
Care Transition Experiences of Older Veterans and Their Caregivers

Bryan Keith Ford, Berit Ingersoll-Dayton, and Kathryn Burgio

This study's main objective was to examine care transition experiences of older veterans and their caregivers. Fifty patients age 65 years and older, discharged from a Veterans Affairs Medical Center hospital, completed the Care Transitions Measure-15™ survey three to four weeks postdischarge. Seven patients and six caregivers participated in semistructured interviews. Overall, the quality of care transitions was rated as good; however, some items were indicated as problematic for veterans. Themes that emerged included agreeableness, frustration with complex information, caregiver education, and the timing and methods of information delivery. These findings have implications for all clinical staff working with veterans, and particularly for social workers facilitating care transitions for veterans and their caregivers.

KEY WORDS: *caregiving; care transitions; health care; veterans*

Older adults are particularly vulnerable to the consequences of fragmented care as they transition between health care settings. Good care transitions are important for older patients because they typically have “multiple chronic conditions and complex therapeutic regimens” and see many more providers than younger patients (Naylor & Keating, 2008, p. 58). Research indicates that almost half of older adults experience a medical error, and one in five suffers an adverse event associated with discharge (Forster et al., 2004). Many of these medical errors and adverse events are potentially preventable by improving communication between hospital staff, patients, and caregivers. Studies indicate that patients are routinely discharged with test results pending; unresolved plans for follow-up tests, appointments, or both; vague discharge orders; and insufficient contact with their physicians (Ziaieian, Araujo, Van Ness, & Horwitz, 2012). This lack of communication and coordination results in patients being uninformed or misinformed about their illnesses or medications, lacking follow-up resources, and being not fully prepared to manage their own health (Lum, Studenski, Degenholtz, & Hardy, 2012). In addition, informal caregivers who could greatly bolster the patient's care during transitions have little involvement in the process (Bauer, Fitzgerald, Haesler, & Manfrin, 2009). Ultimately, these factors can contribute to poor outcomes, patient dissatisfaction, and unnecessary rehospitalizations, all of which affect the costs of care (Rau, 2011a, 2011b).

According to the 2012 U.S. Census, there are roughly 12.4 million veterans over the age of 65 (U.S. Census Bureau, 2012). Many of these older veterans seeking care from the Veterans Affairs (VA) health care system have more than five medical problems, in addition to struggling with problems associated with instrumental activities of daily living and multiple medications (Kunik, 2010). Helping veterans to manage their care is often a complex process. Informal caregivers for these veterans tend to be spouses and, as one study suggested, these caregivers frequently struggle with gaining access to VA services, understanding VA benefits, and dealing with their own depression (Kunik, 2010). Therefore, finding better ways to facilitate care transitions is important for both older veterans and their caregivers.

Many studies in the care transition literature have indicated that interventions with the most impact involve patient-centered education that begins at the time of admission to prepare patients for discharge (Naylor et al., 1999; S. G. Parker et al., 2002). These targeted care transition interventions also have a significant impact on patient satisfaction scores and rehospitalization rates in older patients (Shepperd, Parkes, McClaran, & Phillips, 2004). Patient-centered interventions have shown the most promise, because patients are the “common thread” in every care scenario (Parry, Mahoney, Chalmers, & Coleman, 2008).

The literature on care transitions with veterans is scant, yet recent reports from the Centers for Medicare and Medicaid Services indicate that the VA

readmission rates are about the same as those at other private hospitals nationwide (Rau, 2011a). Addressing readmission rates has become an important issue in the VA system, because veterans tend to have poorer health, more medical conditions, and higher medical resources utilization than nonveteran populations (Agha, 2000). Many of our nation's older veterans use a single system of health care provided by the VA for many, if not all, of their health care needs (Muus et al., 2010). If veterans feel dissatisfied as they are discharged from the VA, they are unlikely to return for needed follow-up care, which could affect their continuity of care and ultimately their overall health status (Stroupe, 2005).

Given the unique qualities of the veteran population and the VA health care system, the techniques used in previous care transition intervention studies may or may not be appropriate or successful with this group of patients. Furthermore, the VA already offers an array of services and technologies, including the MyHealthVet (MHV) platform, an online tool that allows veterans to review their electronic medical records. However, these technologies are not yet adapted for application to care transition protocols, especially hospital discharge for older veterans. Thus, there is a need to develop a care transition intervention that is responsive to the specific needs of veterans and is compatible with existing VA services. Social workers are in a key position to develop these care transition interventions in the VA for two reasons. First, one of the primary roles of hospital social workers is to facilitate communication among staff, patients, and caregivers, especially at the time of discharge. Second, the VA is a primary source of employment for social workers (National Association of Social Workers, 2013). Social workers are uniquely qualified to coordinate care during transitions because they are trained to identify the patient's social networks and to facilitate social support during periods of upheaval and change. Social workers' values, knowledge, and skills are ideal for helping older adults successfully navigate transitions of care (Herman, 2009). Social workers are trained to advocate, navigate systems of care, and identify community resources that can be critical to supporting patient needs. They also can assess the extent to which the patient and the caregiver can comply with follow-up care. In addition, social workers tend to have ties with practitioners and community resources. In sum, social work is in a unique position to help patients and caregivers prepare for and adjust to the

transition from hospital to home (Herman, 2009; O'Brien-Suric, 2011).

