expenditure (in billions)
HHS	Medicare	42 million elderly and disabled beneficiaries	\$309
HHS	Medicaid	43.7 million low-income persons	276.8 (joint federal and state)
HHS	State Children's Health Insurance Program	5.8 million children ^a	6.6 (joint federal and state)
HHS	Indian Health Service	1.8 million Native Americans and Alaska Natives	3.7
Veterans Affairs	Veterans Health Administration	5.2 million veterans	26.8
Department of Defense	Tricare Program	8.3 million active-duty military personnel and their families, and military retirees	30.4
Office of Personnel Management	Federal Employees Health Benefit Program	8 million federal employees, retirees, and dependents	27

Source: HHS, VA, DOD, and OPM budget documents.

^aBased on fiscal year 2003 data.

APPENDIX II (HIT Contracts Awarded by HHS’s Office of the National Coordinator)

described in table 2.

Contract	Date awarded	Duration	Cost (in millions)	Description
American Health Information Community Program Support	September 2005	1 year	\$0.8	To provide assistance to the National Coordinator in convening and managing the meetings and activities of the community to ensure that the health IT plan is seamlessly coordinated.
Standards Harmonization Process for Health IT	September 2005	1 year	3.2	To develop and test a process for identifying, assessing, endorsing, and maintaining a set of standards required for interoperable health information exchange.
Compliance Certification Process for Health IT	September 2005	1 year	2.7	To develop and evaluate a compliance certification process for health IT, including the infrastructure components through which these systems interoperate.
Privacy and Security ^a	September 2005	1½ years	17.5 (Increased by \$6 million in August 2006 to include additional studies)	To assess and develop plans to address variations in organization-level business policies and state laws that affect privacy and security practices that may pose challenges to an interoperable health information exchange.
Nationwide Health Information Network Prototypes	November 2005	1 year	18.6 (4 contracts)	To develop and evaluate prototypes for a nationwide health information network architecture to maximize the use of existing resources such as the Internet to achieve widespread interoperability among software applications, particularly electronic health records. These contracts are also intended to spur technical innovation for nationwide electronic sharing of health information in patient care and public health settings.
Measuring the Adoption of Electronic Health Records	September 2005	2 years	1.8	To develop a methodology to better characterize and measure the state of electronic health records adoption and determine the effectiveness of policies aimed at accelerating adoption of electronic health records and interoperability.
Gulf Coast Electronic Digital Health Recovery	September 2005	1 year	3.7	To plan and promote the widespread use of electronic health records and digital health information recovery in the Gulf Coast regions affected by hurricanes last year.

Source: HHS Office of the National Coordinator for Health Information Technology.

^aJointly managed by the Agency for Healthcare Research and Quality and the Office of the National Coordinator.

APPENDIX II (Cont.)

Table 3: Office of the National Coordinator's Goals and Initial Objectives and Strategies

Goals	Objectives	High-level strategies
Goal 1: Inform health care professionals	High-value electronic health records	Simplify health information access and communication among clinicians ^a Increase incentives for clinicians to use electronic health records ^a
	Low-cost and low-risk electronic health records	Foster economic collaboration for electronic health records adoption ^a Lower total cost of electronic health records purchase and implementation ^a Lower risk of electronic health records adoption ^a
	Current clinical knowledge	Increase investment in sources of evidence-based knowledge ^c Increase investment in tools that can access and integrate evidence based knowledge in the clinical setting ^c Establish mechanisms which will allow clinicians to empirically access information and other patient characteristics that can better inform their clinical decisions ^c
	Equitable adoption of electronic health records	Ensure low-cost electronic health records for clinicians in underserved areas Support adoption and implementation by disadvantaged providers ^c
Goal 2: Interconnect health care	Widespread adoption of standards	Establish well-defined health information standards ^a Ensure federal agency compliance with health information standards ^a Exercise federal leadership in health information standards adoption ^a
	Sustainable electronic health information exchange	Stimulate private investment to develop the capability for efficient sharing of health information ^a Use government payers and purchasers to foster interoperable electronic health information exchange ^c Adapt federal agency health data collection and delivery to NHIN solutions ^c Support state and local governments and organizations to foster electronic health information exchange ^a
	Consumer privacy and risk protections	Support the development and implementation of appropriate privacy and security policies, practices, and standards for electronic health information exchange Develop and support policies to protect against discrimination from health information ^c
Goal 3: Personalize health management	Consumer use of personal health information	Establish value of personal health records, including consumer trust ^a Expand access to personal health management information and tools ^a
	Remote monitoring and communications	Promote adoption of remote monitoring technology for communication between providers and patients ^a
	Care based on culture and traits	Promote consumer understanding and provider use of personal genomics for prevention and treatment of hereditary conditions ^a

