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Michael Veronin

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Michael Veronin, PhD, RPh
Department of Pharmaceutical Sciences, Ben and Maytee Fisch College of Pharmacy, The University of Texas at Tyler

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Abstract
Personal Health Records, or PHRs, are designed to be created, maintained and securely managed by patients themselves. PHRs can reduce medical errors and increase quality of care in the health care system through efficiency and improving accessibility of health information.

Adoption of PHRs has been disappointingly low. In this paper a project is described—essentially a call for action—whereby the skills, expertise, and accessibility of the community pharmacist is utilized to address the problem of poor PHR adoption. The objective of this proposed project is to promote the expansion of PHR adoption directly at the consumer level by utilizing the existing infrastructure of community pharmacies.

The ADDIE model can provide the framework for PHR adoption in community pharmacies. ADDIE is an acronym that stands for the 5 phases contained in the model: 1) Analysis, 2) Design, 3) Development, 4) Implementation, and 5) Evaluation. ADDIE is a versatile educational model used for creating instructional materials, and has found utility as a guidance model for managing projects of all types.

By bringing together these concepts: the highly accessible infrastructure of community pharmacies with the educational resources to inform consumers on the proper use of PHRs, the quality of care for patients will be greatly enhanced.

Introduction

As early as the 1960s, a physician named Lawrence L. Weed first described the concept of computerized or electronic medical records.[1] Dr. Weed described a system to automate and reorganize patient medical records to enhance their utilization and thereby lead to improved patient care. With advancements in computer and diagnostic applications during the 1990s, electronic medical record systems became more widely used by clinical practices.

In 2005, using the high visibility of his State of the Union address, President George W. Bush, renewed his call for the use of better technology in hospitals and in doctor's offices for storing and sharing medical records. The former President said he would ask Congress to enact sweeping health care reforms, including "improved information technology to prevent medical error and needless costs."[2] Later, President Obama, as part of the effort to revive the economy, proposed a massive effort to modernize health care by making all health records “standardized and electronic.” With this ongoing effort, the hope is that the quality of health care for all Americans is enhanced, and costs decline.[3] With patients’ health information in electronic format, the aim is accessibility: to have the information available when and where it is needed to improve care.

Corresponding author: Michael Veronin, PhD, RPh
Associate Professor, Department of Pharmaceutical Sciences
Ben and Maytee Fisch College of Pharmacy
The University of Texas at Tyler
3900 University Blvd, Tyler, TX 75799

EMR vs. EHR vs. PHR

Among terminology related to electronic or digital health information, the term “Electronic Medical Record” or “EMR” was the first to appear in the literature, and early EMRs were useful for clinicians in accessing and organizing medical information.[1]

By definition, an Electronic Medical Record, or EMR, is a digital version of the paper chart in clinician offices, clinics, and hospitals. An EMR contains notes and information

collected by and for the clinicians in that office, clinic, or hospital and are mostly used by providers for diagnosis and treatment. EMRs are more valuable than paper records because they enable providers to track data over time, identify patients for preventive visits and screenings, monitor patients, and improve health care quality.[4]

According to federal government's Office of the National Coordinator for Health Information Technology (ONC), an Electronic Health Record (EHR) functions similarly as an EMR, but can actually achieve more towards patient care. EHRs "focus on the total health of the patient—going beyond standard clinical data collected in the provider's office and inclusive of a broader view on a patient's care."[4] As an electronic version of a patient's medical history that is maintained by the provider over time, an EHR may include all of the key administrative clinical data relevant to the patient's care under a particular provider such as demographics, progress notes, medications, vital signs, past medical history, immunizations, laboratory data and radiology reports.[5] The EHR automates access to information and has the potential to streamline the clinician's workflow. The EHR also has the ability to support other care-related activities directly or indirectly through various interfaces, including evidence-based decision support, quality management, and outcomes reporting. EHRs are the next step in the continued progress of healthcare that can strengthen the relationship between patients and clinicians. The timeliness and availability of health data enable providers to make better decisions and provide better care.[6]

Personal Health Records, or PHRs, contain similar information as EHRs, but are designed to be created, maintained and securely managed by patients themselves.[7] Information can come from a variety of sources such as providers, pharmacies, and even home monitoring devices, and can include information such as diagnoses, medications, immunizations, family medical histories, and provider contact.

