



# Decreasing Patient Agitation Using Individualized Therapeutic Activities

A nurse-led quality improvement project yields promising results.

**OVERVIEW:** Hospitalized patients who are suffering from cognitive impairment, delirium, suicidal ideation, traumatic brain injury, or another behavior-altering condition are often placed under continuous observation by designated “sitters.” These patients may become agitated, which can jeopardize their safety even when a sitter is present. This quality improvement project was based on the hypothesis that agitation can be decreased by engaging these patients in individualized therapeutic activities. The authors created a tool that allowed continuous observers to identify a patient’s abilities and interests, and then offer such activities to the patient. Data were collected using a scale that measured patient agitation before, during, and after these activities. The authors found that during the activities, 73% of patients had decreased levels of agitation compared with baseline, and 64% remained less agitated for at least one hour afterward.

The intervention appeared effective in reducing levels of agitation in selected patients who were receiving continuous observation on nonpsychiatric units at a large, urban level 1 trauma center. Many patients expressed gratitude for the diversion from their health issues. Further investigation into the effectiveness of this intervention and its impact on the use of medications or restraints is warranted.

**Keywords:** agitation, cognitive impairment, continuous observation, delirium, psychiatric disorder, suicidal ideation, therapeutic activity, traumatic brain injury

Hospitalization is inherently stressful: the patient finds herself or himself sick or injured, feeling vulnerable in an unfamiliar environment. A perception of loss of control can lead to anxiety or agitation, and this may be especially likely in patients with cognitive or psychiatric disorders. Such patients are known to be at increased risk for falls and for self-harm through treatment disruption or impulsive behavior. Traditional nursing interventions to minimize these risks, such as using exit alarms to limit independent mobility or disguising necessary medical equipment, are often ineffective with this patient population. Thus continuous observation is often employed as a necessary safety strategy.

Most hospitals have protocols or guidelines governing the use of continuous observation. It’s usually

provided by a member of the nursing staff, such as a nursing assistant, but nursing students or other trained individuals can also serve in this capacity. This observer, often referred to as a “sitter,” is responsible for keeping the patient safe. The job description might include providing personal care and mobilization assistance, or it might be limited to observing the patient and intervening if the patient exhibits dangerous behaviors.

Continuous observation can be challenging for various reasons. For hospital administrators, it’s costly to pay a staff member to observe a single patient for an entire shift. It’s also difficult to anticipate how many sitters will be needed for a given shift, since the need varies depending on the number and characteristics of patients who might require continuous observation.



Photo by Lanny Nagler, courtesy of Hartford Hospital.

Nursing assistants working per diem or from a float pool are often used as sitters. Still, it can be hard to maintain enough qualified staff in this capacity. It may mean reallocating scheduled staff—and if a staff member must be reassigned from caring for several patients to observing just one, this can cause a shortage of caregivers for other patients.

National patient safety goals have focused upon providing a safe environment for hospitalized patients.<sup>1,2</sup> Although continuous observation is an intervention typically used for selected high-risk patients, the research does not appear to support its use—either as a cost-effective measure or as a means of preventing patient harm or improving patient satisfaction.<sup>3,4</sup> Effective alternatives have been described in the literature. At one hospital, the Specialized Adult-Focused Environment (SAFE) unit program involves grouping high-risk patients in close proximity, which allows staff “to attend to them frequently if not constantly” and to provide individualized diversionary activities as part of the plan of care.<sup>5</sup> The hospital has reported that this approach improved patient care while significantly decreasing sitter hours and costs. Another model, the Delirium Room model, involves creating a four-bed patient area with 24-hour

nursing presence and emphasizing nonpharmacologic approaches to care.<sup>6</sup> Although more research is needed, there is evidence suggesting that this approach can lower negative outcomes (such as loss of function and higher mortality) that are associated with delirium. Both programs incorporate a therapeutic focus to decrease agitation and anxiety, which can disrupt treatment and put patients at higher risk for falls and injury.