The purpose of this study was to lay the foundation for developing a care transition intervention by examining the hospital discharge experiences of veterans and their caregivers. A mix of both quantitative and qualitative methods was used based on Morgan's (1998) conceptualization of the different ways in which quantitative and qualitative methods can be used to complement each other. We followed one of his models, that is, to begin with quantitative methods and to augment the findings with qualitative methods. By starting with a quantitative survey, we were able to determine the overall scope of concerns experienced by patients. The qualitative interviews then provided us with richer understanding of the quantitative survey results. This mixed-methods approach helped us to characterize the quality of current discharge processes using a standardized survey and, using more in-depth interviews, to understand the experiences of veterans and their caregivers. In so doing we identified unmet needs and gaps in care and obtained veterans' and caregivers' views on potential components for a veteran-centered discharge planning intervention.

METHOD

Participants

This study was approved by an institutional review board, and all participants signed informed consents. Participants were 57 patients, age 65 years or older, admitted to the inpatient medical service at a single VA Medical Center (VAMC). We originally recruited from a larger sample (approximately 210 veterans and caregivers); those who declined to participate cited personal privacy, health issues, or general disinterest. We limited the study to medical admissions, because patients admitted for a medical condition are at a disadvantage compared with patients admitted for a surgical procedure. In general, those admitted for surgery are healthier, more likely to recover, and tend to have greater discharge planning follow-up (Brown et al., 2009). Other inclusion criteria were (a) not in isolation and (b) categorized as "high risk," as determined by having at least one of the following diagnoses: cancer, diabetes mellitus, chronic obstructive pulmonary disease, congestive heart failure, cerebrovascular accident, or costovertebral angle (stroke) (Society of Hospital Medicine, 2008). Exclusion criteria were (a) significant language barrier requiring a translator, (b) life

expectancy less than 30 days, and (c) delirium and/or dementia (as determined by the physician).

In addition, six caregivers of inpatients were included in the sample. Caregivers were asked if they identified themselves as the patient's *caregiver*, defined as "a person who provides direct care (as for children, elderly people, or the chronically ill)" (Caregiver, n.d.). The only exclusion criterion for caregivers was any significant language barrier requiring a translator.

Recruitment

Medical staff was asked to identify potentially eligible participants. Inclusion criteria: Patient in the hospital for a minimum of one night stay, over the age of 65 years, and the physician's agreement that the participant's diagnostic history did not include any diagnosis that would make informed consent impossible. Exclusion criteria: Although a diagnosis of dementia or delirium excluded patients from the study, it did not exclude patients' caregivers. Caregivers of cognitively impaired patients were encouraged to participate in the study to provide a better understanding of the care transition experiences with cognitively impaired patients. To address recruitment bias, clinical staff not associated with the research team made the initial selection of possible participants after the first author described the study criteria. If eligible, the patient, the caregiver, or both received a flyer describing the study and providing the principal investigator's (PI's) contact information. The patient, the caregiver, or both then contacted the PI about their interest in participating. The informed consent was completed at the time of enrollment.

Quantitative Assessment

A convenience sample of 50 patients (veterans) was selected based on inclusion/exclusion criteria and physician approval. Patients were contacted by telephone approximately four weeks following discharge (so as not to interfere with medical follow-up) to complete the Care Transitions Measure-15™ (CTM-15™) (Parry et al., 2008) to assess the quality of care transitions between health care settings. The CTM-15™ is a 15-item questionnaire developed by the creators of the Care Transitions Intervention™. This measure was chosen because of its high reliability (alpha range = 0.93–0.95) regardless of age, gender, education, self-rated health, or ethnic group (Parry et al., 2008). Items are rated on a Likert scale ranging from 1 = strongly disagree to 4 = strongly agree. Ratings were transformed using CTM scoring

calculations, resulting in total scores ranging from 0 to 100, with higher scores indicating higher quality of care transitions. Although other discharge surveys exist, the CTM-15™ is unique in that it focuses on the patient's experiences following discharge (Coleman et al., 2002). Descriptive statistical analyses were conducted using SPSS statistical software (IBM Corp., 2013).