Goals	Objectives	High-level strategies
Goal 4: Improve population health	Automated public health and safety monitoring and management	Promote multi-cultural information support ^a Enable simultaneous flow of clinical care data to and among local, state, and federal biosurveillance programs Ensure that the nationwide health information network supports population health reporting and management ^c
		Efficient collection of quality information
	Transformation of clinical research	
	Health information support in disasters and crises	Foster the availability of field electronic health records to clinicians responding to disasters ^a Improve coordination of health information flow during disasters and crises ^c Support management of health emergencies ^c

Source: HHS Office of the National Coordinator for Health IT

APPENDIX III (Emerging Innovative Technologies)

Technology/ Manufacturer	Indication(s)	Target Population	Comments
Tarceva™ (erlotinib HCl) OSI Pharmaceuticals (in alliance with Genentech & Roche)	Oral once-a-day drug designed to specifically inhibit the activity of the epidermal growth factor receptor (HER1/EGFR) protein.	Individuals with non-small cell lung cancer.	Phase III trials are currently underway and the results are expected to be announced at the 2004 annual meeting of the American Society of Clinical Oncology. Filing with the FDA is expected later this year
Artificial Spinal Discs Lumbar Spine Charite™ DePuy Spine/Johnson & Johnson ProDisc® Spine Solutions/Synthes Maverick™ Medtronic Sofamor Danek Flexicore™ SpineCore Cervical Spine Bryan® Medtronic Sofamor Danek Prestige™ Medtronic Sofamor Danek	Alternative to traditional spinal fusion surgery. Designed to replace diseased discs in order to maintain or restore spine flexibility.	Individuals with single or multiple level cervical or lumbar disc disease.	FDA approved clinical trials in various stages are currently underway. Manufacturer of the Charite disc submitted premarket approval application to FDA in 1 st q 2004. On June 2 nd , the FDA Advisory Panel will make recommendations and vote on this PMA. Manufacturer of Prodisc is expected to seek FDA approval in 2004.

Technology/ Manufacturer	Indication(s)	Target Population	Comments
Autologous Myoblast Transplantation GenVec Inc.	Transplantation of replicated skeletal muscle cells into and around ischemic myocardium to regenerate heart muscle and improved cardiac function.	Individuals with a history of myocardial infarction or heart failure.	Recently completed FDA- approved second phase I study. Additional studies are underway.
Anthrax rPA Vaccine Avecia Inc VaxGen Inc Avant Immunotherapeutics	Recombinant protective antigen (rPA) vaccine intended to provide immunity to inhalation anthrax in 3 or fewer doses and to offer protection from anthrax spores even if given shortly after exposure.	Potentially all individuals.	Phase I/II studies are underway.

Kaiser Permanente has taken an active role in the adoption of health electronic records (EMR) by “introducing an integrated medical record system that automates medical and patient information and places it at the fingertips of medical professionals.” (Kaiser Broker briefing, Issue 2, 2006)

NOTE: Confidential Document – Not for distribution

“Member Access to KP HealthConnect Online Overview and Frequently Asked Questions”

Overview

KP.org enables Kaiser Permanente to provide high-quality, affordable health care by using the World Wide Web to conveniently and efficiently connect members and purchasers to Kaiser Permanente people and systems. The web site offers:

- Members access to information and services,
- Prospective members a way to learn about and apply for coverage,
- Employers a convenient way to manage their accounts and communicate with their account representatives, and
- All users the opportunity to take advantage of the breadth and depth of Kaiser Permanente medical knowledge.

Today, KP.org offers our members meaningful and convenient features such as online access to our health encyclopedia, drug encyclopedia, health classes, medical staff and facility directory, online prescription refill service, and the ability to request routine appointments.