**Our quality improvement project.** Our hospital, which has more than 850 beds, is an inner-city level 1 trauma and teaching center. It has consistently used an average of 40 full-time employees as sitters annually. But such staffing has often proved challenging. At times unit staff members had to be reassigned to meet this need, which often meant increased patient workloads for other staff. In response, in 2007 the hospital created a special float pool. Known as the Specially Trained and Responsive (STAR) team, it’s made up of 100 students working per diem as nursing assistants while completing nursing degrees. This has improved the hospital’s ability to provide continuous observation when necessary.

Yet during monthly departmental work group meetings, nursing staff from various departments

## Items Used for Therapeutic Activities

### Disposable (single-patient use)

Playing cards and theme cards  
Stuffed animals  
Dolls  
Twiddle pets  
Sponge puzzles  
Large-piece jigsaw puzzles  
Crossword, word search, and sudoku puzzles  
Activity apron  
Hearing enhancer  
Picture communication board  
Books  
Magazines and calendars with colorful pictures  
Purses with accessories  
Flashing light-up “puffer” balls  
Drawing paper  
Coloring books for adults  
Paints and paintbrushes  
Pens, markers, crayons  
Yarn for knitting  
Craft kits

### Reusable items (cleaned between uses with alcohol or other cleaning solution)

Large Legos  
Portable CD and cassette tape players with headphones  
DVD player  
DVDs, cassette tapes, music CDs  
Wooden puzzles  
Wooden blocks  
Plastic tools (such as wrenches, screwdrivers)  
Dice  
Games (chess, checkers, dominoes, Connect 4, Scrabble, Boggle)  
Magnifying glasses (regular and lighted)  
Reading glasses  
Chimes  
Toy cars  
Knitting needles

described the tedious nature of “sitting” with, and the discomfiture of “looking at,” a single patient for eight hours. Moreover, some patients had reported feeling “watched and intruded upon”—feelings that could increase their anxiety and agitation. In short, there appeared to be a lack of patient and staff satisfaction with the sitter’s role, and we began to ask ourselves whether staff assigned this role could be more involved with these patients. For many years the hospital has trained volunteers in how to engage patients in various activities, with favorable responses. Nurses and patient care attendants have also received education, during orientation and geriatric resource training

classes, about the potential value of therapeutic activities for patients. Yet this strategy was rarely implemented for patients receiving continuous observation.

In 2011, we decided to explore alternative and creative ways to provide a safer, more supportive environment for these patients. To assemble a project team, the nursing coordinator (PV) asked for volunteers from our nursing staff, and two of us (CW and KT) responded. Two nursing assistants from the STAR Team (MB and AM) were also selected to participate, based upon their work performance, project interest, and ability to balance work and school demands. (A third nursing assistant [SL] joined the project later.) The purpose of the project was to offer individualized therapeutic activities to patients who were receiving continuous observation and measure the effect on their levels of agitation. Our goal was not to decrease the use of continuous observers; rather, we wanted to maximize the effect of an observer’s presence on the patient’s safety and well-being. We chose agitation as the target behavior we wanted to decrease, since it was the most common reason for the use of continuous observation in our hospital. We began by searching the literature.

## BACKGROUND

Agitation has been defined as “a state of chronic restlessness and increased psychomotor activity generally observed as an expression of emotional tension and characterized by purposeless, restless activity. Pacing, talking, crying, and laughing sometimes are characteristic and may serve to release nervous tension associated with anxiety, fear, or other mental stress.”<sup>7</sup> In hospitalized patients, agitation can have multiple causes, including stress, pain, inactivity, frustration, confusion, and an inability to communicate. As Segatore and Adams note, agitation levels can range from mild, in which harm is unlikely, to severe, in which the patient’s verbally or physically violent behaviors can potentially cause harm to self or others.<sup>8</sup> Patients at high risk for agitation include those with cognitive decline or dementia, multiple medical or psychiatric diagnoses, or polypharmacy.<sup>8</sup> In the hospital setting, patients who are agitated are often physically restrained; but this usually increases their agitation and worsens disruptive behaviors.<sup>9</sup> Indeed, the use of restraints has been associated with lower cognitive performance, lower functionality in activities of daily living, decreased psychological well-being, and increased risk of serious injury.<sup>9,10</sup>