It has been demonstrated that increased use of PHRs can reduce medical errors and increase quality of care in the health care system through efficiency and improving accessibility of health information. In and of itself, the PHR is an innovative solution to the problems of fragmented communication and lack of interoperability among diverse Electronic Health Record (EHR) systems.[8]

Integration of the PHR and EHR

For maximum benefits, PHRs and EHRs not only must gain widespread adoption and usage, but be fully "integrated." An integrated PHR can be defined as an extension of the provider's digital health records,[9] and can be viewed as a "portal" into the EHR that can be accessed and managed by providers. It has been demonstrated that PHRs can be customized and connected into an existing IT infrastructure, with incorporation into designs by major EHR vendors.[10] Many healthcare experts view integration as crucial to improving healthcare delivery by influencing health-related behaviors, with the potential to enhance the patient-provider relationship. Providers, EHR vendors, and other stakeholders accept the notion that integration of PHRs and EHRs will take place—albeit gradually—in the not-too-distant future.[11]

EHR Adoption

In recent times, EHR usage by physicians and hospitals has increased substantially, largely due to organized efforts by the federal government.[12] The Medicare and Medicaid EHR Incentive Programs "provide EHR incentive payments to eligible professionals (EPs) and eligible hospitals as they adopt, implement, upgrade, or demonstrate meaningful use of certified electronic health record (EHR) technology."[13]

The American Recovery and Reinvestment Act (ARRA) of 2009 was a driving force behind the shift from paper-based health records to electronic-based health records. The intent of ARRA (a.k.a. "the "stimulus") was to support widespread deployment and utilization of health information technologies (HIT) and the availability of an electronic health record (EHR) for U.S. citizens by 2014.[14] ARRA's economic stimulus package included financial incentives of up to $40,000 to $65,000 per eligible physician and up to $11 million per hospital for a total of $19.2 billion to spur the transition to computerized patient records.[15,16]

A Problem in Need of a Viable Solution: Adoption of PHRs

In contrast to EHRs, and despite significant consumer interest and anticipated benefits, overall adoption of PHRs remains disappointingly low.[17] For instance, a national survey estimated that only 7% of Americans reported having used a PHR;[18] other reports maintain that the number may be as high as 10 percent.[19] *It is apparent that organized efforts have taken place for adoptions of EHRs, but are lacking for PHRs, despite the push by medical and technology industry stakeholders.*

In this paper a project is described—essentially a call for action—whereby the skills, expertise, and accessibility of the community pharmacist is utilized to address the problem of poor PHR adoption. The objective of this proposed project is to promote the expansion of PHR adoption directly at the consumer level by utilizing the existing infrastructure of community pharmacies.

Pharmacists have been early adopters of computer technology,[20] and pharmacists as well as other health care providers are using Health Information Technology (HIT) to improve patient care.[21] In addition, community pharmacies have a history of impacting patient behaviors through health-related educational and service programs, which include Medicare Part D enrollments for seniors, increasing immunization rates, and smoking-cessation and other community-based intervention programs. In an ever-changing healthcare landscape, the pharmacist possesses an important and unique vantage point for health care delivery: *to assume the role of educator and PHR facilitator*.

Methods

Project Management and ADDIE

To implement the PHR project, specific tasks need to be accomplished, and one rendition of how this may take place is described in the following sections.

Initially, the project may be broken down into two major phases: 1) Development of educational materials for pharmacy personnel to communicate with patients, and 2) Logistical implementation of the program in community pharmacies.

To facilitate the accomplishment of each phase, an appropriate project management framework is needed. Based on previous reports, the "ADDIE" model can provide the necessary framework.[22] ADDIE is an acronym that stands for the 5 phases contained in the model: 1) Analysis, 2) Design, 3) Development, 4) Implementation, and 5) Evaluation.

