VHA's National Falls Collaborative and Prevention Programs

Erik Stalhandske, MPP, MHSA; Peter Mills, PhD; Pat Quigley, PhD, ARNP, CRRN, FAAN; Julia Neily, MS, MPH; James P. Bagian, MD, PE

Abstract

Falls are a high-volume, high-cost problem in health care. This article presents three successful patient safety fall prevention projects completed within the Department of Veterans Affairs Healthcare Administration (VHA): the National Falls Collaborative Breakthrough Project, the development and deployment of the National Falls Toolkit, and the National Falls Data Collection Project. Each of the projects enrolled VHA medical centers from across the country. These three projects demonstrate VHA's leadership in evidence-based practice, data and outcomes management, and reliability and sustainability of innovations. The National Fall Collaborative Breakthrough Project involved 40 participating facilities and achieved remarkable results (62 percent reduction from baseline for major injuries). The National Falls Toolkit is a compendium of useful references, resources, presentations, posters, and spreadsheets that were culled from existing research and the Falls Collaborative. The National Falls Data Collection Project occurred over a 2-year period and analyzed multiple indicators of a fall prevention and injury reduction program for 65 medical centers.

Introduction

This article describes the veterans Affairs Healthcare Administration's (VHA's) experience with three unique, interrelated projects over a 6-year period to build capacity, improve practice and expertise, and collect national outcomes data related to patient falls in inpatient settings. While each project stands alone, the combined effect and interrelationship of each initiative showcases the success that large-scale health care systems can have with regard to patient safety and fall prevention in general and to injury reduction in particular.

The first of these, the National Falls Collaborative Breakthrough Project,[1] involved 40 hospitals and State veterans homes, which focused on reducing injuries associated with falls. This section identifies factors associated with successful teams, as well as those program interventions associated with dramatic decreases in injury rates.

The second section describes development and deployment of the National VHA Falls Toolkit, which is a compendium of information, sample policies, templates, presentations, posters, and videos. This resource has been publicly available since 2004, and is widely accessed by the general public (www.patientsafety.gov).

1

The third project, an evaluation of the impact of the National Falls Toolkit, details an outcomes project involving 65 VHA facilities that reported quarterly information over a 2-year period (2004-2006). An analysis is provided on their results, why people participated, and what changes were implemented.

Falls are a high-volume, high-cost problem in health care with severe personal and health consequences for the elderly, and they result in significant consequences that add to the burden of care for elders in health care systems. Approximately one-third of all adults over 65 years of age are reported to fall each year.[2, 3] National data indicate that falls are the largest single cause of restricted activity days among older adults,[4] and they are a leading precipitating cause of nursing home admissions.[5] In addition, falls account for 6 percent of all medical expenditures for individuals over age 65. Direct care costs of fall injuries for people age 65 and older are expected to reach $32.4 billion by 2020,[6] when 20 percent of Americans will be over the age of 65.

Despite considerable research devoted to falls, little progress has been made to significantly decrease falls and their potentially devastating consequences. Until recently, falls were viewed simplistically, not as complex problems with multiple risk factors. Current evidence suggests that falls prevention and fall-injury protection requires interdisciplinary health care providers who understand the complexities of fall risks among varied populations, evidence-based fall risk assessments, and multifactorial interventions. Additionally, evidence-based tools are needed nationally for our health care systems to implement fall prevention programs. This article provides some models of activities that others can use as learning tools.

National Falls Collaborative Breakthrough Project

Although research on preventing patient falls is widely available,[7] implementing effective fall prevention programs at the local level is a major challenge. To help local programs implement effective fall programs, we conducted a facilitated quality improvement effort designed to reduce falls and injuries due to falls within the VHA. The following section describes the process, outcomes, and team-level success factors of that effort.

Methods and Process—Breakthrough Project

In its Collaborative Breakthrough Series (BTS) Model, the Institute for Healthcare Improvement (IHI) outlined a method to rapidly implement change in health care systems.[8, 9] This method relies on adaptation and dissemination of existing knowledge to multiple settings to accomplish a common aim. It calls for careful research with subject matter experts to identify the knowledge available for use; ideas for change worth testing are developed from that knowledge base.

Over a 6- to 9-month period, multidisciplinary teams that want to achieve much higher levels of performance work on a common aim under the guidance of faculty members who are expert in the topic area or in change theory. Teams come together for two, 2-day educational and planning sessions that are conducted by the faculty. Between these sessions, teams implement some of the suggested changes, measure the results of those changes, and report back to the larger group. Teams are supported through monthly educational and troubleshooting conference calls, individual coaching by faculty members, and an e-mail LISTSERV® designed to stimulate interaction among teams.