Nonpharmacologic approaches to patients who are agitated can be effective. The hospitalized patient’s cognitive and functional abilities, as well as her or his interests, should be matched with activities that might elicit a sense of purpose, accomplishment, comfort, or enjoyment. Such activities can be cognitively engaging and multimodal. For example, activities that involve

physical action (such as ball tossing), social interaction (such as board or card games), or sensory input (such as listening to music or blowing scented bubbles) can all decrease agitation. They can serve as distractions, elicit positive memories, encourage cooperation, and provide a constructive outlet for restlessness.

Music has long been useful in promoting healing. In the mid-1800s, Florence Nightingale noted that playing music for hospitalized patients often had beneficial effects and could “[take] away the nervous irritation of their incapacity.”<sup>11</sup> Now there is evidence that music can lower levels of pain, stress, anxiety, and depression. In a review of 42 randomized controlled trials testing music interventions for surgical patients, Nilsson and colleagues found that music lowered patients’ anxiety and pain in more than 50% of the studies.<sup>12</sup> In one study, patients who listened to music intraoperatively reported significantly lower pain intensity and required less ketobemidone (a morphine equivalent used in Scandinavia) compared with controls.<sup>13</sup> In another study, Costa and colleagues found that patients who listened to music while undergoing colonoscopy required less sedation and had lower pain scores than controls.<sup>14</sup> Lai and Good found that listening to soothing music at bedtime significantly improved sleep quality in older adults.<sup>15</sup> People with dementia have also been shown to benefit from music interventions, demonstrating decreases in disruptive behaviors, anxiety, and depression.<sup>16-19</sup>

Arts-based therapeutic activities such as painting and origami, which promote creative expression, have been found to be effective in relieving psychological distress in hospitalized patients with dementia, anxiety, or depression.<sup>20</sup> A growing body of research acknowledges the role of art therapy in helping patients to feel empowered and manage pain.<sup>21,22</sup>

There is some evidence that multisensory stimulation can improve mood, functionality, and behavior in cognitively impaired patients. Such interventions can include tactile, auditory, and visual elements aimed at promoting comfort, purposeful activity, and socialization. Experts suggest that items and activities be chosen carefully to reflect patient preferences, cognitive capacity, and physical abilities.<sup>23</sup> In a study conducted among people with Alzheimer’s disease, Ward-Smith and colleagues tested “multisensory stimulation environments” that included elements such as fiber optic lights, aromatherapy, and wind chimes.<sup>24</sup> The intervention decreased the incidence of disruptive behaviors, including pacing, exit seeking, hitting, yelling, and aggressive talking.

The literature convinced us that our continuous observers might have more therapeutic effect if they incorporated individualized multisensory interventions into care. We decided to introduce this new approach on a small scale and measure its effectiveness.

## METHODS

The first step was to characterize the needs of patients who were assigned to continuous observation. Several months of data, collected retrospectively, revealed that an average of eight patients per day received such observation in the hospital’s medical, surgical, and specialty inpatient units. (The inpatient psychiatric units, which are located on an adjoining campus, were excluded from the project.) Patients were categorized according to the reason they were under continuous observation. The majority of the patients were deemed at risk for harm as a result of impulsivity and agitation, secondary to dementia, delirium, traumatic brain injury, or substance dependence. A small percentage of the medical patients had reported suicidal intent.