ADDIE is a versatile educational model used for creating instructional materials (Figure 1), and has found utility as a guidance model for managing projects of all types.[23] The manner in which the ADDIE model can be applied to the PHR project is described below.

Analyze: The focus in this part is on analysis of patients and practitioners as "learners" and the context where the learning will take place.

Workplace Considerations

How would implementation of a PHR program in community pharmacies affect the practice environment? Community pharmacy practice is already faced with such challenges as administrative third party payment burdens, additional training needs, expanding roles of pharmacy technicians, and additional manpower needs, in addition to other new technologies,[24] and it would be difficult to implement changes in established community pharmacy practice environments.

For community pharmacy operations to undergo any type of changes, resources have been created by healthcare organizations to provide guidance where needed. An example of a resource developed by the American Society of Health-System Pharmacists Foundation that may be used to assist in adoption of PHRs by community pharmacies is the Pharmacy Practice Model Initiative (PPMI). An aim of the initiative is to assist in "specific actions pharmacy leaders and staff should take to implement practice model change."[25]

Design: The focus in this part is on the development of an instructional strategy, and selection of appropriate educational materials.

Instructional Design

According to education experts, learning is something that occurs as the result of certain experiences and precedes changes in behavior.[26] In this project, the desired changes in patient behavior result in a greater understanding of the benefits of maintaining a personal health record in electronic format. Key to learning and facilitating changes in patient behavior is development of clear, concise instructional materials capable of being deciphered with relative ease, by all patient population groups.

Instructional Systems Design (ISD) is an established approach to development of educational materials. Briefly, ISD is the practice of maximizing the effectiveness, efficiency and appeal of instruction and other learning experiences.[27] The process consists broadly of determining the current state and needs of the learner, defining the end goal of instruction, and creating some "intervention," such as PHR instructional modules, to assist in the transition. The outcomes of this instruction may be directly observable and measurable.

For the project to be successful, both patients and practitioners would likely need to have achieved a level of computer literacy. Not all individuals have the same familiarity and experience with computers, software, and computer systems, as prerequisite to adopting a PHR. To address deficiencies, a baseline assessment of computer literacy would be helpful for patients and practitioners initiating the use of a PHR. An example of an assessment instrument would be the Basic Computer Skills Self-Assessment tool developed by Illinois Valley Community College.[28]

Develop: The focus in this part centers on the development and arrangement of materials and context (pharmacy environment) appropriate for learning to take place, specific to PHRs.

Content: myPHR
Appropriate learning content for instructional modules can be adapted from myPHR (http://www.myphr.com.) produced by the American Health Information Management Association (AHIMA). The AHIMA is a national non-profit professional association, founded in 1928, dedicated to the effective management of personal health information needed to deliver quality healthcare to the public.[29]

The myPHR Web site is interactive with the user and information on PHR background, creation, organization and application displayed as tabs on the home page (Figure 2.) Based on literacy level, motivation, and needs of the patient, information on the myPHR Web site can be modified to the patient's preferences and requirements. Content can be presented to the patient in stages ranging from basic information to actual creation of their own PHR, tailored to their specific health condition. The learning modules will focus on the following topics:

- "What is a Personal Health Record (PHR)?"
  In plain language, patients will be presented with information such as, "The PHR is a tool that you can use to collect, track and share past and current information about your health or the health of someone in your care. Sometimes this information can save you the money and inconvenience of repeating routine medical tests. Even when routine procedures do need to be repeated, your PHR can give medical care providers more insight into your personal health story." Patients will be reminded that they are ultimately responsible for making decisions about their health, and a PHR can help accomplish this.