Qualitative Interviews

Seven patients and six caregivers (that is, six patient-caregiver dyads and one patient) were recruited for face-to-face semistructured interviews following either a short or a long format. To preserve uniformity, all of the participants were interviewed by the same interviewer. The short interviews lasted approximately 15 to 20 minutes and were completed in the patient's room during the hospital stay. These interviews focused on information transfer and technology services and included questions such as "Let's talk a little bit about the VA's current technology services MHV and/or the GetWellNetwork (GWN): How familiar are you with these services and how do you use them?" "What kinds of communication technologies do you normally use at home?" These questions allowed the interviewer to assess the patients' and caregivers' knowledge of technologies while patients were in the hospital and to evaluate their preferred methods of communication during patients' hospital stay. Qualitative comments were transcribed by the interviewer during the short interview. The long interviews lasted approximately one hour and took place in the hospital about 15 days after patients were discharged. The long interviews included topics such as information transfer, patient and caregiver preparation, self-management support, empowerment to assert preferences, technology services, and patient- and caregiver-suggested improvements. These interviews included questions such as "Tell me a little about the communication between you and the hospital staff/doctors about your discharge/how did that process work for you?" "How confident were you in your own ability to take care of yourself when you got home?" For the patients' convenience, interviews were scheduled to align with follow-up care appointments. Two patients and their caregivers returned to the VA for electronically recorded, in-person interviews designed to explore in-depth the quality of their discharge experiences and to identify unmet needs and gaps in care.

The shorter interviews lasted approximately 15 to 20 minutes and also took place in the hospital just before discharge. A total of nine patients and caregivers (that is, four patient–caregiver dyads and one individual patient) participated in the shorter interviews. The timing and length of the interviews were based on the patient’s willingness to participate, medical fragility, and feasibility. These interviews were designed to elicit possible gaps in care; preferable communication techniques between the patient, caregiver, and staff; and opinions on the feasibility and use of technology to assist in care transitions.

As part of the interviews, two existing VA health care system service portals were addressed: MHV and GWN. MHV allows patients and their caregivers to access their own health records, send e-mails to their primary care physician, and schedule follow-up appointments. GWN is an interactive patient care system that delivers both educational and entertainment resources to the patients in their hospital rooms.

Analysis of qualitative interview data explored patients’ and caregivers’ experiences of the care transition process using a phenomenological approach (Moustakas, 1994). The phenomenological approach allows for the inquiry to unfold within a perspective-free context and guides the exploration of the underlying social processes. The data from these interviews were first divided into statements, and each statement was labeled and then clustered based on commonality. Direct statements from the interviews were transcribed into an Excel spreadsheet. The themes that emerged from these statements, and their significance, were described in a corresponding column. These clusters of similar statements were then reread to identify common themes addressed by each cluster of statements. The themes were independently validated by two researchers with expertise in qualitative methods.

RESULTS

Quantitative Data

The 50 patients who completed the CTM-15™ ranged in age from 65 to 89 years. The majority of veterans interviewed were white, male, and married; lived at home with their spouse; and carried a primary diagnosis of diabetes. CTM-15™ scores ranged from 55.56 to 100, with a mean of 66.67 ($SD = 10.45$ and Cronbach’s $\alpha = .95$) (see Table 1). Sixty-two percent (38/61) of participants answered all 15 questions on the questionnaire. Eighteen percent of those recruited (11/61) did not respond to the questionnaire. Scores

for the individual survey items were ranked from lowest to highest. Most of the veterans’ responses were positive. Items on which veterans scored the lowest were as follows: not understanding the possible side effects of medications; hospital staff not taking into consideration the patient’s or family’s preferences as to where and what health care needs would be met; not receiving an easily understood written list of follow-up appointments; not being confident in taking care of their own health; and not understanding the purpose of medications.

Qualitative Data

The majority of veterans interviewed in the qualitative portion of the study were male and black, lived with their spouse, and carried a primary diagnosis of diabetes. The majority of caregivers in the study were female, either black or white, and the spouse of the veteran. Analysis identified five themes: (1) gratitude and agreeableness, (2) frustration with complex information, (3) frustration with the timing of information delivery, (4) targeting education to caregivers, and (5) methods of delivering information.

Gratitude and Agreeableness. Patients expressed their gratitude and appreciation to the clinical staff and the VA health care system throughout the interviews. This theme is consistent with the data from the quantitative surveys in that veterans and caregivers were generally complimentary about both the quality of hospital care and the quality of the discharge process. Both patients and caregivers expressed appreciation for the time that clinical staff took to speak to them before they left the hospital. Most important, they were reluctant to criticize any clinical staff or the VA health care system, repeatedly noting that they were “very grateful [for their] care.” This theme of gratitude and appreciation is consistent with previous literature on frail elders that found patients tended to defer to staff and did so, in part, by providing “socially desirable responses” (Beel-Bates, Ingersoll-Dayton, & Nelson, 2007).