Most of the patients under continuous observation were experiencing both anxiety and agitation, leading to disruptive behaviors and attempts to walk unassisted. Despite intensive supervision, they were disrupting treatment and experiencing falls. When restraints were used, the level of agitation frequently escalated. We acknowledged that continuous observation, as it was currently being performed, was less than effective. The observers were then encouraged to try engaging the patient in an activity and to note the patient’s response. Many patients showed interest in the offered activity and appeared to enjoy it. It was at this point that we decided to explore patients’ responses to individualized activities in a measurable way.

## When restraints were used, the level of agitation frequently escalated.

To measure agitation levels before, during, and after an individualized therapeutic activity (the intervention), we chose the Agitated Behavior Scale (ABS). Developed by Bogner, this 14-item scale was originally designed to assess agitation during the acute phase of recovery from an acquired brain injury and is available free online ([www.tbims.org/combi/abs/abs.pdf](http://www.tbims.org/combi/abs/abs.pdf)).<sup>25</sup> The ABS has also been used by nurses and therapists to assess agitation in nursing home residents with progressive dementias, primarily Alzheimer’s disease.<sup>26,27</sup> The scale measures agitation based on 14 observable behaviors that are scored by the rater. Each behavior can be scored as 1, absent; 2, slight; 3, moderate; or 4, extreme. Total scores can range from 14 (no agitation) to 56 (severe agitation). This tool has demonstrated good concurrent and construct validity, interrater reliability, and internal consistency.<sup>28</sup>

At the start, our project involved just two nursing students working as continuous observers and trained in the use of the ABS. They carried out the therapeutic activities and completed the ABS on all 42 patients to whom they were assigned over a three-month period,

from August 1 through October 31, 2011. Following this period, 10 additional continuous observers from the STAR team were trained in the use of the scale and the implementation of therapeutic activities. During the next four months, from November 1, 2011, through February 29, 2012, data were collected on an additional 32 patients receiving continuous observation.

To help us choose activities likely to be more effective for a given patient, we developed a Personal Approach Form and used it to gather and record information about the patient's lifestyle, hobbies, and leisure activities (to see Figure 1, go to <http://links.lww.com/AJN/A49>). This form was attached to the ABS and used by the participating continuous observers. The observer completed the form with the patient, and then left it in the room as a guide for future interactions with other observers. If the patient was nonverbal or unable to answer appropriately, the observer was instructed to ask a family member or significant other to complete the questionnaire on the patient's behalf.

## In most cases, regardless of the activity chosen, the intervention had positive effects on the patient.

Based on what we learned from patients' responses to the questionnaire, a variety of items were collected and placed in a central location near the nurse staffing office, where continuous observers report to get their assignments. Some of the most common requests were for reading glasses, crossword puzzles, playing cards, checkers, stuffed animals, flashing light-up "puffer" balls, and CD players with classical music CDs (for a more complete list, see *Items Used for Therapeutic Activities*). As the project evolved, at the start of the second data collection period, the items were placed on a rolling cart and brought by a volunteer to the room of each patient receiving continuous observation. The Personal Approach Form was administered before choosing and implementing a therapeutic activity; the ABS was administered before, during, and after each such intervention. At the end of each shift, the continuous observer returned the ABS form to the staffing office. All forms were collected by the program team for analysis.

### RESULTS

**Quantitative.** A convenience sample of 74 patients receiving continuous observation was evaluated using the ABS and the Personal Approach Form. These patients, 60 men and 14 women, ranged in age from 17 to 94 years (mean, 58.7 years). They were receiving continuous observation for behaviors related to