- "Choose a PHR"
  Individuals can create their own PHR, or may be offered one by a variety of sources, such as a healthcare provider, insurer, employer or a commercial supplier of PHRs. It will be noted that each vendor has different policies and practices regarding how they may use data that is stored for the patient. Individual policies and procedures for the selected vendor will be reviewed carefully to make sure the patient understands how their personal health information will be used and protected. For example, if the patient is familiar with Microsoft products, they may opt to use Microsoft's HealthVault, a user-friendly option for health data management by consumers (Figure 3.)[30] HealthVault is described as a "personal health platform that lets you gather, store, and share health information online."

- "Guide to Creating a Personal Health Record"
  The patient should be encouraged to begin tracking their health information in whatever format works best for them, even if the initial choice is paper. However, if the patient plans to share information in the PHR with various healthcare providers, digital format is recommended. During the educational stages, the patient will be presented with easy-to-follow steps for creating a complete PHR (Table 1.)

Implement: The focus in this part is to carry out the project; deliver the instructional materials.

Logistical Implementation into Community Pharmacies
An approach to making changes in the workplace "culture" could appropriately begin in the academic setting during the future pharmacists' educational experiences, and would be most conducive to development of educational materials. The PHR project may be implemented during the Advanced Pharmacy Practice Experience Program (APPE) with pharmacy students spearheading the PHR adoption. The objective of the APPE program is to provide the student with an opportunity to acquire the practice skills that are needed to enter into the profession of pharmacy. APPE is a structured experiential course designed to educate students to think and act independently as pharmacy practitioners during the fourth professional year.[31]

The program consists of experiential rotations in a variety of practice specialty areas, and often students are required to complete a Community Pharmacy Practice Rotation. The academic rotation provides the ideal environment to pilot test the implementation of the PHR program, without the constraints of a for-profit setting. A goal of the Community Pharmacy Practice rotation is to ensure that the student gains the technical skills and familiarity with professional decision-making that are prerequisites to beginning the traditional practice of pharmacy in a community-based environment. Also, the rotation is designed to provide experience in the delivery of patient-centered care in a community practice setting. PHR implementation will be a significant part of the student's interaction with patients in the delivery of patient-centered care.

Evaluate: The focus in this part is to make sure the processes achieve the desired results.

Formative and Summative Evaluations
In the ADDIE process, an ongoing evaluation process facilitates "fine- tuning" and allows programs to make important changes quickly to improve outcomes.[32] Evaluation also provides data that can be used to support

program continuation, enhancement, or expansion. Evaluation results are of interest to a wide variety of stakeholders and will serve to keep them engaged in and committed to the program's success. For this project, resources are available to assist in evaluation planning.[33]

Much like smoking cessation programs, AIDS awareness programs, or other types of programs that change patients' behaviors, the intent of PHR implementation is to enhance the quality of care of its participants.[8]

Specifically, a formative evaluation provides focus on the processes within the project and will assess the effectiveness of the program while the activities are in progress. It is likely that a pharmacy technician will serve as the designated program coordinator under the supervision of the pharmacist. The coordinator will analyze learning materials, patient learning and achievements, and effectiveness of communication with patients. This aspect of evaluation serves to detect deficiencies so that the proper interventions can take place that to allow the patients or "learners" to master the required skills and knowledge.

In addition, summative evaluations should be conducted, with the focus on the overall outcome. Arbitrary points in time can be selected to view the adoption rates of PHRs as an indicator of success. The various instruments used to collect data include questionnaires, surveys, interviews, and observations. Questionnaires can be an inexpensive procedure for external evaluations and can be used to collect large samples of patient information.

Results (Anticipated)

Although speculative, the necessary items have been identified for successful implementation of this project. The primary outcome measure is rate of adoption of PHRs.[34] Success for this project will be defined as measurable increases in adoption rates of PHRs that far exceed current trends, engaging the community throughout the process. Long-term success for this project will be realized when this PHR project model is integrated into all community pharmacies to help patients adopt PHRs.

How might this project change health and health care in the not-too-distant future? It is anticipated that in the near future, the PHR project will be an accepted model for PHR adoption and utilization in all communities. Prior to large-scale implementation, pilot testing of the project with formative and summative evaluations, is auspicious, if not essential. In pilot testing, data on adoption rates can be collected, validating the positive impact to the community, and it is anticipated that the number of enrollments in PHR usage will increase across selected community pharmacy sites.