Frustration with Complex Information. Several of the participants spoke about the complexity of the medical and discharge information they were given, which is reflected in the survey data by some of the respondents who indicate that they do not clearly understand the possible side effects of the medication that they are taking. Indeed other studies have noted that medication is a complex issue that needs to be properly addressed during discharge (Coleman, Mahoney, & Parry, 2005). Many of the participants

Table 1: List of Items in Care Transitions Measure

Variable	N	M	SD	Skew	Kurt
Before I left the hospital, the staff and I agreed about clear health goals for me and how these would be reached.	45	3.08	0.35	1.27	4.46
The hospital staff took my preferences and those of my family or caregiver into account in deciding <i>what</i> my health care needs would be when I left the hospital.	50	3.02	0.37	0.22	4.69
The hospital staff took my preferences and those of my family or caregiver into account in deciding <i>where</i> my health care needs would be met when I left the hospital.	50	3.00	0.40	0	3.73
When I left the hospital, I had all the information I needed to be able to take care of myself.	50	3.14	0.35	2.13	2.68
When I left the hospital, I clearly understood how to manage my health.	49	3.16	0.37	1.88	1.59
When I left the hospital, I clearly understood the warning signs and symptoms I should watch for to monitor my health condition.	50	3.14	0.49	-0.73	6.74
When I left the hospital, I had a readable and easily understood written plan that described how all of my health care needs were going to be met.	48	3.16	0.42	0.96	1.22
When I left the hospital, I had a good understanding of my health condition and what makes it better or worse.	50	3.18	0.38	1.71	0.98
When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.	49	3.12	0.38	1.19	2.72
When I left the hospital, I was confident that I knew what to do to manage my health.	49	3.12	0.48	-0.80	7.53
When I left the hospital, I was confident I could actually do the things I needed to do to take care of my health.	50	3.10	0.41	0.70	2.57
When I left the hospital, I had a readable and easily understood written list of the appointments or tests I needed to complete within the next several weeks.	48	3.16	0.37	1.84	1.47
When I left the hospital, I clearly understood the <i>purpose</i> for taking each of my medications.	50	3.10	0.36	1.32	3.89
When I left the hospital, I clearly understood <i>how</i> to take each of my medications, including how much I should take and when.	50	3.12	0.38	1.22	2.84
When I left the hospital, I clearly understood the possible <i>side effects</i> of each of my medications.	45	2.93	0.49	-0.16	1.31
CTM score	50	70.13	10.45	1.94	2.89

Note: CTM = care transitions measure.

felt the information provided was not easy to understand. One caregiver mentioned that she “did not really understand what the doctor was talking about.” Another caregiver confessed that she threw the discharge paperwork away when they arrived at home saying, “It was so complicated and such a big stack of paperwork that I didn’t even understand what it all was.”

Frustration with Timing of Information Delivery.

Others expressed their frustration with when the information was delivered. These expressions of frustration were consistent with existing literature indicating that patients and caregivers have preferences for when information is delivered (S. M. Parker et al., 2007). One caregiver noted,

The nurse walked in right before we left and told us all this stuff. I just nodded, but I really didn’t understand anything she said. I was too busy thinking about things like: if we leave right now, will we be home before dark; do we have time to stop at the pharmacy tonight; what are we going to do about dinner?

Another caregiver mentioned,

We have all this time when we are just sitting here [during the hospital stay]. It seems like I could have been learning about what we need to do when we go home then, and not right before I walk out the front door.

This theme coincides with literature that suggests the best discharge protocols begin soon after the patient enters the hospital and are updated during the stay (Bixby & Naylor, 2010; Jack et al., 2012).

Targeting Education to Caregivers. In general, veterans reported being less interested in being engaged in matters of health, while caregivers repeatedly reported an eagerness for information about health, medicines, and follow-up care. One veteran noted, "My wife takes care of all of that." One of the daughters stated, "I usually just take care of all of that for him," meaning that she filled his prescriptions, made his appointments, and drove him to the VA for care. The caregivers also reported being highly motivated to seek out information about health and medicines. For example, a niece of one of the veterans said, "I mean, I am nervous about going home . . . there is so much we need to do . . . [and] so many medications." The salience of this theme suggests that, because veterans rely so heavily on their caregivers, educational materials should be targeted more to the caregivers. This theme was also represented in the survey, as some of the patients felt that the preferences of their family members were not taken into account with respect to their health care needs during discharge planning, and has arisen in previous research (Coleman & Williams, 2007).

Methods of Delivering Information. Participants also spoke about how they preferred to receive health information, which is consistent with the literature (S. M. Parker et al., 2007). Many of the veterans and caregivers mentioned that they liked the idea of having more choice in how they accessed information. Participants described three preferred options for receiving information: (1) speaking in person or by telephone with the clinical staff, (2) having something in hand to read, (3) looking the information up themselves or asking a family member to look it up online.

Patients reported that they liked speaking to the doctor, nurse, or social worker about their health when at the hospital. Several mentioned that they liked seeing the doctor, but noted that they rarely asked questions. One caregiver said, "I like speaking with the doctor, but I like having something in my hand so I can read it."

Most veterans and caregivers mentioned that they were not very familiar with computers, and a few stated that they did not own a computer. However, when asked what they do when they want to know something about their health, all patients and

caregivers mentioned someone on whom they relied to look up information online. For example, one spouse explained, "We are kind of old-fashioned. We don't even own a computer or anything like that. I don't even know how to use one." However, she mentioned later that her son "always looks stuff up on Google."

