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The Economics of Standardized Patient Education Materials with Veteran Patients

Executive Summary

- With an increasing number of veterans seeking care, it becomes imperative that the resources within the system are used efficiently and effectively and in a manner that maintains access, safety, and quality of care.
- Veterans who are able to manage their own care may utilize provider services less frequently, thereby increasing access for others who require more care.
- The objective of this quality improvement study was to determine the effectiveness of providing a standardized self-management textbook of health information with the intent that it would decrease demand on primary care providers' time for minor health care issues.
- This initial quality improvement study clearly demonstrated the potential of the return on investment and the subsequent potential for increased access for veteran patients, appropriate use of limited resources, and improved patient outcomes.
- It also clearly demonstrated the value of interaction with the veterans to educate them about their care and the increased satisfaction individualized attention to their needs creates. That finding alone has a greater value than just economics.

A MAJOR ISSUE IN THE VETERANS Affairs (VA) system is access to care. With an increasing number of veterans seeking care, it becomes imperative that the resources within the system are used efficiently and effectively and in a manner that maintains access, safety and quality of care (Institute of Medicine, 2001; Murray & Berwick, 2003).

Those veterans with chronic illnesses who do not need to see their primary care provider for urgent issues can be empowered to manage their health care needs autonomously. One method to achieve this goal is the concept of self-management of care (Lorig, Sobel, Ritter, Laurent, & Hobbs, 2001). Veterans who are able to manage their own care may utilize provider services less frequently, thereby increasing access for oth-

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ers who require more care. Access to the system for others can be increased through established veteran patients' managing their own care and being empowered to seek appropriate information rather than coming to see their provider directly for minor care issues.

Objective

The objective of this quality improvement study was to determine the effectiveness of providing a standardized self-management textbook of health information with the intent that it would decrease demand on primary care providers' time for minor health care issues.

Prior to the initiative, the eight different regional centers in the Veterans Integrated Service Network 20 (VISN 20) all had differing information on the various common health issues that our veterans face. The creativity and ingenuity of the various subject matter experts across the system meant that there were numerous versions of pamphlets and brochures offering education on the same subject for our veterans. This created confusion when a veteran may have was referred from one facility to another within the system and received different information about the same chronic illness.

Specifically, the perspective of cost effectiveness, return on investment, and patient satisfaction were assessed. The intent was to identify whether patient satisfaction increased and overall utilization of the VISN 20 resources decreased through provision of standardized educational resources to the veteran patients from their primary caregiver. Specifically, self-reported use of the emergency room, community-based outpatient clinics, and telephone-linked care triage access were assessed for potential cost avoidance benefit.

Method

A within-subjects design was used with data collected over a 2-year period. Prospective chart flags were put in place for the intervention group and a retrospective chart review was used to identify both pre-intervention resource utilization as well as a post-intervention analysis of resource utilization. Survey of the patients and their caregivers prior to receipt of a standardized self-management book, and 6 months after receipt of the book composed the self-report data used in assessment of the return on investment and patient satisfaction data.

Participants

Participants consisted of a convenience sample of 1,203 veteran patients at two of eight facilities in the VISN 20 region. VISN 20 is the geographic region of the Pacific Northwest and includes Alaska, Washington, Oregon, and Idaho. The region contains eight major medical facilities and attached community-based outpatient clinics (CBOCs). All eight facilities in the region were initially included in the study, participated in the development of the protocols, and received books for distribution. Due to changes in personnel, however, only four of eight facilities returned data on the initial surveys and ultimately, only two sites were included in the 6-month post-intervention analysis. The two fully participating sites included a large urban facility in Oregon and a small rural facility in Oregon. Attached to the large urban facility were a number of rural CBOCs. Although unable to participate due to personnel changes in the initial work of the study, additional information about current usage is included for a rural facility in Alaska.

Literature Review

There are many issues in the management of chronic diseases such as the high costs associated with lifelong management of diseases (Ansell, Jacobson, Levy, Voller, & Hasenkam, 2005; Lorig et al., 2001; Schmier & Leidy, 1998), and poor adherence/compliance with treatment (Schmier & Leidy, 1998).