Impact on Workflow

PHR implementation will be a significant part of the pharmacist's interaction with patients in the delivery of patient-centered care (Figure 4). As previously noted, a relatively small number of Americans actually use PHRs, despite the push by medical and technology industry stakeholders. It has been reported that often, individuals without serious illnesses don't see the need for using PHRs. As expressed by one expert, "faster networks, more secure databases, and improved information sharing can't cure people's apathy about their own health."[19]

Within a reasonable timeframe—perhaps a few months to a few years—the public's perception about using and maintaining PHRs will be transformed in a positive way. With the emergence of the benefits of improved access to health information, perhaps it will be commonplace for patients to visit their local pharmacy to access and maintain their personal digital health records. With this project, by increasing accessibility to PHRs and providing educational opportunities, patients' attitudes, beliefs, and behaviors will be transformed leading to integration of PHRs into patients' overall health care.

Discussion

In the U.S., an infrastructure of health care delivery exists known as the community pharmacy network. A number of different models exist to help explain health care utilization behavior, though none have been applied to the use of community pharmacy.[35] In policy terms, community pharmacy utilization is an important issue to address as the U.S. Government strongly supports health care delivery models that will increase efficiency and lower costs in the delivery of quality health care to citizens.

In the community pharmacy, pharmacists are readily accessible and highly visible, and in many instances, are the 'first-line' encounter for patients seeking health care.[36] On a daily basis, millions of Americans walk into community pharmacies and depend on pharmacists for assistance and advice for their health care needs. Pharmacists are regarded as the most trusted professionals in the world.[37] Additionally, pharmacists have been early adopters of computer technology, and for the most part, pharmacists are comfortable using health information technology.[20]

With the evolution of pharmacy-based patient care services, and implementation of the Health Insurance Portability and Accountability Act (HIPAA) privacy rule, the physical layout of

many pharmacies has changed to allow private or semi-private consultation and direct patient care services.[38] Today's pharmacist must not only dispense prescriptions, but also communicate health-related information and provide medication-related primary health care. With this in mind, pharmacists and the community pharmacy network can be a highly effective means of dramatically increasing Personal Health Record (PHR) adoption and utilization.

In support of this project, research evidence suggests that success for PHR implementation involves "a community-based implementation to allow the PHR to be owned and controlled by the consumer and be portable among providers, plans, and employers to create high utilization."[8] This proposed project offers a specific plan for this type of implementation.

Current methods of adoption and utilization of electronic health information are geared toward organizations such as hospitals and physician practices and connectivity through such entities as a Health Information Exchange.[39] Although this proposed project consists of organizational components, it promotes expansion directly at the consumer level. The rationale for this project is based on reports asserting that adoption of PHR's has been low, and current methods of PHR promotion and utilization have had limited success.[19] This project is centered on increasing accessibility and improving patient education (i.e., literacy) on PHRs, to provide a solution for poor PHR adoption.

In addition to spearheading in the adoption of EHRs, the federal government's Office of the National Coordinator for Health Information Technology in the U.S. Department of Health and Human Services advocates the management of health information by consumers via a Consumer-mediated Exchange, which is essentially a type of PHR. Although the federal government and HIT experts may favor consumer control of health information, a hindrance to adoption of consumer-mediated exchange has been aptly expressed that "the current healthcare environment is so complex that development of consumer control will take time and that even then, consumers may not be able to mediate their information effectively."[40]

Further, PHR supporters have identified obstacles that need to be addressed to enable significant adoption of electronic health record technology, which notably includes patient acceptance.[41] Adoption of personal health records involves a "fairly steep learning curve and a change in cultural mindset."[42] According to Erika S. Fishman, Manhattan Research's Director of Research, one of the biggest hurdles to overcome for the adoption of PHR is a lack of motivation among Americans to use these records unless faced with live threatening illnesses. Meredith Abreu Ress, Manhattan Research's VP of Research, also doesn't expect to see PHRs gain widespread following in the near future, and asserts the difficulty in patient motivation to maintain their own health records "when most doctors still have your entire medical history in a coffee-stained manila folder."[43]

Community pharmacies have a history of impacting patient behaviors through health-related educational and service programs. With pharmacist-as-educator involvement, this proposed project will have an impact on these obstacles.