When participants were asked specifically about their familiarity with MHV and the GWN, approximately half said they were familiar with MHV; none of them knew about GWN. When these two services were further described by the interviewer, the majority of older veterans stated that even if they had known about either of these electronic programs they did not expect to use them. However, the caregivers overwhelmingly thought both services would be helpful. One spouse indicated that she liked the idea of being able to see her husband's health record and e-mail the doctor. "Sometimes, I get home and forgot to ask the doctor this or that. I think having one place to go to see everything about his health would be great." Another spouse mentioned, "It would be nice to use all of this down time in the hospital to learn about his illness," and even connect to her work e-mail.

Many of the participants noted that their preferred way to get information once at home was to call on the telephone. One veteran said,

I like calling and talking to someone. Even if my paper says I have to be back here at this time, go to this [part of the hospital] . . . I call anyway and ask, write it down, and show up.

DISCUSSION

This study used a mixed-methods approach to better understand the care transition experiences of veterans and their caregivers in the VA health care system and support the development of VA-centered discharge interventions suited to the needs of veterans and their caregivers. Our goals were to understand the quality of discharge processes of the VA health care system, to identify possible gaps in care, and to assess veterans' and caregivers' views on potential components for a veteran-centered discharge planning intervention.

The quality of care transitions in the VA health care system, as indicated by the CTM-15™ survey ($M = 66.67$, $SD = 10.45$), is similar to that found at non-VA hospitals ($M = 67.37$) (Coleman et al., 2005). Our findings mirror recent Medicare data that indicate

that the VA health care system's readmission rates are comparable to those at national private hospitals (Rau, 2011b). Although the majority of veterans in our study responded favorably about their care transition process, we know from national data that a little over 20 percent of veterans diagnosed with congestive heart failure are readmitted to the hospital for the same problem within 30 days of discharge (U.S. Department of Veterans Affairs, 2013).

Findings from this study point to some of the ways in which care transition interventions may be adapted to better suit the needs of veterans and their caregivers. Results of the quantitative survey, together with the themes that emerged in the analysis of the qualitative interviews, suggest five issues that could be addressed during the discharge process: (1) agreeableness, (2) frustration with complex information, (3) caregiver education, (4) the timing of information, and (5) the delivery methods of information. Our findings mirror themes other national research programs have identified as important in discharge planning. For instance, four of the most widely used care transition models (the Care Transitions Program, the transitional care model, Project BOOST, and Project RED) suggest a need to focus on issues such as targeting education to patients and caregivers, starting discharge planning sooner rather than later, establishing clear communication patterns, empowering patients, and providing timely follow-ups (Bixby & Naylor, 2010; Coleman & Williams, 2007; Jack et al., 2012; Society of Hospital Medicine, 2008).

The first issue deals with patients' and caregivers' gratitude and agreeableness. During the interviews some of the veterans and caregivers reported being "very grateful" for their care at the VAMC. Indeed, almost all of the survey respondents and interviewees seemed to acquiesce to what they believed the interviewer would like to hear. Other studies have noted that elders who are ill or disempowered may be deferential to interviewers (Beel-Bates et al., 2007; Ingersoll-Dayton, Saengtienchai, Kespichayawattana, & Aungsuroch, 2004). However, this tendency to be acquiescent may pose a hindrance to addressing problems associated with care. If veteran patients or their caregivers do not feel empowered, they are less likely to ask questions and to seek out health information. This point is consistent with findings from this study's quantitative survey, in which one of the lowest ranked items dealt with the extent to which the discharge process took into account patient and caregiver "preferences."

Second, the patient and caregiver interviews revealed frustrations with understanding the complex health information. Patients reported not understanding provider jargon, difficult aftercare tasks, and problems with navigating the health care system. This is consistent with the quantitative surveys, as medication dosing and side effects were among the most problematic issues. Other studies have noted the need to address complex health information at discharge (Chugh, Williams, Grigsby, & Coleman, 2009; Coleman, Parry, Chalmers, Chugh, & Mahoney, 2007; Lindquist et al., 2012). These qualitative findings were further supported by the results of the quantitative survey, in which understanding the side effects of their medications was ranked as the most problematic issue. The third care transition issue identified by this study was patient and caregiver frustration with the timing of information delivery. Learning about multiple medications just before leaving the hospital is not optimal for knowledge retention.

The fourth issue was ensuring that education is appropriately targeted to caregivers, in addition to patients. The final issue highlights optimal ways of delivering information and addresses veterans' and caregivers' views about existing VA health care system services and technologies, such as MHV and GWN. Other programs have successfully used technology during discharge planning (Gurses & Xiao, 2006; Holt, Flint, & Bowers, 2011; Jack & Bickmore, 2013). Whereas participants generally appreciated the idea of having alternative pathways for receiving information, most of the older veterans were hesitant to use computers.