Various strategies have been identified in the literature that address these issues but have had varying levels of success. Patient education has long been identified as a source of improved outcomes of care. The concepts of empowerment and self-management can improve quality of treatment, and are essential in increasing patient awareness and adherence (Ansell et al., 2005; Latham, 1998; Lorig et al., 2001).

Self-management and empowerment are strategies used with patients who are able and willing to manage their own care. The method is implemented through the use of a variety of materials and information including techniques such as bibliotherapy, the use of self-help materials that provide support for self-management (Anderson et al., 2005). Self-management has been used in increasing applications in particular for chronic disease management (Ansell et al., 2005; Lorig et al., 2001). Of note is that self-management in combination with the support provided by health care providers is instrumental in patient success in managing their own care (Adams, Greiner, & Corrigan, 2004).

Outcomes of self-management programs can significantly reduce costs overall although initial costs may increase due to fees paid for materials (Ansell et al., 2005; Lorig et al., 2001). Latham (1998) estimated that "on average, for every dollar invested in patient education, three to four dollars were saved primarily by reducing hospital, emergency room, clinic or physician visits" (p. S142). There is clear benefit in terms of both economics and increased access to the system for other patients. Spending funds on patient education materials that empower the patient can subsequently lead to a decrease in the number of visits at key entry points to the system.

Intervention

The intervention consisted of providing a standardized self-management book on issues of common health concerns to veterans and their caregivers when they presented for a primary care appointment. A grant received from the regional Veterans Integrated Service Network (VISN) office provided necessary funding for a limited number of books that were dispersed across the VISN. The number of books provided was based on the percent of unique veteran patients seen by each facility. The larger facilities received a greater proportion of the purchased books. Veterans were surveyed as they received the books, and a repeat survey was conducted 6 months post receipt of the book.

The sample of veterans consisted of those who arrived over a series of days in the clinics where books had been distributed. Books were given to the veterans on a first-come, first-served basis in order to increase the randomness of the distribution. A protocol was developed and clinic staff were instructed on how to distribute the books to the veterans. The protocol included the completion of a short survey that elicited responses to questions such as "Who makes your health care decisions?" and "Do you think reading the book will improve how you talk with your provider?" In addition, the clinic staff was instructed on how to place a clinical reminder note in the patient's chart. The reminder flagged the chart for other providers making them aware that the patient had received a book. This also served as an electronic tag that could be used to retrieve data for later aggregate followup.

Additional protocols were developed in collaboration with the Telephone Linked Care (TLC) staff that provided telephone triage of veteran patient's calls to their provider. The standardized self-management book was integrated into the telephone triage process for those veteran's charts that had been flagged. TLC staff members were instructed to refer to the self-management book for specific, standardized patient education when veterans called asking health-related questions.

Measures

The surveys were composed of self-reported measures of how often the participants used the book to decide on making a visit to the clinic, emergency department, or telephone triage center. In addition, the participants were asked if using information from the book reduced the need to call providers, make clinic appointments, or come into the emergency department. Self-report measures, although not the strongest objective measure, are relatively accurate (Schmier & Leidy, 1998). Self-report data including reports on health services utilization are accurate and compared well with objective comparison measures drawn from retrospective chart reviews (Lorig et al., 2001).

Instruments

Two survey instruments were developed for use with veterans in this project. The first survey included a series of questions with multiple choice responses and was completed by the participant at the time he/she received the standardized self-management book. The questions included (a) Who makes your health care treatment decisions? (b) How likely are you to read the book? (c) How likely are you to read the book before calling for medical advice? (d) How likely are you to read the book before your regular clinical appointment? (e) Do you think reading the book will improve how you talk to your provider? (f) How likely are you to recommend the book to others? (g) To whom would you recommend the book?

The second survey, 6 months post receipt, was established to be parallel to the first but from a retrospective perspective. Additional questions were added to obtain self-report data on health care resource utilization. Questions were (a) Who makes your health care treatment decisions? (b) Have you read the book since receiving it? (c) Was information in the book easy to understand? (d) Does the book give you the information you wanted? (e) Does the book help you to take better care of yourself? (e) Does the book help you to talk more easily with your provider? (f) Have you been more active talking with your provider? (g) Does the book help you to decide if a clinic visit is necessary? (h) By using the book I saved a trip to the clinic; (i) By using the book I saved a trip to the emergency department; (j) By using the book I saved a call to the telephone linked care call center; (k) By using the book I worry less about health problems or symptoms.