Given the current limitations to widespread adoption and utilization of PHRs, if the proposed service project achieved widespread implementation, it would likely accomplish two major long-range goals: 1) To increase accessibility and usability of electronic health information on individual patients or populations. This record or collection of records in digital format is capable of being shared across different health care settings, by being embedded in network-connected information systems. The concept of a single repository of health information that consumers could use to manage and selectively share or disclose their personal health histories is good in theory but, right now, troubling in practice. 2) To provide consumers with a framework of information management so that consumers and health care professionals can make well-informed, evidence-based decisions regarding their health. This essential information will be initiated, organized, and maintained in the form of publicly-accessible community channels. In this manner, each individual patient—irrespective of socioeconomic circumstances or health literacy level—will be treated with special consideration to create their own repository of personal data and health information that can be selectively disclosed to healthcare providers.

Principle of 'Power in Numbers'

As alluded to in previous sections, the sheer number of community pharmacies that provide health care services to patients has the potential to greatly impact PHR adoption and utilization. The National Association of Chain Drug Stores (NACDS) is the premier organization that represents the interests of the retail pharmacy industry. NACDS reports that there are over 39,000 pharmacies operated by traditional chain pharmacy companies, supermarkets and mass merchants. In addition there are nearly 17,000 independent pharmacies. Chains employ more than 2.5 million employees, including 118,000 fulltime pharmacists.[44] The total economic impact of all retail stores with pharmacies transcends their $815 billion in annual sales. Every $1 spent in these stores creates a ripple effect of $3.82 in other industries, for a total

economic impact of $3.11 trillion, equal to 26 percent of GDP.[45]

With the advent of the clinical pharmacy movement, Pharmaceutical Care, and Medication Therapy Management programs, community pharmacies have evolved from mere dispensaries of drugs to patient education centers. The profession of pharmacy aims to encourage the pro-active involvement of community pharmacists and their staff in supporting self-care, offering suitable interventions to promote healthy lifestyles and establishing a health promoting environment across the network of community pharmacies by participating in national and local health campaigns. Community pharmacies provide better access to high-risk patient groups that could benefit from patient educational programs.[46] While not the only factor, the role of user expectations is a crucial element in explaining the adoption of new digital technologies.[47] Pharmacists have demonstrated that they are in the pivotal position of influencing patient expectations. Ninety-five percent of U.S. residents live within 5 miles of at least one community pharmacy,[48] so it is reasonable to assume that community pharmacies can play a significant role in the dissemination, adoption, and implementation of electronic and personal digital health records.

Specifically, how can pharmacist elicit change in patient behavior to encourage the use of PHRs? Many strategies exist to help patients change health behaviors, and one proven method beneficial to patients is motivational interviewing.[49] Motivational interviewing is defined as a "patient-centered, collaborative, directive counseling style that elicits and strengthens the patient's internal motivation for change by evaluating and resolving ambivalence or resistance to change."[50] This method been applied to such issues as promoting medication adherence,[49] and in a similar way, pharmacists can help patients with adoption of PHRs.

Presently, financial incentives are lacking for pharmacies to adopt this service project, for time spent away from other business-related tasks, at least up front. And some practitioners believe that adopting a PHR, with integrated EHR system could reduce clinical productivity. However, it should be realized that patient satisfaction, loyalty, and 'good will' will likely result from PHR adoption, which can translate into positive outcomes (and profits) in the near future.

To begin such an endeavor, at a minimum, a greater depth of information may be obtained about PHR adoption by conducting focus groups comprised of patients and personnel who best representative participants in community pharmacy operations. The focus group interviews would help evaluate participants' attitudes—negative or positive—to identify recommendations to improve the PHR services provided.