This study represents an initial step in identifying the care transition needs of veterans. The study is limited by its reliance on a small convenience sample drawn from a single VAMC and therefore lacks generalizability. Further research on care transitions in the VA system would benefit from larger samples and from the inclusion of a broader array of VA hospitals. Our interview method and limited sample size did not allow us to compare patient versus caregiver perspectives. The study was conducted at a single VA hospital, so it would also be important to determine whether the issues identified in this study's sample are consistent with those in the larger VA system. Another limitation of the study was not including questions about education level, health literacy, and activities of daily living functioning, so future research should include such questions. In addition, potential interviewer effects could have influenced participants'

comfort and willingness to participate. Given the finding that older veterans tended to be acquiescent, future research might be strengthened by addressing this potential response bias with techniques to encourage respondents to feel more comfortable expressing themselves freely. In addition, future intervention research on issues surrounding the discharge of veterans should examine methods of empowering veterans, creating health education targeted to caregivers, and enhancing communication between the patient and the health care provider.

CONCLUSION AND IMPLICATIONS

Recently, the VA health care system has come under fire for the quality of care provided to its veterans (NBC News, 2014). Care transitions are one of the more critical pieces to the VA's care process. The results of this study begin to identify best practices for developing better care transition interventions in the VA health care system and providing higher quality of care for our nation's veterans. The discharge process might be improved by interventions that ensure communication of complex information in terms that patients and caregivers can understand. As suggested by the participants in this study, discharge information would best be presented in multiple formats so that patients and caregivers may use more than one modality and have choices based on their learning preferences. This also means minimizing one-way communication, in which the clinician instructs the patient-caregiver dyad without careful consideration to their level of comprehension. The patient-caregiver dyad needs to leave the hospital with an assured sense that they understand their medications, self-care duties, and where to turn when they have questions.

Patient education might be optimized by beginning the educational process upon hospital admission and continuing throughout the patient's stay. Many studies have noted timing of information delivery (Bixby & Naylor, 2010; Jack et al., 2012). Education can begin by addressing the patient's risks for being readmitted to the hospital, using instruments like the BOOST risk assessment tool to identify potential problems, and then targeting these topics during the hospital stay (Society of Hospital Medicine, 2008). Information should be provided in person, in writing, and electronically, so that patients and caregivers can have access to it once they return home from the hospital.

Patient education should not only encompass the caregivers, but also be targeted directly to them.

This approach is essential to optimizing care transitions, because caregivers become the frontline of care once patients are home, and study results indicated that they were eager for information. In fact, the caregivers were more motivated to learn than were the patients, but the results from both the surveys and the interviews indicated that they felt left out of the care process. Several studies have also identified this theme that caregivers should be included in discharge planning (Bixby & Naylor, 2010; Jack et al., 2012). This becomes a problem once they are home and have resumed their role as principal care provider.

Older veterans were more comfortable speaking one-on-one with the clinical staff and having a single phone number to call to address follow-up issues. The veterans tended to rely heavily on caregiver support when seeking information. In contrast, caregivers appreciated having access to the Internet/computer-based formats to obtain such information themselves. Patients and caregivers preferred interactional videos provided through VA technologies to accompany written instruction and in-person dialogue with the clinical staff.

A truly responsive care transition protocol should allow a tailored approach based on the patient's individual needs and preferences. Successful patient outcomes are likely to rely on providing multiple methods by which patients and caregivers can find information when it becomes pertinent in their lives. Timing is just as much an element of this equation as is obtaining the right information through the right channel. For instance, if patients and their caregivers have been coached about where to find information (for example, on the side of the prescription bottle), they will be able to access that information when it is important to do so.

However, in a large health care system such as the Veterans Health Administration, special efforts are necessary to enhance patient transitions between the many services and clinics within the VA system. For example, policies that require the identification of high-risk patients in need of follow-up after hospitalization and the use of patient-aligned care teams, or PACTs, could facilitate the implementation of practices identified in this research project. **HSW**

REFERENCES

- Agha, Z. (2000). Are patients at Veterans Affairs medical centers sicker? A comparative analysis of health status and medical resource use. *Archives of Internal Medicine*, 160, 32–52.