Ethical Issues

The study was initially proposed as a research study with the veteran population. The project protocol was submitted to the institutional review board (IRB) at the Portland VA Medical Center. After deliberation it was determined that the project was a quality improvement project and would not require IRB approval. As required by federal regulation, the Office of Management and Budget reviewed and approved both surveys.

Data Analysis

Data were analyzed using simple tabulation of response rate. The total number of veterans' responses in each of the multiple choice variables was calculated. In addition, the veterans often wrote comments in the margins of the documents. These comments were analyzed for any themes that were present.

Results

Survey results: Pre-receipt of the book. The initial survey was completed by a total of 1,203 vet-

eran patients from all four sites. The surveys and a book were handed to the veterans in the clinic just prior to their meeting with their provider. They were asked to complete and return the surveys to the clerical staff prior to seeing their provider. No additional staff was utilized. The process of distribution of the book became a component of the flow of checking in for the clinic appointment until all the books were distributed. Once the book was given to the veteran or caregiver, an electronic tag was placed on the patient's chart for later retrieval of longitudinal aggregate data. The surveys themselves were not coded by respondent in order to increase the anonymity of the responses. This had later implications however, as it made it impossible to correlate the responses from pre and post receipt.

Although there was ample time allowed for completing the survey, some questions were not answered by some respondents. As a result and for purposes of clarity, the total number of respondents for each question is indicated with each response (see Tables 1-3).

The veterans who responded to the first question regarding who made their health care decisions (n=1,183) indicated by vast majority that they and their provider jointly made decisions (58.8%; n=696). When asked specifically about whether or not they thought they would be able to use the book in managing their own care, 93.9% (n=1,127) indicated that it was likely or very likely that the book would be helpful. When asked if they anticipated referring to the book prior to calling for medical advice, 92.8% (n=1,109) indicated that it would be likely or very likely. When asked if they would refer to the book prior to a regularly scheduled clinic appointment, 78.6% (n=938) indicated that it was likely or very likely.

Each of the above questions were designed to elicit indirect responses to one of the goals of the improvement project, increased ability to speak to the provider and feel comfortable with the health information discussed. The next question asked directly whether or not the veteran or caregiver felt that reading the book would improve the ability to talk to his/her provider. Of the respondents, 94.6% (n=1,116) indicated

Table 1.
Survey Responses at Initial Distribution of the Book

Question	Veteran response
Who makes decisions about your care? You? Your provider or joint decisions?	Joint decisions (696/1,183; 58.8%)
Will you use the book when managing your own care?	Yes (1,058/1127; 93.9%)
Will you refer to the book before calling your provider?	Yes (1,029/1,109; 92.8%)
Will you refer to the book prior to a visit with your provider?	Yes (769/938; 97.6%)
Do you think the book will help you when speaking to your provider?	Yes (1,056/1,116; 94.6%)

Table 2.
Survey Responses 6 Months Post-Distribution of the Book

Question	Veteran response
Who makes decisions about your care? You? Your provider or joint decisions?	Joint decisions (525/776; 67.7%)
Information in book easy to understand?	Yes (602/664; 90.7%)
Information that you wanted?	Yes (443/661; 67%)
Assisted you to take better care of yourself?	Yes (619/649; 95.4%)
Helped you when speaking to your provider?	Yes (425/473; 90%)
Helped you when deciding whether or not to schedule a visit?	Yes (578/648; 89%)

Table 3.
Extrapolated Cost Savings as a Result of Self-Report 6 Months Post-Distribution

Response	Percent	Estimated cost savings
Deferred on seeing provider as a result of information in the book	38.5%	$50,653.02 at an estimated cost of $209.31 per visit
Deferred on going to the emergency department as a result of information in the book	30.7%	$57,920.92 at an estimated cost of $308.09 per non-emergent visit
Deferred a call to triage nursing service as a result of information in the book	41.7%	$28,126.50 at an estimated cost of $110.35 per call
Total estimated cost savings for two sites		$136,700.44

that they felt the book would assist.

Survey results: Six months post receipt of the book. The initial questions on the post-receipt survey from two sites were written in parallel to the pre-receipt survey. To determine cost avoidance that could be attributed directly to the use of the book, the post-receipt survey had six additional questions that related to the return on investment.

