Managing Your Medical Data
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EDITOR’S SUMMARY
The burgeoning use of electronic health records and databases to collect personal medical information starts with trust that the information will be kept confidential and used to improve medical knowledge and care. With decades of patient information, the Veterans Administration (VA) has been at the forefront of adopting online health informatics tools and working to develop patient trust, support and engagement. Using the VA’s My HealtheVet online health tool, registered patients can access, review and update their online health records and interact with care providers in real time for telemedicine and secure messaging. Additional support is provided through the links and connections that enable vets to participate in a community of practice geared toward healthcare data management. The interactive social technology of Web 2.0 enables the collection of stores of personal medical data, but the program depends on patients’ active participation in their health knowledge management.

Establishing Trust
The first requirement for the veterans’ online healthcare providers or any provider [4] is to establish trust in informatics tools and web-based data storage of personal information among veterans who are patients. A professional, job-based familiarity with government bureaucracy for service persons might seem to make the task easier, but maintaining that culture of trust is evidently a concern in introducing veterans to the My HealtheVet program and tools. Moreover, standard correspondence from the government introducing veterans to any health services and announcing changes or enhancements to their services includes web links to educate veterans and email or electronic copies of statements about legislative initiatives or policies. In this case, for instance,
the site provides orientation in the form of a virtual online tour (available under the “Help” tab on the My HealthVet home page) [5].

In addition, when gradually rolling out a new online health tool, such as My HealthVet, the Veterans Administration (VA) has typically provided in-person contact with representatives to answer any questions or concerns. This person-to-person connection allows users to use and gain confidence in the online service tool and/or resources. It has been a supportive communication approach to the transition from paper to electronic health records for veteran patients with representatives available to answer questions and respond to concerns.

Steps for Establishing Online Health Knowledge Base

For the My HealthVet system, veterans must first register by creating a My eHealth user profile [6]. The profile requires basic information and actions:

1. Provide basic identifying information
2. Identify relationship to the VA
3. Describe donor information
4. Provide primary healthcare information
5. Provide contact information
6. Respond to request for health awareness information
7. Set up unique ID and password (with answers to password hint questions)
8. Accept the Terms and Agreements and Privacy Policy

Once registration on My HealthVet has been accomplished, patients have various health online services available and are able to use specific components of VA health care. For example, a registered patient can view current emergency contact information, and his or her personal profile can be edited or updated as required. In addition, veterans can easily download their personal health data and information.

To maintain services and manage their health knowledge, users need to review and update their online health record identities. In other words, they must maintain their My HealthVet accounts by making password revisions as required, retaining in-person authentications as needed, and keeping the accounts active. The web portal requires personal authentication to allow use of enhanced features that support online viewing of electronic medical records. Actual account holders can view and work with their information after logging in.

The most popular resource available in the My HealthVet system concerns prescription medicines. Participants can use a prescription refill feature (the service used most often by most veterans) and keep track of data on all refills, medication history including overlapping and changing medications, information on medicine and herbal supplement interactions and a database list of VA medications.

Authentication Process

The process of in-person authentication (IPA) allows participants to access enhanced functionality via their My HealthVet account with an underlying objective of maintaining a high level of security for the online medical information. This functionality is used for routine, non-life threatening communication. IPA requires patients to physically visit a My HealthVet representative at any designated veteran healthcare facility. Representative confirm that the participants are registered as VA patients in My HealthVet and that they have viewed the online My HealthVet Orientation Video at www.myhealth.va.gov. Participants who have not viewed the orientation video will be given the opportunity to do so prior to beginning the IPA process. Participants must orally state full names, social security numbers and birth dates. Representatives access the patients’ online records and verify information on screen with government-issued photo IDs provided by the participants. Participants are then given the VA’s Release of Information Form (Form # 10-5345a-MHV) to complete and sign. My HealthVet representatives confirm that the IPA process has succeeded and informs participants that advanced functionality will be available within 12 hours. Once the IPA process is in effect, participants will no longer be able to make changes to the following fields in their account: first name, last name, date of birth, Social Security Number and relationship to patient.

Secure Messaging

The latest My HealthVet feature is a secure messaging system that supports telemedicine and interactive, online communications in real time.
The messaging system is designed to provide patients with a means of viewing current medical records online, communicating with a primary care health team, requesting a medication renewal and updating address information. This feature is being rolled out in phases throughout 2011. A network security authentication process is mandatory for veterans to use this feature.

Setting Up and Using Secure Messaging. The following steps are required to set up and use secure messaging:
1. Member login with User ID and password
2. Select the SECURE MESSAGING tab
3. Click the orange Open Secure Messaging button
4. Read the Terms and Conditions and opt in to use secure messaging

Upon completion of the secure messaging account set up, participants can access the preferences link to set up email notifications of new messages or to opt out of secure messaging at any time.

Secure Messaging System Operations. Providing an intuitive interface with the same features participants are accustomed to seeing when using Yahoo or Google email applications facilitates easy navigation. Secure messaging contains four primary folders: inbox, drafts, send and deleted. Participants can create their own personalized folder system under My Folders to organize their messages for easy retrieval and viewing at a later time.

There are two options for creating a message to send to the healthcare provider: free-text or a predefined message. The free-text message allows the participant to type a subject or to compose a message without any predefined components allowing the participants to freely communicate healthcare needs and inquiries in their own words. Participants are advised by the My HealtheVet representative to confirm that they have addressed their messages to the correct healthcare team members prior to sending a secure message. Providers have 48 hours to respond to the message. However, if the message is inadvertently sent to the wrong provider, the message will be re-routed to the My HealtheVet coordinator to confirm the correct provider and be re-sent to the correct healthcare team member. The secure messaging feature is currently only available to primary care providers and not to the specialty clinics. The participants receive an e-benefits user guide for veterans as well as printed information on My HealtheVet secure messaging, how to refill prescriptions and how to view appointments, and they are given a business card with the My HealtheVet coordinator contact information.