- Bauer, M., Fitzgerald, L., Haesler, E., & Manfrin, M. (2009). Hospital discharge planning for frail older people and their family: Are we delivering best practice? A review of the evidence. *Journal of Clinical Nursing, 18*, 2539–2546.
- Beel-Bates, C., Ingersoll-Dayton, B., & Nelson, E. (2007). Deference as a form of reciprocity among residents in assisted living. *Research on Aging, 29*, 626–643.
- Bixby, M. B., & Naylor, M. D. (2010). The transitional care model (TCM): Hospital discharge screening criteria for high risk older adults. *MedSurg Nursing, 19*, 62–63.
- Brown, C. J., Roth, D. L., Allman, R. M., Sawyer, P., Ritchie, C. S., & Roseman, J. M. (2009). Trajectories of life-space mobility after hospitalization. *Annals of Internal Medicine, 150*, 372–328.
- Caregiver. (n.d.). In *Merriam-Webster's online dictionary*. Retrieved from <http://www.merriam-webster.com/dictionary/caregiver>
- Chugh, A., Williams, M. V., Grigsby, J., & Coleman, E. A. (2009). Better transitions: Improving comprehension of discharge instructions. *Frontiers, 25*, 11–31.
- Coleman, E. A., Mahoney, E., & Parry, C. (2005). Assessing the quality of preparation for post-hospital care from the patient's perspective: The Care Transitions measure. *Medical Care, 43*, 246–255.
- Coleman, E. A., Parry, C., Chalmers, S. A., Chugh, A., & Mahoney, E. (2007). The central role of performance measurement in improving the quality of transitional care. *Home Health Care Services Quarterly, 26*, 93–104.
- Coleman, E. A., Smith, J. D., Frank, J. C., Eilertsen, T. B., Thiare, J. N., & Kramer, A. M. (2002). Development and testing of a measure designed to assess the quality of care transitions. *International Journal of Integrated Care, 2*, 1–8.
- Coleman, E. A., & Williams, M. V. (2007). Executing high-quality care transitions: A call to do it right. *Journal of Hospital Medicine, 2*, 287–290.
- Forster, A., Asmis, T. R., Clark, H. D., Al Saied, G., Code, C. C., Caughey, S. C., et al. (2004). Ottawa hospital patient safety study: Incidence and timing of adverse events in patients admitted to a Canadian teaching hospital. *Canadian Medical Association Journal, 170*, 1235–1240.
- Gurses, A. P., & Xiao, Y. (2006). A systematic review of the literature on multidisciplinary rounds to design information technology. *Journal of the American Medical Informatics Association, 13*, 267–276.
- Herman, C. (2009, October). *Social work and transitions of care* [Practice Update]. Retrieved from <https://www.socialworkers.org/practice/aging/2009/Social%20Work%20and%20Transitions%20of%20Care.pdf>
- Holt, J. E., Flint, E. P., & Bowers, M. T. (2011). Got the picture? Using mobile phone technology to reinforce discharge instructions. *American Journal of Nursing, 111*, 47–51.
- IBM Corp. (2013). IBM SPSS Statistics for Windows, Version 22.0 [Computer software]. Armonk, NY: Author.
- Ingersoll-Dayton, B., Saengtienchai, C., Kespichayawattana, J., & Aunguroch, Y. (2004). Measuring psychological well-being: Insights from Thai elders. *Gerontologist, 44*, 596–604.
- Jack, B., & Bickmore, T. (2013). *Louise: Saving lives, cutting costs in healthcare*. Retrieved from <https://www.bu.edu/fammed/projectred/publications/VirtualPatientAdvocateWebsiteInfo2.pdf>
- Jack, B. W., Paasche-Orlow, M. K., Mitchell, S. M., Forsythe, S., Martin, J. M., & Brach, C. (2012). *An overview of the Re-engineered Discharge (RED) toolkit* (AHRQ Publication No. 12–0084). Rockville, MD: Agency for Healthcare Research and Quality.
- Kunik, M. E. (2010). *Advancing veteran-centric care for veterans, families, and caregivers*. Retrieved from <http://www.research.va.gov/researchweek/vet-centric.pdf>
- Lindquist, L. A., Go, L., Fleisher, J., Jain, N., Friesema, E., & Baker, D. W. (2012). Relationship of health literacy to intentional and unintentional non-adherence of hospital discharge medications. *Journal of General Internal Medicine, 27*, 173–178.
- Lum, H. D., Studenski, S. A., Degenholtz, H. B., & Hardy, S. E. (2012). Early hospital readmission is a predictor of one-year mortality in community-dwelling older Medicare beneficiaries. *Journal of General Internal Medicine, 27*, 1467–1474.
- Morgan, D. L. (1998). Practical strategies for combining qualitative and quantitative methods: Applications to health research. *Qualitative Health Research, 8*, 362–376.
- Moustakas, C. (1994). *Phenomenological research methods*. London: Sage Publications.
- Muus, K. J., Knudson, A., Klug, M. G., Gokun, J., Sarrazin, M., & Kaboli, P. (2010). Effect of post-discharge follow-up care on re-admissions among US veterans with congestive heart failure: A rural–urban comparison. *Rural and Remote Health, 10*, Article No. 1447. Retrieved from <http://www.rnh.org.au/articles/subviewnew.asp?ArticleID=1447>
- National Association of Social Workers. (2013). *Social work and service members: Joining forces to support veterans and military families*. Retrieved from <https://www.socialworkers.org/military.asp>
- Naylor, M. D., Brooten, D., Campbell, R., Jacobsen, B. S., Mezey, M. D., Pauly, M. V., & Schwartz, S. (1999). Comprehensive discharge planning and home follow-up of hospitalized elders: A randomized clinical trial. *JAMA, 281*, 613–620.
- Naylor, M., & Keating, S. A. (2008). Transitional care: Moving patients from one care setting to another. *American Journal of Nursing, 108*(Suppl. 9), 58–63.
- NBC News. (2014). *VA hospital scandal*. Retrieved from <http://www.nbcnews.com/storyline/va-hospital-scandal>
- O'Brien-Suric, N. (2011, March 3). Social workers are best for care transitions. *Health AGenda*. Retrieved from <http://www.jhartfound.org/blog/social-workers-are-best-for-care-transitions>
- Parker, S. G., Peet, S. M., McPherson, A., Cannaby, A. M., Abrams, K., Baker, R., et al. (2002). A systematic review of discharge arrangements for older people. *Health Technology Assessments, 6*, 1–183.
- Parker, S. M., Clayton, J. M., Hancock, K., Walder, S., Butow, P. N., Carrick, S., et al. (2007). A systematic review of prognostic/end-of-life communication with adults in the advanced stages of a life-limiting illness: Patient/caregiver preferences for the content, style, and timing of information. *Journal of Pain Symptom Management, 34*(1), 81–93.
- Parry, C., Mahoney, E., Chalmers, S. A., & Coleman, E. A. (2008). Assessing the quality of transitional care: Further applications of the care transitions measure. *Medical Care, 46*, 317–322.
- Rau, J. (2011a, April 28). *Medicare to begin basing hospital payments on patient-satisfaction scores*. Retrieved from Kaiser Health News Web site: <http://khn.org/news/medicare-hospital-patient-satisfaction/>
- Rau, J. (2011b, September 18). VA hospital readmission rates deal a blow to Medicare. *Washington Post*. Retrieved from <http://tinyurl.com/afw3ycu>
- Shepperd, S., Parkes, J., McClaran, J., & Phillips, C. (2004). Discharge planning from hospital to home. *Cochrane Database of Systematic Reviews, 1*. Art. No. CD000313.
- Society of Hospital Medicine. (2008). *BOOST care transitions implementation guide*. Retrieved from <https://www.hospitalmedicine.org>