It is interesting to note that post receipt of the book, a greater percentage of the veteran respondents (n=776) indicated that they jointly made health care decisions with their provider (67.7%, n=525). When asked if the information in the book was easy to understand (n=664), an overwhelming majority indicated yes (90.7%, n=602). When asked if the book gave the veteran and caregiver the information they wanted (n=661), 67% (n=443) indicated that it did. Comments indicated that the book did not have enough detail and needed more graphics to explain complications.

Respondents (n=649) to the question about whether or not the book helped them to take better care of themselves identified that it did (61.6%, n=400) or did somewhat (33.7%, n=219). Comments included statements that it helped both the veteran and family, it helped to prepare for appointments, and that they have shared the book with other veterans who did not receive one.

The next question asked whether or not the book had helped the veteran or caregiver to talk to the provider more easily. Of the total respondents to this question (n=638), a number of them had not yet had an appointment (n=145). For clarity in responses these veterans and their caregivers were removed from the total responses (adjusted n=473 that had an appointment within the timeline after distribution of the books). Of those who had been to an appointment, 55.3% (n=260) stated that they found the book helpful when speaking to their provider. An additional 34.9% (n=165) indicated that the book was somewhat helpful.

Figure 1.
Total Estimated Return on Investment

Definition of Return on Investment (ROI)
$ROI = \frac{\text{Gain from investment - cost of investment}}{\text{Cost of investment}}$
$\text{Estimated ROI in this case} = \frac{\$136{,}700.44 \text{ (two sites)} - \$52{,}680 \text{ (all eight sites)}}{\$52{,}680 \text{ (all eight sites)}}$
Estimated ROI based on just two sites = 1.60

The remaining questions were focused on identifying whether or not there was a significant return on the investment for the books. When asked if the information in the book helped the veteran or caregiver to make a decision about whether or not a clinic visit was necessary (n=648), 61% (n=395) indicated that it was helpful with an additional 26.7% (n=173) indicating that it was somewhat helpful.

Extrapolated cost savings as a result of responses. When asked if the use of the book saved a trip to the primary care clinic and their provider (n=629), 38.5% of respondents (n=242) indicated that it helped them decide that a visit was unnecessary. At an estimated average cost of $209.31 per visit, this represents a total of $50,653.02 in cost avoidance just for those veterans who reported this outcome.

When asked if the use of the book saved a trip to the emergency room (n=613), a total of 188 veterans and their caregivers responded yes (30.7%). At an estimated average cost of $308.09 per non-emergent visit to the emergency room, this represents a total of $57,920.92 in cost avoidance just for those reporting.

When asked if the use of the book saved a call to the TLC (n=611), a total of 255 (41.7%) veterans and their caregivers indicated that information in the book answered a question that they would otherwise have asked of the telephone triage nurses. At an estimated average cost of $110.35 per telephone triage call, this represents a total of $28,126.50 in cost avoidance for those reporting.

At a cost of $4.39 per book at the time of purchase and a total purchase price of $52,680 for 12,000 books, the total cost to savings ratio is 1.6:1. This cost represents the entire purchase price for the pilot program across all eight facilities. The data reported are from two of the eight facilities. The total cost savings realized is not measurable with the data from this survey but can be estimated as substantial. Based on these data, the VA saves $1.60 for every dollar spent and thereby increases the access to services for veterans who cannot yet obtain access due to heavy utilization of the system (see Figure 1).

Current and Continued Use of the Text

The Alaska VA Healthcare System and Regional Office (AVAHSRO), one of the original eight facilities that participated in the project, continues to provide the book to its veteran patients. AVAHSRO has provided the standardized self-management book from January 2004 to the present at all three of their clinic locations. For the purposes of this article, information includes only the Anchorage Clinic location. One other VISN 20 facility, The Southern Oregon Rehabilitation Center and Clinics located in

White City, OR, also has continued to use the standardized self-management book, even after funding was stopped at the regional level. All other facilities have stopped distribution due to lack of funding availability for this project.

The decision to continue distribution of the books at the AVAHSRO despite a local annual expenditure of approximately $15,000 was due to senior leadership's belief that patient responsibility in health maintenance and disease prevention results in higher quality care at the right place and the right time resulting in overall cost savings. In addition, there has been an overwhelming demand by veterans to continue use of the book.