We chose to focus this effort on reducing falls and injuries due to falls because within VHA, patient falls are the leading cause of reported adverse events and result in significant morbidity and mortality.[10] In May 2001, the project was marketed to the directors of VHA facilities and State veterans homes. Forty teams were accepted into the project and attended the learning sessions. Throughout the duration of the project, teams provided monthly reports to their leadership and to project faculty on the changes they were making and the results of those changes. Prior to the first learning session, the teams collected baseline data and analyzed their systems for assessing and treating patients at risk for falling.

Learning sessions. The first learning session, conducted in July 2001, focused on teaching teams key changes designed to reduce falls and injuries. The teams were taught a model of improvement in which they defined clear aims, measured progress, and implemented changes by using small (plan-do-study-act) cycles of change.[11] The teams also worked to develop specific action plans to implement improvements in their systems for assessing and treating fallers.

During the second learning session, conducted in March 2002, the teams continued to learn strategies for reducing falls and injuries, presented their results, taught each other, integrated their findings to identify best practices, and developed further action plans to consolidate their gains and spread changes to new areas in their facilities.

Measures. Teams collected and reported the following data on falls and injuries at baseline and monthly thereafter throughout the project's 8-month duration:

- Monthly fall rate, calculated as the number of falls/bed-day of care x 1,000.
- Monthly fall injury rate, calculated as the number of injuries/number of falls x 100.
- Severity of injury for each fall, defined as no injury, minor injury (e.g., abrasion, bruise, minor laceration), or major injury (e.g., hip fracture, head trauma, arm fracture).[12]

Team characteristics. We collected information from a questionnaire that we previously used to assess each team's sense of learning, leadership support, and progress.[9] At both face-to-face learning sessions, participants from each working team were instructed to circle their agreement or lack of agreement to an accompanying statement from the perspective of the team.

Assessing individual team performance was challenging because some teams found that fall reporting had improved, thereby increasing reported fall rates, and major injuries were rare events, rendering their tracking over such a short term unreliable. We therefore determined overall performance based on three factors:

1. Decrease in fall rate, calculated as the average fall rate for the first 3 months of baseline data compared with the average fall rate for the last 3 months of data collection.
2. The absence of major injuries for the last 5 months of data collection.

3. Active change participation, determined by whether teams had implemented more than four interventions during the project. Four was the median number of interventions implemented, as determined by examining team storyboards that summarized their changes.

Overall team performance was calculated by assigning one point for each factor achieved.

Results—Breakthrough Project

During the project, three teams dropped out; therefore, we had the potential to analyze results from 37 teams. Three teams did not submit any data, and three teams submitted incomplete data. Consequently, our analysis was limited to results obtained from 31 teams. The overall major injury rate decreased 62 percent (our method for calculating this change was described earlier), from 2.14 major injuries per 100 falls at baseline to 0.82 major injuries per 100 falls near project completion (paired t test $P = 0.097$). This difference represents an average reduction of 40.9 major injuries per month for the group of 31 teams analyzed. The overall fall rate decreased slightly over the project's duration from 6.84 to 6.42 falls per 1,000 bed-days of care.

By the second learning session, more teams reported a better understanding of team members' strengths and weakness (paired t test, $P = 0.06$), a view of problems as everyone's responsibility rather than someone's fault ($P = 0.04$), and more data collection from patients ($P = 0.04$).

During the first learning session, most of the teams felt mutual respect and were comfortable expressing their opinions. Fewer than half of the teams had previously worked together as a team, worked on improvement projects, or were familiar with process measurement. At the second learning session, virtually all of the teams reported learning new ideas and methods and indicated that the project added value to their facilities. Most teams also reported that they used information from other teams and shared information with others.

Several important differences in team characteristics were evident between the lowest performing teams (0 on our performance scale) and the higher performing teams (2 or 3 on our performance scale). High performers were much more likely to turn in their first monthly progress report ($F = 8.2$, $P = 0.01$) and, at the second learning session, to report better conflict management skills ($F = 6.08$, $P = 0.03$), more frontline support ($F = 14.5$, $P = 0.001$), more use of information from other teams ($F = 5.3$, $P = 0.03$), and stronger team leadership ($F = 4.9$, $P = 0.04$) than low performers.

We discovered that teams that used toileting interventions reduced their major injury rate by 2.7 falls per 100 (1.4 falls above the average). Similarly, teams that used signage, used or evaluated hip pads, or implemented environmental interventions reduced their rates of major injuries by 2.3 (almost 1.0 above the average). Teams that used staff education and postfall assessments also had reductions that were above average by 0.8 and 0.7 major injures per 100, respectively.

We found that a team's performance scores were positively correlated with adoption of signage programs ($r = 0.567$, $P < 0.001$), postfall assessment programs ($r = 0.342$, $P = 0.05$), environmental safety programs ($r = 0.330$, $P = 0.05$), and toileting programs ($r = 0.325$, $P = 0.05$). We also found a positive, but not statistically significant, relationship between

performance scores and the use of the Morse fall scale,[13] staff education, and utilizing or evaluating hip pads.