- Stroupe, K. T. (2005). Patient satisfaction and use of Veterans Affairs versus non-Veterans Affairs healthcare services by veterans. *Medical Care*, 43, 453–460.
- U.S. Census Bureau. (2012). *The 2012 statistical abstract: USA statistics in brief*. Retrieved from <http://www.census.gov/compendia/statab/brief.html>
- U.S. Department of Veterans Affairs. (2013, April). *VA hospital compare*. Retrieved from <http://www.hospitalcompare.va.gov>
- Ziaecian, B., Araujo, K.L.B., Van Ness, P. H., & Horwitz, L. I. (2012). Medication reconciliation accuracy and patient understanding of intended medication changes on hospital discharge. *Journal of General Internal Medicine*, 27, 1513–1520.

Bryan Keith Ford, PhD, MSW, is treatment coordinator for Mental Health Intensive Case Management Program, and research affiliate for Geriatric Research Education and Clinical Centers (GRECC), Birmingham VA Medical Center, 700 South 19th Street, Birmingham, AL 35233; e-mail: bryanford@uabmc.edu.

Berit Ingersoll-Dayton, PhD, is professor and director, Joint Doctoral Program in Social Work and Social Sciences, School of Social Work, University of Michigan, Ann Arbor. **Kathryn Burgio, PhD**, is director of research, GRECC, Birmingham VA Medical Center, Birmingham, AL.

Original manuscript received February 25, 2014

Final revision received December 12, 2014

Accepted December 18, 2014

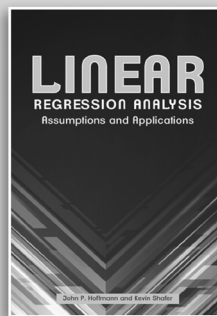
Advance Access Publication March 2, 2016

LINEAR

REGRESSION ANALYSIS

Assumptions and Applications

John P. Hoffmann and Kevin Shafer



Linear Regression Analysis: Assumptions and Applications is designed to provide students with a straightforward introduction to a commonly used statistical model that is appropriate for making sense of data with multiple continuous dependent variables. Using a relatively simple approach that has been proven through several years of classroom use, this text will allow students with little mathematical background to understand and apply the most commonly used quantitative regression model in a wide variety of research settings. Instructors will find that its well-written and engaging style, numerous examples, and chapter exercises will provide essential material that will complement classroom work. *Linear Regression Analysis* may also be used as a self-teaching guide by researchers who require general guidance or specific advice regarding regression models, by policymakers who are tasked with interpreting and applying research findings that are derived from regression models, and by those who need a quick reference or a handy guide to linear regression analysis.

Social work and other social and behavioral science students and researchers need to have a suite of research tools to conduct studies. This book offers a conceptual and software-driven approach to understanding linear regression analysis, with only a slight familiarity with algebra required even for self-study.

ISBN: 978-0-87101-457-3. 2015.

Item #4573. 240 pages. \$45.99



1-800-227-3590

www.naswpress.org



CODE:ALRA15