The books are provided at AVAHSRO in a controlled, classroom environment to newly assigned veterans entering the VA for the first time in a class known as the Introductory Clinic. Although other topics are covered, the TLC nurse spends 25 to 35 minutes instructing specific sections of the standardized self-management book and has the veterans follow along.

Post-class evaluations have been taken since beginning the class in January of 2004. Evaluations through September 2004 were returned from 377 veterans who ranked the statement, "It was worth my while attending this 1.5 hour class" with an 80% "very satisfied" rating. In February 2005, the evaluation was revised to state a specific statement about the book, "I understand how to use the standardized self-management book and feel that in the future, I will use it to guide home, self-care." There have been 1,392 evaluations returned since February 2005 whereby 1,047 participants have ranked the statement with 5 or "very satisfied," 225 have ranked the above statement with 4 or "somewhat satisfied" and another 55 participants ranked the statement with 3 or "satisfied" or a 95% satisfaction rate overall.

Anecdotal information from the TLC nurse in Alaska indicates that younger populations, defined as age 20 to 55 years of age, use the book much more often than those over the age of 55. In addition, they report that they value the time saved by following directions in a self-care book versus sitting for long hours in an ER or driving long distances, as is common in Alaska.

Another group of frequent users of the nurse advice line are veterans with chronic health conditions, primarily due to the multiple complexities of managing more than one chronic health concern. The nurse stated she has learned that those with no chronic health problems will call TLC one time to determine if they are using the book correctly. When a veteran determines he made the first decision correctly, he does not make return calls for similar minor health concerns which the book specifically covers. Iraqi Freedom veterans are Internet savvy and seem more apt to read an easy to follow guide to assist in obtaining instant information to guide their self-care actions.

Use of the book has also had significant impact on the time a veteran waits for an appointment. While responding to calls from veterans, the Alaska TLC nurse stated that 40% of those counseled by phone have their books handy and have read it prior to calling the facility. If they have not read the materials, they reference their book during the conversation. It is noted that this assists with teaching and reviewing signs and symptoms that might need additional followup.

Conclusion

The quality improvement project and subsequent data represent an opportunity for the VA to increase access to clinics by providing tools for the veteran patients and their caregivers to manage their own disease processes. The use of a guided standardized educational process clearly led to a reported increase in patient satisfaction over a prolonged period as demonstrated by the work done at the Anchorage site. The return on investment issues are significant just with the anecdotal information received from the veterans who responded to the various surveys. Additional validation using the electronic charting system and flags that were attached to the patient record could be done to validate ongoing compliance and further assess the outcomes of care impacted by standardized educational materials. Identification of whether or not the content of the books was used consistently and assessment and measurement of actual increases in compliance with performance measures or individualized care plans developed with their provider could be assessed for improved patient outcomes over time.

This initial quality improvement study clearly demonstrated the potential of the return on investment and the subsequent potential for increased access for veteran patients, appropriate use of limited resources, and improved patient outcomes. It also clearly demonstrates the value of interaction with the veterans to educate them about their care and the increased satisfaction individualized attention to their needs creates. That finding alone has a greater value than just economics.

The program was not continued at all sites due to budgetary constraints. It is hoped that a decision will be made in the near future to fund the program at all sites and thereby increase the ability of the program to determine return on investment numbers for all sites included in the original proposal.$

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7. Assessment does not have to be arbitrary and artificial.
8. Collaboration is happening.
9. Higher education can change.

Nursing leadership needs to collaborate quickly with integration and innovation in developing, improving, and maintaining the skill set of the nursing workforce and assuring competent practitioners from our educational system going forward. We need to share our valuable resources and move out of our silos and begin to look at the big picture, and we need to reach inside and find that creative child that works within us. Risk taking, innovation, and change have never been our profession's strong points, but we need them now. The day of the "sage on the stage" is over. We're at a decision point where these three things need to occur in rapid succession in order to remain a viable, trustworthy, and noble profession. The decision time is now. One of the world's greatest innovators summed up innovation and collaboration well:

"It is to the nature of our communications that we must look for the benefactions which can come from such interchange. The machinery stands ready, is already widely in use, and will become perhaps incredibly more so as we put science to our humanitarian uses." — Walt Disney $

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