Also, large differences in the major fall-related injury rates existed between the higher performers and lower performers who submitted data. While lower performers decreased their major injuries by 11 percent, the higher performers decreased their major injury rate by 82 percent, to only 0.39 major injuries per 100 falls. By January 2002, the difference in major injuries per 100 falls reached statistical significance ($P = 0.032$).

We interviewed the teams 1 year after project completion to assess sustainability of their success. The majority of teams (82 percent) reported that they had stayed together as a team; 97 percent continued to collect data; 94 percent reported that they had maintained their gains; 82 percent said that they had spread changes to new locations; and 85 percent had begun to work on new topics. At followup, team performance was correlated with leadership support ($r = 0.614$, $P < 0.001$) and teamwork skills ($r = 0.377$, $P = 0.033$).[14]

Discussion—Breakthrough Project

As part of a facilitated quality improvement effort, 37 teams worked to reduce falls and fall-related injuries. There was a collective reduction in major injuries, and 78 percent of the teams were successful on at least one measure of performance. Participants reported learning from the project and found it valuable, despite the perception that they did not have enough time to achieve their aims, and that they lost some support from their leaders.

As we have found in previous interdisciplinary collaborative projects, teams that "hit the ground running" are the best performers in the long run. In this study, top performers not only turned in early progress reports, but also had more staff support, stronger leadership, and better conflict-management skills. While high performers were not more likely to have worked together as a team before the project, they seemed to come together as a working unit more quickly and did a better job of gaining a broad base of support from other staff at their facilities. Sustained improvement is also important, and we found that leadership support and teamwork skills were valuable for continued success.

Our analysis of the types of interventions that were associated with larger reductions in major injury rates may shed some light on which interventions a facility may want to try first. Teams that were the most successful at reducing major injuries were those that were able to identify systemic problems through the use of postfall and environmental assessments and then enact specific solutions, such as toileting programs, staff education programs, and the use of signs and hip pads.

We were intrigued to discover that the single intervention most highly correlated with our measure of performance was simple: signage that identified patients as being at high risk for falling was an extremely effective method of increasing staff awareness of fall risk and of enlisting the patient in fall prevention. We believe that the intervention was so effective because signage is commonly used in other areas of hospital care (i.e., infection precautions). Also, it was an easy intervention to achieve, it allowed staff to immediately align resources with needs,

and the results were immediately observable—all conditions consistent with factors that increase adoption of innovation.[15]

Finally, there is cost savings. While there is a moral imperative to help our patients avoid unnecessary suffering from a preventable fall, there also appears to be a strong financial incentive for facilities to avoid falls and the injuries that result. Using a range of $16,322 to $18,727 for the estimated cost of a hip fracture for the first year following injury,[16] the collective avoidance of 40.9 such injuries per month would result in a total cost savings of between $667,569 and $765,934 per month.

Development and Deployment of the National VHA Falls Toolkit

In response to the magnitude of the falls problem, and to share tools and successes from the Falls Collaborative Breakthrough Project and current research, the National Center for Patient Safety (NCPS) created a Falls Toolkit. The toolkit is available free of copyright for any individuals or institutions wishing to access it.[a] The Falls Toolkit continues to be the most frequently downloaded item on the NCPS Web site.

Staff employed in hospitals and other health care settings are actively engaged in improvement efforts to prevent patient falls. However, development, testing, and dissemination of a comprehensive set of tools for program development (eg, policies, guidelines, checklists, patient and staff education materials [PowerPoint® presentations, posters, pocket cards, technology resource guides]), deployment (conference calls and reporting systems), and evaluation (database management and reports) are beyond the resources of many health care institutions. The VHA addressed this gap through the development and deployment of the Falls Toolkit and the decision to make this compendium of resources publicly available.

In an effort to ensure that the toolkit would be useful, NCPS beta-tested the toolkit within VHA facilities and with subject matter experts. The facilities were asked to review the contents of the toolkit for a month and provide feedback. They found the toolkit useful, practical, and easy to understand. Based on this feedback, NCPS added articles to the annotated resource list, changed the format of the toolkit, modified the videos, and added sections.

Inside the Falls Toolkit

The Falls Toolkit is a boxed set containing a notebook and a media box. All materials are available electronically and free of copyright for use by individuals and organizations.

The Falls Toolkit notebook. The notebook consists of a three-ring binder containing 11 tabbed sections. The inside binder cover includes a CD-ROM that contains the information provided on the Falls Toolkit Web site, a Morse[13] Fall Scale pocket card, two tri-fold brochures, and three 8½" x 11" posters and fliers. The 11 tabbed sections are as follows:

---

[a] The Falls Toolkit is available at www.va.gov/ncps/SafetyTopics/fallstoolkit/index.html.