Limitations

This proposed project has several limitations. The project is essentially a prospective view of what could take place, but without actual implementation, it is still largely conjecture.

It was stated that adoption rates are appropriate summative measures of success. How would adoption be defined? Does this involve just setting up an account, or in addition to setting up an account, maintaining a specific core data set? Could adoption also mean accessing the account at various times (i.e. 4 out of 7 days a week)? The precise definition of adoption is needed before meaningful outcomes can be determined.

In addition, consideration must be given to resources available in pharmacies. What if adequate space and computer access in the pharmacy is limited, or perhaps not available? This is prerequisite to attainment of favorable outcomes.

Also, the challenges of education and training may be understated. It may involve special effort for a student in experiential education to implement PHR education without significant oversight from their preceptor. With this in mind, will students and/or pharmacy personnel be teaching patients to use specific PHR software, or letting myPHR provide the framework and then hope the patient can handle it on their own when they leave?

With regard to workflow issues, consumer-related interface, technology, and access issues specific to PHRs are poorly understood. While informaticians have studied clinical workflow models in some settings of care, evaluations of patient workflows in homes and in the community are rare.[51] An organization's workflow is made up of "the set of processes it needs to accomplish, the set of people or other resources available to perform those processes, and the interactions among them."[52] A better understanding of how the PHR can fit into the flow of what individuals do and how communication takes place on a day-to-day basis is needed. A patient's PHR will be best utilized if the patient understands the importance of maintaining and coordinating health-related documentation and activities with health care providers (Figure 4).

Conclusion

A major breakthrough in improving adoption rates for PHRs has yet to occur, and with the potential to reach millions of people, this project provides the impetus for increasing

adoption rates for PHRs. The pharmacist is the most accessible member of the health care team, and often is the first health professional with whom patients will confer regarding health-related issues. By bringing together these important concepts, the highly accessible infrastructure of community pharmacies with the educational resources to inform consumers on the proper use of PHRs, the quality of care for patients will be greatly enhanced.

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Table 1. Steps for creating a Personal Health Record. (Adapted from Reference 29, myPHR. American Health Information Management Association (AHIMA). https://www.myphr.com/resources/choose.aspx.

STEP 1: Patients will be advised to contact their doctors' offices or the health information management (HIM) or medical records staff at each facility where they have received treatment. Patients will be shown how to request medical records from a variety of health plans.
STEP 2: Patients will be educated on the purpose of the "authorization for the release of information" form, with directions on how to complete and return to the facility.
STEP 3: Once patients have gathered the appropriate information, they will be instructed on the different ways to maintain their PHR, which may be as basic as gathering information and placing in a file folder.
STEP 4: Patients will be familiarized with the many PHR tools and services to help get organized. Patients will be given the options of transferring electronic information to a portable storage device. Also, portable devices are available that allow patients to carry information on a USB or flash drive, which plugs into most computers. Then there are Internet-based services you can access from home computer for storage and retrieval of health information. Some services can even help patients collect the information from doctors and other healthcare providers.
STEP 5: Patients will be educated on the benefits of bringing their PHR to all health provider visits, and updating and adding with entries from providers, themselves, or family members.
STEP 6: Patients will be instructed on the safety, confidentiality and protection of their private health information.

Figure 1. Project Management and ADDIE model project life cycle.
(Adapted from Klotz K, McKee K. Project Management for Instructional Designers, a Pocket Guide for Project Management. Teaching with Technology Conference UAMS.August 16, 2013., Reference 23).