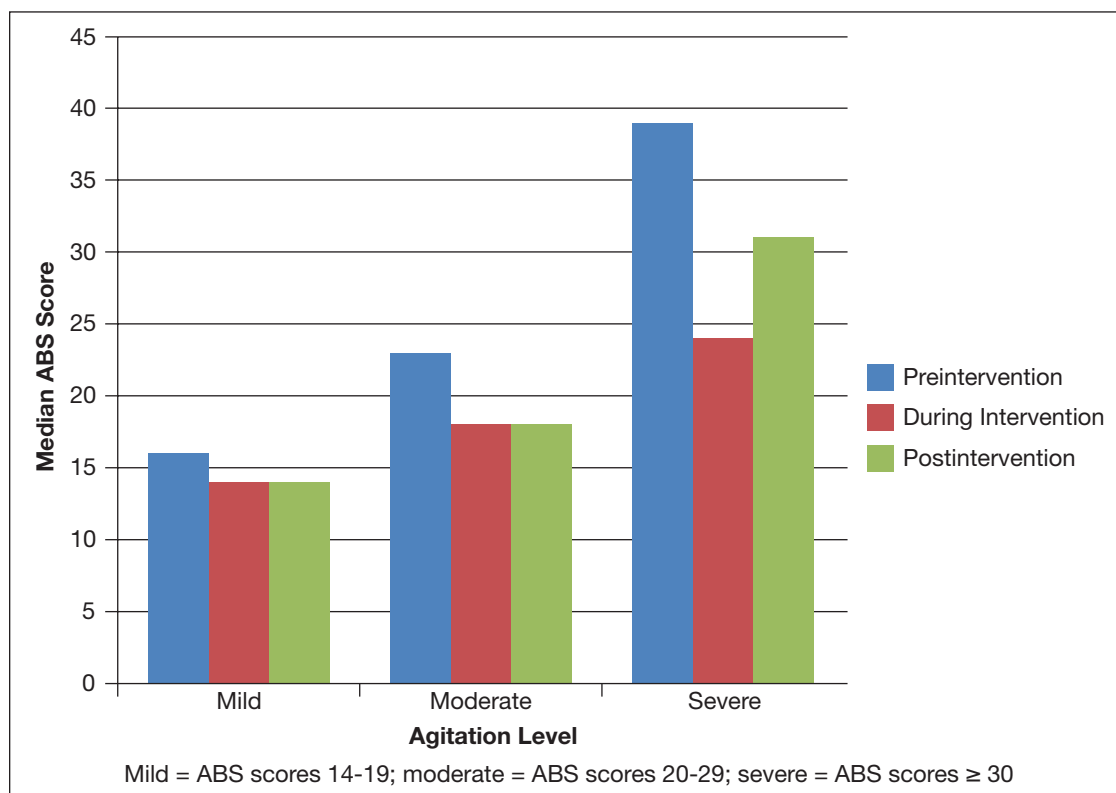
dementia, delirium, alcohol withdrawal, traumatic brain injury, or suicidal ideation.

Overall, most patients showed a marked decrease in agitation during the individualized therapeutic activity, and this decrease was often sustained for a period of time afterward. Median ABS scores for the patients were calculated for the periods before, during, and after the activity; these are displayed in Figure 2. The patients' ABS scores recorded before the intervention were grouped into categories reflecting the level of agitation, as follows: scores of 14 to 19, mild agitation; 20 to 29, moderate agitation; 30 or higher, severe agitation.

Agitation levels decreased among patients within all three groups. The largest effect was seen in the patients who had the highest agitation scores before the intervention. For 54 of the 74 patients (73%), ABS scores decreased during the activity, compared with scores taken beforehand. And 47 patients (64%) maintained a lower ABS score one hour after the activity. Seven patients (9%) displayed no symptoms of agitation before, during, or after the activity. One patient with an ABS score of 44 showed no response either during the activity or afterward. Two patients showed no response during the activity but displayed lower agitation scores afterward. One patient had a slightly higher ABS score during the activity, but it returned to baseline afterward. One patient had slightly higher ABS scores both during and after the activity than beforehand. No patients fell or were injured during shifts in which the individualized therapeutic activities were provided.