1. Contents: the locations of all resources available in the toolkit.
2. Instructions: information on how to use the toolkit.
3. Background: general information on falls and fall prevention.
4. Falls team: how to develop an interdisciplinary falls team.
5. Falls policy: what should be addressed in a comprehensive fall prevention policy and an example policy.
6. Interventions: things to do to reduce the number of falls and fall-related injuries.
7. Measuring success: tools to measure improvement in preventing falls and fall-related injuries due to interventions.
8. Resources: additional articles and resources categorized by topic.
9. Video 1: "Performing a Balance Assessment" (Audience: rehabilitation therapists).
10. Video 2: "Hip Protectors in an Inpatient Setting" (Audience: caregivers).
11. Video 3: "Protecting Your Hips with Hip Protectors" (Audience: patients).

The Falls Toolkit Media Box. The media box contains three 11" x 17" posters; three DVDs, each containing one of the aforementioned videos; one VHS tape containing all three videos; and a small box containing two styles of sample buttons for identifying falls prevention advocates or resources on units or shifts.

The Falls Toolkit Web site. The Falls Toolkit Web site contains all the printed information and tools and some additional materials, such as the Technology Assessment Guide and the Educational Resource Guide.

The Web site is organized into five sections:

1. Getting Started: orientation materials for the Falls Toolkit.
2. Notebook: PDF and MS Word® versions of the information contained in the notebook.
3. Media Tools: PDF versions of the posters, fliers, brochures, and button designs.
4. Resources: PDF and Word® versions of the additional resources (Technology Assessment Guide and Educational Resource Guide), PowerPoint® presentations, Excel® files, button designs, and links to relevant Web sites.
5. Contact Information: instructions on how to contact NCPS for more information, questions, or comments.

Using the Falls Toolkit

The purpose of the Falls Toolkit is to help facilities create and improve comprehensive falls prevention programs. Teams examining cases of falls with serious consequences can use the toolkit to analyze the data collected as part of a root cause analysis (RCA) and develop actions and outcome measures to reduce falls and fall-related injuries. The Falls Toolkit guides facilities in organizing interdisciplinary falls teams and in implementing evidence-based interventions based on fall risk or on a patient's areas of risk.

Toolkit User Ratings

Participants were asked to rate the overall organization of the Falls Toolkit and its impact on their particular facility. The organization of the hard copy version of the Falls Toolkit and the Web site were both rated highly: 4.05 and 4.00, respectively, based on a 5-point scale.

In addition to the overall ratings, participants were also asked to rate the usefulness of the individual portions of the Falls Toolkit. The most popular physical item in the toolkit was the Morse[13] Fall Scale pocket card, with 30.6 percent of respondents finding it highly useful. The most popular section of the Falls Toolkit Notebook was the interventions section, which also ranked as the section with the highest usage.

The questions regarding the individual portions of the Falls Toolkit were divided into questions about the materials in the media box and the contents of the notebook. The most popular items in the media box were the posters for educating patients, family, and staff. These items had the highest rate of use, and of those who used them, 17 percent found them to be highly useful. The least popular item was the falls advocate buttons, with 42.9 percent of those who used them finding them to be of little or no use.

The materials that are available on the Web site and the CD-ROM were also rated on usefulness. The most popular item that was only available electronically was the Educational Resource Guide. The majority of participants have used it, and of those, 20.3 percent found it highly useful.

The questionnaire asked participants to indicate how they had used the Falls Toolkit, such as for creating or modifying a falls policy or for tracking changes in the rate of falls or fall-related injuries. The most popular use for the Toolkit was creating or modifying the falls prevention policy at the participants' facility (59.3 percent), followed closely by implementing new fall-prevention interventions (54.2 percent) and tracking changes in fall rates or fall-related injury rates (47.9 percent).

The Falls Toolkit consolidates lessons learned from the Falls Collaborative and from current research in an easily accessed and well-organized manner. The electronic version of the contents is available and has been accessed and downloaded thousands of times by individuals, institutions, and agencies focused on falls preventions. The continued popularity of this product substantiates the public interest and desire for tools and products that are practical and field-tested to address the important issue of preventing falls and the injuries that result from falls.

VHA's National Falls Data Collection Project

VHA's Falls Data Collection Project (FDCP) grew out of a desire to create an incentive for people to use the Falls Toolkit and to develop some outcome measures for the effectiveness of falls programs. Participating facilities collected and reported various data elements from January 2004 through March 2006.

Of note for other health care systems interested in initiating a similar project, we were able to voluntarily recruit approximately one-third of the VHA facilities to participate in this project and report data for eight quarters (2 years). Participating facilities were attracted because they could receive their own information back in a useful form (e.g., charts, graphs, tables) and as comparative aggregated data. They also were attracted because they had regular access to teleconferences with falls experts. In addition, we scheduled calls to explain the data and reports and answer logistical questions.