Figure 2. Home page for creating a personal health record (PHR) through myPHR

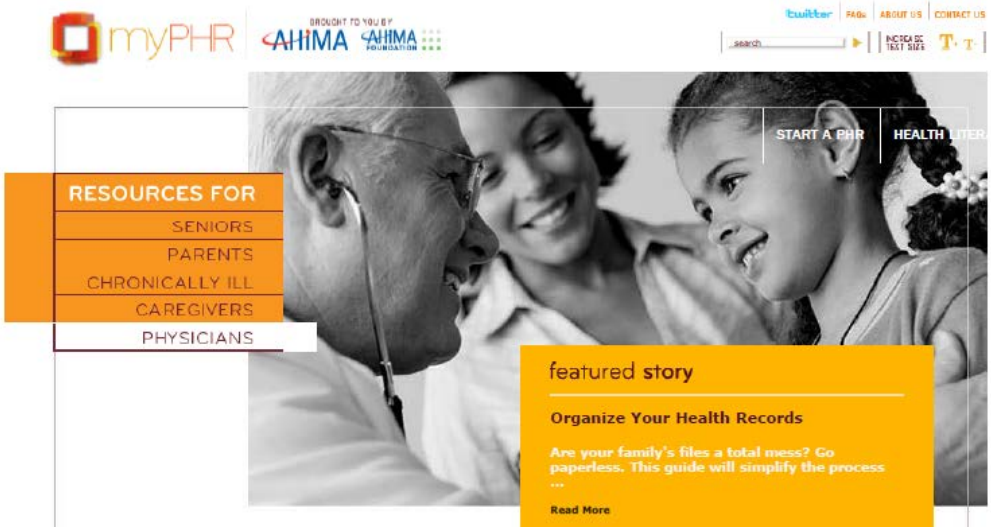

Figure 3. Main navigation page for HealthVault, the personal health record (PHR) service available from Microsoft.

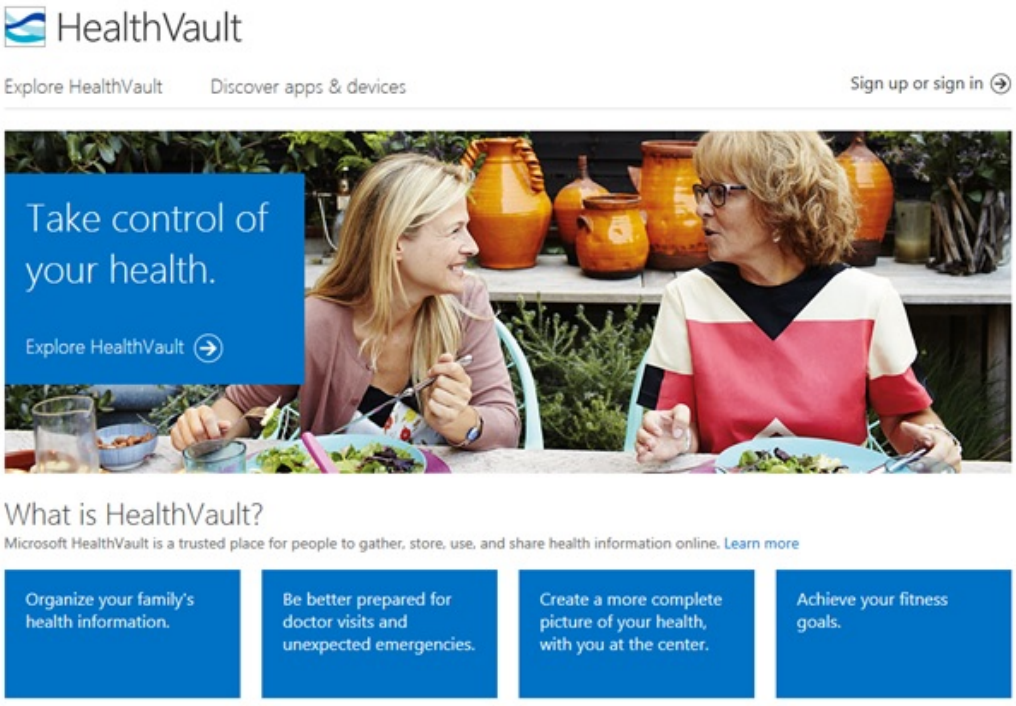

Figure 4. PHR: Impact on Practice.
Personal health record (PHR) communication dynamics in the community pharmacy PHR project.