**Qualitative.** The continuous observers who participated in collecting data during the intervention were also asked to write a short paragraph about each experience. Although not every intervention was successful, the overall results were impressive. The majority of the qualitative data included several themes. In most cases, regardless of the activity chosen, the intervention had positive effects on the patient, including decreased agitation and increased positive nonverbal cues such as smiling, laughing, and interacting with others. These positive effects weren't limited to the patient but extended to the observers as well, who reported having more enjoyable interactions and decreased stress as their patients' agitation lessened. The observers reported that they often felt as if they were making a difference. They expressed appreciation that they now had a means to interact with these patients, instead of merely watching them. Some patients expressed a similar appreciation, in the sense that they felt more dignity and did not feel as if they were being held captive or "stared at." The therapeutic activities provided creative ways for the patients to express themselves and to release feelings of purposelessness. The activities also helped to distract patients from their current situation and to facilitate conversations about happier days.

**Figure 2.** Median Patient Agitation Scores Before, During, and After Individualized Therapeutic Activity



ABS = Agitated Behavior Scale.

It's also worth noting that, in itself, the act of completing the Personal Approach Form appeared to be a valuable component of the intervention. The form helped the observers to engage patients in conversation and aided in patients' recall of positive experiences.

Following are a few accounts by one observer (SL) describing the impact of several interventions upon the patient, the family, and the observer.

1. I spent 12 hours as a continuous observer for an 80-year-old man with a recent head injury who also had early dementia at baseline. I had been told that he was disoriented and confused, and that he required physical restraints because he at times becomes violent toward the staff. . . . After spending some time with this man I realized that he was frightened and that he became nervous when the staff began providing care. I talked to him quietly, got his attention, and explained what was going on around him. I asked him about his past and what kind of activities he enjoyed doing. He shared that he was a nuclear physicist by profession, liked to play cards and checkers, and enjoyed classical music. Within an hour, the "violent, confused man" was sitting up in a bedside chair playing a game of checkers while classical music played in the background. Not only did he behave

calmly for the remainder of the shift, but he was cooperative with every procedure he was put through for the rest of the day. Later his wife came in and asked me how he had been. . . . When I told her that he had been calm and interactive, and in fact we had enjoyed a great game of checkers, she was astonished! She said this was the first day he had not been violent or angry with someone. . . . She told me that she could go home with no worry on her mind because she knew he would be OK that night.

2. I was assigned to [an ED] patient who had overdosed on antidepressants. Although he assured the staff that this was not a suicide attempt, they still wanted him to be observed. The doctor was in the room with him and informed me that it would be a while, so I went to the activity room and obtained a few magazines, a checkerboard, and a book of crossword puzzles. Once the doctor left and I had him settled in, I asked him how he was feeling. He told me he was feeling very anxious and . . . depressed and had taken too many pills to try to make himself feel better. He told me about all the bad things that had happened to him in the past few years and the more he talked the more upset he appeared to get. Since

he was on a cardiac monitor I was watching his heart rate and blood pressure rise as he appeared more and more anxious. I asked if he would like to play a game to get his mind off of things. He looked relieved and gave me a very enthusiastic “yes!” He wanted to play tic-tac-toe, but after beating me four times he decided I wasn’t very good and we moved on to checkers. He beat me in checkers as well and the game had us laughing and making fun of my terrible checkers skills. After about a half hour I noticed that his vital signs had returned to normal, and he appeared much more relaxed. He was enjoying himself and having a lot of fun, even though he was not in the best of situations. . . . I went home that day happy, knowing that I had made a difference. Although I could not change his situation or fix the problems in his life, I could at least help this man to find something positive in the situation which was probably one of the darkest days of his life.