We purposefully kept the number of captured data elements to a small set, focusing on the metrics that seemed most useful. In addition to fall and injury rates, we provided analysis on the following question: Were those that fell previously identified as being high risk, and if so, were interventions in place at the time of the fall? By the completion of the project, we saw a major improvement on this front, reflecting heightened sensitivity to screening for fall risk and implementing interventions. Major injury rates showed modest changes across the 2 years. However, the rates were low to begin with, and selection bias may have led to high-performing facilities self-selecting to participate. Participants' evaluation of the impact of the project was 4 on a 5-point scale (1 = no impact, 5 = highest impact). This project was accomplished with a very small staff of 15 percent FTE project director and 50 percent FTE data analyst/project manager.

Methods—Data Collection

Seventy VHA facilities initially volunteered for the project, and 65 ultimately provided data every quarter for 2004 to 2006. The data were sent to NCPS using a standard data collection tool on the last day of the month following the end of each quarter. At the end of the following month, NCPS sent reports back to facilities that compared the facility data to the aggregated national data. These reports were provided in hard copy and through interactive graphs and tables saved on a CD.

Data were collected, analyzed, and reported for three unit types: acute care, long-term care, and behavioral health. The behavioral health data were separated out because these patients often had a longer stay than acute-care patients and were not as old or frail as long-term care patients. Behavioral health units often had patients whose primary diagnosis was a psychiatric disorder, such as schizophrenia. Facilities provided the following data elements for each unit:

- Bed-days of care (BDOC).
- Number of unique patients who fell, divided into the following categories:
  - o Overall number that fell.
  - o Overall number that fell more than once in a quarter (repeat fallers).
  - o Identified as high risk.
  - o Identified as high risk and had interventions in place at the time of the fall.
  - o Identified as high risk and unknown whether interventions were in place at the time of the fall.
  - o Identified as high risk and had no interventions in place at the time of the fall (calculated rather than collected).

- Number of falls broken out by the following:
  - Absolute number of falls.
  - No injury or minor injury.
  - Major injury.
  - Death.
  - Hip fracture (a subset of the major injury).

These data were analyzed and reported back to facilities each quarter. The following measures were provided broken out for behavioral health, long-term care, and acute care:
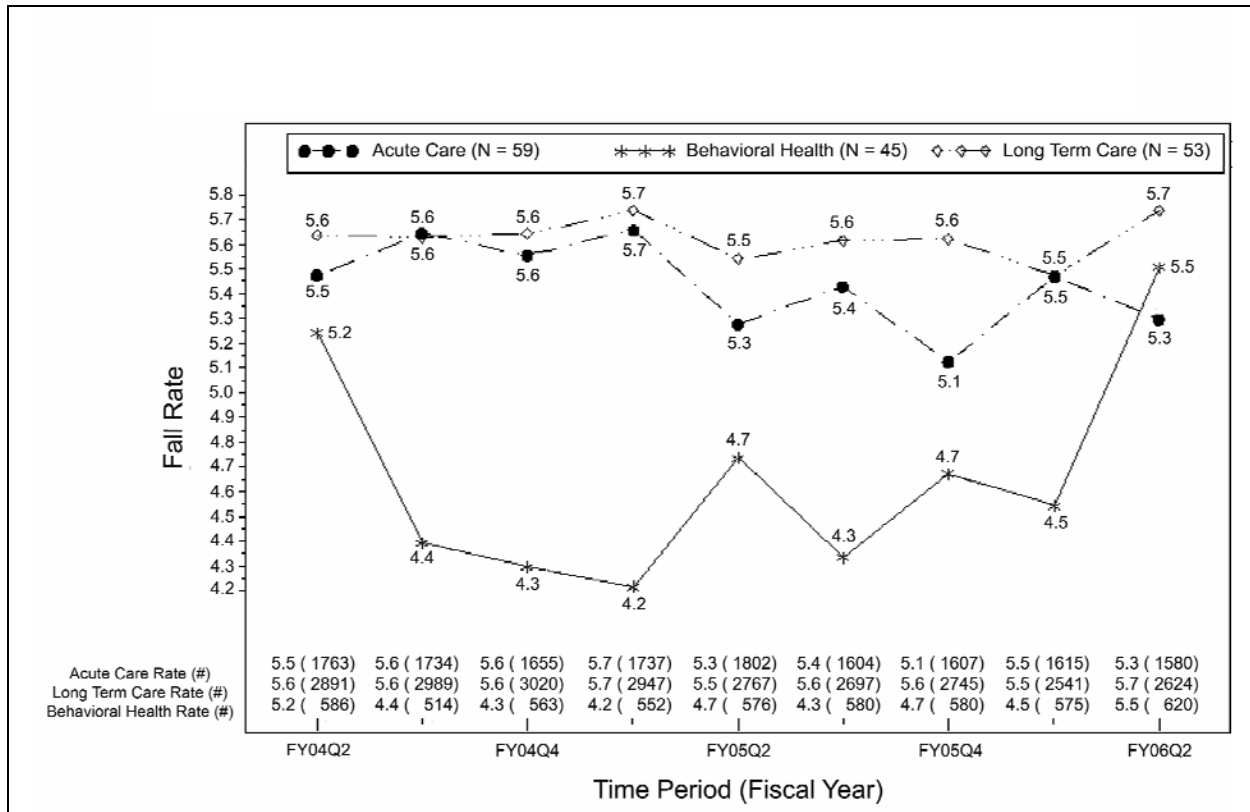
- Fall rate per 1,000 BDOC.
- No or minor injury rate per 1,000 BDOC.
- Major injury rate per 1,000 BDOC.
- Hip fracture rate per 1,000 BDOC.
- Percent of patients who fell and were identified as high risk.
- Percent of patients who fell and were identified as high risk and:
  - Had interventions in place at the time of at least one fall.
  - Had no interventions in place at the time of any fall.
  - Unknown whether interventions were in place at the time of any fall.
  - Percent of patients who fell more than once in the quarter.
  - Percent of falls resulting in injury.