This functionality will allow members to access portions of their KP HealthConnect clinical record, contact their primary care provider’s office online, and view information about their coverage and benefits. Generally, new features include:

- Your Allergies
- Your Immunizations
- Your Lab Results
- Your Ongoing Health Conditions
- Past Office Visit Information
- E-mail Your Doctor **
- Your Healthcare Reminders
- Your Future Appointments
- Your Eligibility & Benefits
- Request to Update Your Medical Record
- Your Medications

*****Please Note: This is not a traditional e-mail feature. The e-mail feature will allow members to send a secure message to a physician and then, through KP.org access, view the response from his or her physician.***

These above features will be seamlessly integrated into KP.org, enhancing member access to their personal health information. In addition, much of this information will be automatically linked to Kaiser Permanente's online health encyclopedia that will provide members with up-to-date and easy-to-read information about their on-going health conditions, lab test results, allergies, and immunizations, etc.

What features will Mid-Atlantic members be able to access?

Initially, Mid-Atlantic members will be able to access:

- Your Immunizations
- Your Lab Results
- Your Ongoing Health Conditions
- Past Office Visit Information
- E-mail Your Doctor**
- Your Future Appointments
- Request to Update Your Medical Record

They will eventually have access to all of the features listed in the “**Overview**” section on Page 1.

*****Please See Note Above***

When will these new online features be available to members?

Mid-Atlantic members will have access to the online features starting in September 2006. Each region has established their own schedule and sequence for rollout of all of these online features.

Can any member use these features?

Once a feature is launched region wide, adult members in the region who are registered on KP.org may use the feature. The MAS has decided that teens will be able to send secure emails to their providers.

Why is Kaiser Permanente doing this?

Members often request access to their health information and specifically request many of the features we are now making available through KP.org. Making this information easily accessible online will help build member allegiance. In addition, providing members access to their health information, linking them to current health education information, and giving them a secure means of contacting their providers will help to make them full partners in their health care.

Why are regions rolling out these features on different schedules?

There are many technical, data, and operations-driven dependencies to launching these new features on KP.org. Many online features require the ability to access the data within KP HealthConnect. Releasing the online functionality requires that regions have implemented the corresponding KP HealthConnect Clinicals and Practice Management applications. For example, it is not possible to implement Your Allergies if a corresponding record is not available in KP HealthConnect Clinicals. While timing will differ, ultimately all regions will have all of these new features available for their members.

Is a member's medical data secure?

Our member Web site has security measures in place to help protect against the loss, misuse, or alteration of information. It is important to note that both KP.org and KP HealthConnect are fully-HIPAA compliant and adhere to all state and federal privacy and security regulations.

How can a member register to access this information?

Members must be registered on KP.org to access the secure features and their personal information online. To register, members can follow the simple registration process on KP.org. Within three to seven days after registering, they will receive a temporary password via U.S. mail giving them access to their secure information online. The first time the member enters this temporary password, the site will prompt him or her to change it to one of their own choosing. This password must be used each and every time they sign on to KP.org.

What happens if a member loses or forgets his or her password?

Members should provide their medical record number and birth date, they will then see their password “hint,” if they chose one when initially registering. If the member still doesn’t remember their password, they can request a new password, which will reach them in three to seven days. Or, if the member answered three “secret questions” for their password during the initial registration, or they can call 1-800-556-7677 from 7 am to 7 pm Pacific Standard Time, answer the same questions, and get a new password immediately over the phone.

What is the source of the medical and health plan information members view online?

Member medical and health plan information online is pulled directly from KP HealthConnect. Members will have access to the same up-to-date information that our staff, physicians, and clinicians use. No new records are being created for online use. Secure messages between patient and health care team are saved in the patient’s medical record.

If the patient will be viewing their chart, will providers need to censor what they write?

When charting, it is a good idea to keep in mind that patients will now be able to easily view portions of their medical record online. At this time, there are no plans for provider notes or internal staff messages to be viewable online. However, the medical chart belongs to the patient. They can request access at any time whether it is electronic or within a paper chart.

How and when will providers and staff get trained to use the new features?

Training for providers and relevant staff is currently being developed. A detailed training plan will be communicated soon.

Can I see a demo of the new online features?

Yes, a video demo has been created to provide an overview of all available online features. To view the demo online go to:

<http://kpnet.kp.org/kphealthconnect/readiness/toolkits/video/messaging.htm>

For more information about the implementation of KP HealthConnect Online or the workgroups, please contact Joanna Lipsitz at joanna.r.lipsitz@kp.org or Mark Snyder, MD at mark.h.snyder@kp.org.