Shared Health Responsibilities and Interactions

An important aspect of the VA approach to online medical records is the active participation of patients in their own knowledge management. Studies have shown the efficacy of this approach [7] in particular where health disparities exist in specifically underserved racial or ethnic communities [8]. For example, through the VA, online health journals are provided to encourage veteran patients to self-regulate health conditions by keeping a virtual record of their medical data. The following information is recorded and maintained: vital readings, lab histories, changes to health histories and daily activities (specifically exercise and food intake). The VA patients are also able to use this site to maintain their journals.

Interactive tools featured in the My HealtheVet system are part of the online educational centers for healthy living and display this introductory information on accessing data records and taking an active role in improving their health as described on the site’s Healthy Living Centers page [9]:

The Office of Veterans Health Education and Information within the VHA National Center for Health Promotion and Disease Prevention, in collaboration with the Office of Public Health and Environmental Hazards, has developed a library of educational and health promotion materials on healthy living to enable Veterans to take control of their own health. VHA is in the process of developing a full library of topics for this website.

When health care is required, patients can use the “Get Care” tool to track data about their condition, but the tool depends on their documenting specific records online [10]. First, the patients must list their caregivers and record all health-related information about the caregivers. In addition, patients list all their treatment facilities, providing data about all the clinics and health centers where they have been treated. Thirdly, records of healthcare coverage are required, so that veteran patients can keep health information in one place. Finally, the health calendar feature is interactive and helps patients keep track of their health appointments, meetings and to-do task lists.
Another interactive, support feature of My HealtheVet is the provision of links and connections that allow veterans to be part of online communities of practice (CoP) for knowledge management of healthcare data. The My HealtheVet (MHV) community provides links to information about:

- VA benefits
- events and programs
- VA honors vets
- how to get involved as a volunteer
- veterans’ health news

Collaborative Application Use among VA Entities

The in-person authentication process is presently being phased out and will be replaced by the VA authentication federation infrastructure (VAFlI) that links participants’ VAAFlI credentials to My HealtheVet. The overall objective for VAAFlI is to serve as a single portal of entry for supported VA and DOD applications. Operational Research Consultants, Inc. (ORC) is a provider of a service called ORC eAuthentication through the use of secure online information technologies. ORC eAuthentication provides third party individual identity credentials (login IDs) and authorization services to My HealtheVet, the healthcare initiative; a remote order entry system (ROES), which provides online ordering of medical supplies and healthcare products to veterans; and the electronic contract management system (eCMS), a government vendor resource portal.

The process for ORC eAuthentication is similar to, but more stringent than, the in-person authentication and upgrades the participant’s ability to access and use government resources beyond My HealtheVet. The process follows the National Institute of Standards and Technology’s (NIST) four levels of assurance, which provide a tiered credentialing process to protect the participant’s identity and to maintain a high level of security for access to certain government sites. ORC eAuthentication requires the following participant actions:

1. Complete the online portion of the registration on the ORC website at https://csp.orc.com/reg/SelectApp after logging in to your account.
2. Print registration form and have it notarized.
3. Send notarized form to the address on form, either by certified U.S. mail, Federal Express or United Parcel Service.
4. Receive verification by third party (ORC).

The security of government websites is obviously a major concern and requires mechanisms to be in place to deter unauthorized use and illegal online behavior. As a part of their security measures, ORC provides monitoring of the system. Participants are informed that all activities will be monitored, and use of the system serves as consent (see Sidebar). Note: access and privacy issues need to be considered for all health information, and veterans’ services come with monitoring. Only time will tell if such scrutiny will hinder participants’ willingness to utilize the online government resources and services.

Personal Knowledge Management Research Questions

Knowledge engineering, information science and systems development research questions remain with electronic health and medical systems like My HealtheVet. As more corporate and government systems are developed in the United States using cloud network services, questions about security seem to have become a priority. The implications of emailing personal and confidential information via secure email and the Internet impact the
cooperation and participation of patients. Is there any way to ensure total security of emails? How do healthcare providers continue to gain the trust and confidence of patients using online services and resources?

Recent research suggests that the use of Web 2.0 social media will remain a prominent tool for healthcare professionals to educate, communicate, deliver and address health-related issues. The utilization of social media can complement direct care services through immediate online information, for example, on a Facebook site that addresses a particular disease or in a blog [11]. Interaction among members going through the same experience can serve as support between and beyond visits to the healthcare provider.

Summary

Healthcare knowledge management systems from companies such as Siemens, SAS, Oracle, Teradata and IBM are currently being announced as products and recommended to doctors and hospitals in the United States. Pressure to collect problem list information electronically is growing as regulations like ICD-9 and ICD-10 (9th and 10th revisions of the International Classification of Diseases and Related Health Problems) require doctors, clinics and hospitals to maintain up-to-date lists of current and active diagnoses. In medical and health informatics, specific codes for illnesses and conditions are required, just as Medicare and Medicaid funding requires these codes in records. Furthermore, the use of patient-centered database systems like My HealtheVet will allow the application of analytics to HIEs and data warehouses of aggregated data on diseases, medical conditions and health problems to improve health care worldwide. As this paper shows, “trust” and “participation” will be important aspects of healthcare informatics and the knowledge management of your medical information.

Resources Mentioned in the Article


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