Results—Data Collection

Over the course of the 2 years, there was a reduction in major injuries as a percent of falls in all three unit types. This change was especially apparent in the behavioral health setting, with a relative rate reduction of 64.3 percent.

This project had a significant effect on the interventions that were in place at the time of a fall. As shown in Figure 1, the percent of high-risk patients who fell and it was unknown whether interventions were in place at the time they fell decreased substantially over the course of the project.

The fall rate per 1,000 BDOC for all three types of units remained relatively stable over the course of the data collection project. With the exception of the last quarter, the fall rate for behavioral health remained lower than both the acute care and long-term care settings. The smaller population in our study for behavioral health often led to higher variation in the fall rates and injury rates.

Figure 1. Comparison of national fall rate per 1,000 bed days of care.

Forty-two facilities submitted participation questionnaires, resulting in a 67.7 percent response rate. The mean rating for the overall impact of their participation in the project was 4.00 (0.826 SD) on a scale of 1 to 5 (1 = the lowest impact, 5 = the highest impact).

When facilities were asked about their reasons for participating in the project, they were able to indicate multiple reasons, as shown in Table 1.

Table 1.   Reasons for participation in the Falls Data Collection Project

Reason for participation	N (%) (N = 42)
Report of national data	27 (64.3)
Report of own facility's data	25 (59.5)
Ability to opt out of an aggregated review	18 (42.9)
Other:	13 (31.0)
Benchmarking	8 (18.6)
Picture to use for awareness education with staff	1 (2.3)
Decision before I came	1 (2.3)
Help prevent falls	1 (2.3)
Institutional baseline	1 (2.3)
Making business case for changes	1 (2.3)

On the participation questionnaire, patient safety managers were asked three open-ended questions regarding their participation:

- How did you use the information provided to you?
- In what specific ways did you change your program based on this information?
- What actions are you the most proud of?

The responses are summarized here.

How did you use the information provided to you? Facilities had several uses for the information provided as part of the Falls Data Collection Project (Figure 2). Their responses could fall into more than one category. The six "other" responses (14.3 percent) that did not fit into any category included incorporating the data into an RCA, using the data for policy revision or team use, and justifying the need to purchase hip protectors and bed and chair alarms.

In what specific ways did you change your program based on this information? There were many ways that facilities changed their programs based on the information, for example:

- Changed or implemented a fall risk assessment (14.3 percent).
- Changed the system of tracking falls data, either by changing incident report forms or the measures they used (11.9 percent).
- Honed in on an area of vulnerability (9.5 percent).
- Changed or implemented a falls policy (7.1 percent).
- Changed or implemented a falls team (7.1 percent).
- Increased use of documentation or falls prevention interventions (4.8 percent).
- Became more proactive in falls prevention (4.8 percent).

In addition, 21.4 percent of facilities changed their programs in other ways, such as by implementing specific interventions, modifying the change-of-shift report, and changing benchmarking data. Here are some of their responses:

- Changed fall reporting to an electronic form to encourage accurate reporting. Amended policy to include Fall Prevention Toolkit information. Using toolkit guidance, posted on nursing units fall prevention tools based on the Morse[13] Fall Scale rating.
- Implemented the Morse[13] Fall Scale, changed the nursing assessment form to include falls risk; implemented visuals for patients at risk for fall to remind them to call for help; implemented a toileting program.
- Established a patient falls committee with stronger interdisciplinary approach to managing patients at risk for fall and improving the falls program.
- Changed from counting falls to a fall rate based on BDOC. Displayed the comparison of the national rate against our rate.
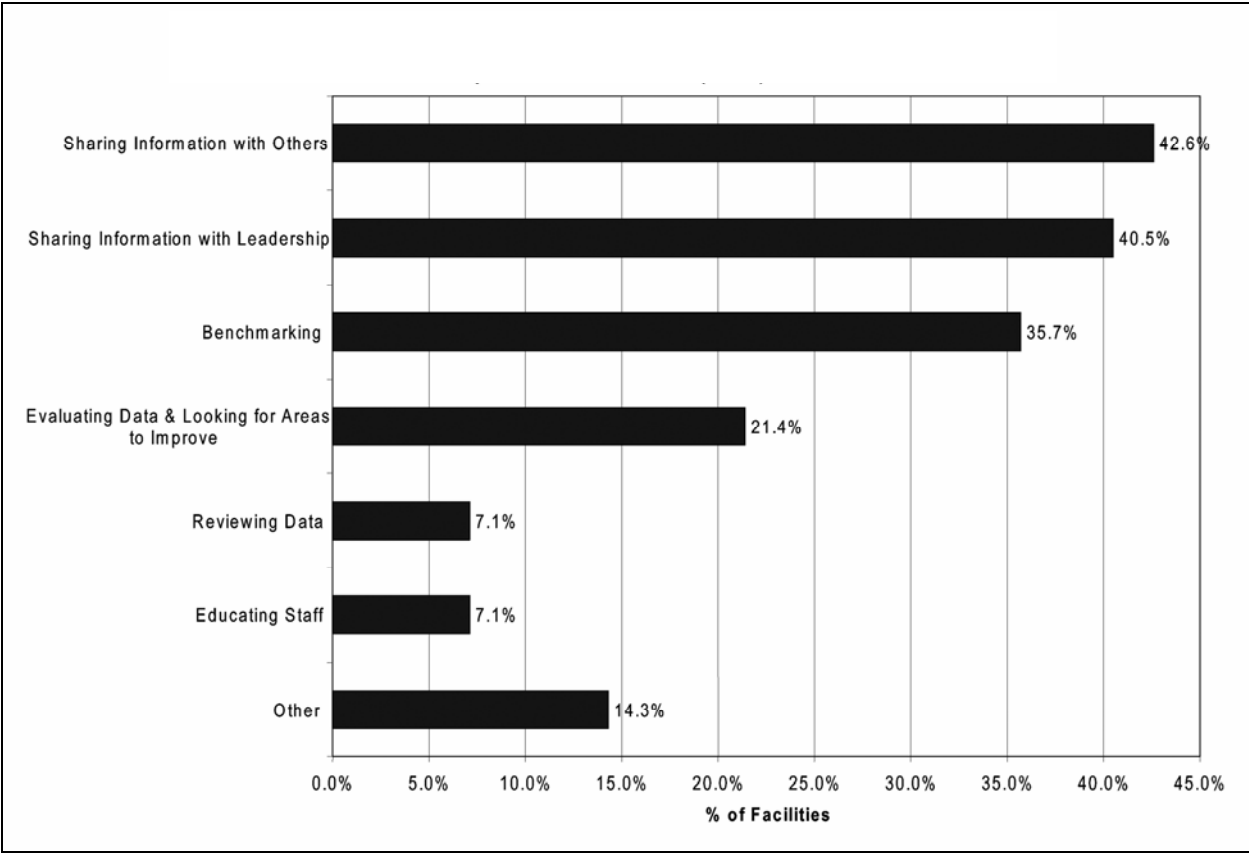
Figure 2. Reasons for participating in the Falls Data Collection Project Participation Questionnaire (n=42).

What actions are you most proud of and why? Several facilities mentioned that the implementation of a specific intervention, such as a transfer protocol or a "fall room," was the action of which they were most proud (11.9 percent). Other actions included better or increased documentation (9.5 percent); increased awareness or motivation (9.5 percent); decreased injury or fall rates (9.5 percent); better or increased use of interventions (7.1 percent); increased reporting (7.1 percent); and education for patients, family, or staff (4.8 percent).

Patient safety managers were also asked to rate the value of the Falls Data Collection Project products on the participation questionnaire. These products included the data provided quarterly on both CD-ROM and hard copy, two newsletters, and two conference calls on the data. The results are summarized in Table 2. The data supplied on CD-ROM and in print copy and the newsletters were found to be useful or highly useful by 95.2 and 85.7 percent of patient safety managers, respectively. In addition, 80.9 percent of facilities found the conference calls on the data to be at least useful.

13

Table 2.   Usefulness of products provided by NCPS for Falls Data Collection Project participation questionnaire

Product	N (%) (N = 42)			
	Highly useful	Useful	Little/no use	Did not use/attend
Data supplied on CD-ROM & hard copy	20 (47.6)	20 (47.6)	0 (0)	2 (4.8)
Newsletters	15 (35.7)	21 (50.0)	1 (2.4)	5 (11.9)
Conference calls on data	15 (35.7)	19 (45.2)	3 (7.1)	5 (11.9)

Results

This project demonstrated the appeal to facilities of participating in a project that provides falls data on operationally relevant measures in a timely fashion. Substantial improvements were witnessed in the proportion of falls resulting in major injuries, in the identification of patients at high risk, and in implementing interventions. Building upon the falls collaborative and the contents of the Falls Toolkit, this project continued the maturation of the falls programs at various VHA facilities.