3. The patient was a 70-year-old female displaying agitation and resistance to care. Her initial pre-intervention ABS score was 28. After listening to Christian music, the patient became more calm and cooperative with medical treatments. Her ABS score was 19 during the music and was 18 one hour later.
4. The patient was displaying impulsive behaviors, specifically trying to leave the unit, and was having trouble expressing thoughts in a clear manner with [an] ABS score of 19. While playing cards (War) with the observer, the patient became calm and was now able to express self more clearly. The ABS [score] decreased to 14 (no agitation) and remained that way following the activity as the patient went to sleep for the night without awakening.
5. The patient was an 80-year-old gentleman with hearing impairment experiencing delirium. He displayed repeated attempts to leave the bed and became angry when not allowed to do so. The observers took the patient for a walk in the hallway. A rolling walker was used to increase stability and safety. While walking the patient became less angry and actually began to reminisce about his life, sharing his past occupation as an architect. When he returned to his room, he was given colored pencils with which he drew a plan for a building.
6. The patient was a 40-year-old male with alcohol dependence. He began expressing fears of being shot. The preintervention ABS score was 38. The observer offered to play cards with the patient, which resulted in a calming effect after only a few minutes. He began smiling, laughing and

expressed feelings of trust. The ABS [score] while playing cards was 21 and was 14 one hour after the activity.

## DISCUSSION

In this project, the use of individualized therapeutic activities for hospitalized patients who were under continuous observation was associated with marked decreases in agitation. For a majority of patients, lower agitation levels were achieved during the activity and were sustained for at least one hour afterward. The therapeutic activities were intended to increase the effectiveness of continuous observers in enhancing patient safety and comfort, and in so doing, gave observers a more meaningful role to play. Indeed, many of the observers reported feeling a sense of accomplishment in being better able to calm their patients. However, although we found an association between the introduction of therapeutic activities and decreased agitation, it’s important to note that there may have been other factors accounting for the decrease. Other limitations of the project include potential rater bias, since the observers rating the patients’ agitation levels weren’t blinded to the intervention, and lack of a control group. We believe this project merits replication and further study.

The idea of maximizing the effectiveness of the continuous observer proved a useful guide. Giving observers a tool—the Personal Approach Form—with which to gather information about a patient’s interests and preferences was in itself constructive: it facilitated patient–observer interactions as well as helping observers to identify appropriate activities for individual patients. It also allowed patients to be involved in choosing activities, which may have helped to foster a sense of greater self-determination and control.

Staff and STAR team volunteers directly involved in the project, as well as others (the nurses supervising the continuous observers and staff who began to use the activities for patients who weren’t receiving continuous observation), were regularly asked for input regarding which activities were most popular and effective with patients. The stock of these items was then increased to ensure their availability, and staff were encouraged to store some of these items on their units for easy accessibility. New items were added at the suggestion of staff, volunteers, patients, and families. Donations of new or gently used items were requested from manufacturers, community groups, private donors, and our hospital auxiliary. Many people responded with generosity, including hospital employees, local businesses, the town’s Rotary Club, and a high school Key Club. Through use of a variety of funding sources and volunteer assistance, projects like ours can be cost neutral for the organization.

The hospital administration has shown strong support for this project. Many departments—including nursing, volunteer services, purchasing, storeroom,

and philanthropy—have collaborated to accomplish its success. These departments assisted with the start-up, day-to-day operation, and expansion of the project. The project team received the hospital's Full Circle award and was acknowledged in a variety of forums.

Other areas of our hospital are now also using therapeutic activities to calm and relax patients. For example, postoperative acute care unit staff regularly use selected activities with patients emerging from anesthesia. In many cases, this has averted the need for pharmacologic treatment or restraints. Outpatient areas, such as the outpatient dialysis center, have requested items to occupy patients during treatment. For patients at risk for delirium, staff nurses report thinking more proactively, gathering items ahead of time in an attempt to prevent or decrease agitation. We are collecting these stories as anecdotal evidence and plan to share them in the future.

**Suggestions for research.** Further research is needed to investigate the association this project found between the use of individualized therapeutic activities and decreased patient agitation. A study exploring whether the use of therapeutic activities affects the amount, frequency, and duration of medications given to manage agitation would be useful. Studies examining the effect of therapeutic activities on the need for ongoing continuous observation, patient complications, length of stay, and patient satisfaction would also be valuable. ▼

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