Future Recommendations—Falls Interventions

While most studies on fall interventions have focused on reducing the number of falls, we believe that it is injuries that cause problems for our patients. Thus, reducing fall-related injuries should be the focus for future interventions, as well as targeting repeat fallers whose risk for injury increases with each fall. Our recommendation is that institutions move to analyzing falls according to the three categories described by Morse: accidental falls, anticipated physiologic falls, and unanticipated physiologic falls.[13]

Categorizing falls in this manner will allow facilities to direct action plans accordingly.[1] Most falls are accidental, and the environment should be examined for possible causes. However, if the majority of falls are anticipated physiologic falls, the focus should be on protecting the patient from falling by implementing all possible interventions for these high-risk patients. We also believe that more focused research is needed on patients who experience repeat falls, determining the effectiveness of team communication, and care-planning redesign.

These results provide some evidence that facilitated quality improvement efforts are perceived as useful to teams, and they can be successful in helping facilities to reduce major injuries due to falls and prevent loss of function and life due to falls. Falls can be prevented, and severity of fall-related injury can be reduced.

Our results also suggest that patient safety initiatives have the potential to generate organizational cost savings. Furthermore, the evidence indicates that better organized teams with good leadership and staff support are more successful. The evidence also shows that once teams

are established, the most fruitful interventions include conducting environmental interventions, postfall assessments, toileting programs, use of hip pads, and identifying high-risk patients through signage.

Additional leadership investment in teams would continue to advance these patient safety improvements. VHA's leadership and commitment to patient safety is unparalleled nationally, and this project reflects the cooperative efforts of staff, administrators, quality managers, and researchers to promote our veterans' freedom, independence, and safety.

Author Affiliations

VHA National Center for Patient Safety, Ann Arbor, MI.

Address correspondence to: Erik J. Stalhandske, MPP, MHSA, VHA National Center for Patient Safety, 24 Frank Lloyd Wright Drive, Lobby M, Ann Arbor, MI 48106; Telephone: 734-930-5881; cellphone: 734-657-7726; e-mail: Erik.stalhandske@va.gov.

References

1. Mills PD, Waldron J, Quigley PA, et al. Reducing falls and fall-related injuries in the VHA system. J Healthcare Saf 2003; 1: 25-33.

2. Tinnetti ME, Mendes de Leon CF, Doucette JT, et al. Fear of falling and fall-related efficacy in relationship to functioning among community living elders. J Gerontol 1994; 49: M140-M147.

3. Nevitt MC. Falls in the elderly: Risk factors and prevention. In: Masdeu JC, Sudarsky L, Wolfson L eds, Gait disorders in aging. Philadelphia: Lippincott-Raven; 1997.

4. Kosorok MR, et al. Restricted activity days among older adults. Am J Public Health 1992; 82: 1263-1267.

5. Rubenstein LZ, Josephson KR, Robbins AS. Falls in the nursing home. Ann Intern Med 1994; 121: 442-451.

6. Englander F, Hodson TJ, Terregrossa RA. Economic dimensions of slip and fall injuries. J Forensic Sci 1996; 41: 733-746.

7. Guideline for the Prevention of Falls in Older Persons. J Am Geriatr Soc 2001; 49: 664-672.

8. Leape L, Kabcenell A, Berwick D, et al. Breakthrough series guide: Reducing adverse drug events. Boston, MA: Institute for Healthcare Improvement; 1998.

9. Weeks W, Mills P, Dittus R, et al. Using an improvement model to reduce adverse drug events in VHA facilities. Joint Comm J Qual Improv 2001; 27: 243-254.

10. Office of the Medical Inspector, Veterans Health Administration. VA Patient Safety Event Registry: First Nineteen Months of Reported Cases Summary and Analysis. Washington, DC: Veterans Health Administration; 1999.

11. Langley G, Nolan K, Nolan T, et al. The improvement guide: A practical approach to enhancing organizational performance. San Francisco: Jossey-Bass; 1996.

12. Department of Veterans Affairs, Veterans Health Administration National Center for Patient Safety. Patient Personal Freedoms and Security, Fall Prevention and Management; 2001.

13. Morse J. Preventing patient falls. Thousand Oaks, CA: SAGE Publications, Inc; 1997.

14. Neily J, Howard K, Quigley P, et al. One-year follow-up after a collaborative breakthrough series on reducing falls and fall-related injuries. Joint Comm J Qual Pat Saf 2005; 31(5): 275-285.

15. Rogers E. Diffusion of innovations. New York: The Free Press; 1995.

16. Brainsky A, Glick H, Lydick E, et al The economic cost of hip fractures in community-dwelling older adults: A prospective study. J Am Geriatr Soc 1997; 45: 281-287.