PATIENT SAFETY: PREVENTING FALLS AND THE USE OF RESTRAINTS

INTRODUCTION

Certified nursing assistants (CNAs) often care for patients who are elderly and CNAs may also care for patients who are confused or disoriented. The elderly patient and the patient who is confused may be at risk for falling and patient falls are a serious problem and significant cause of injury.

Patient safety should always be one of your foremost priorities when you are working as a CNA, so you will need to know how to prevent patient falls. Most of the information and techniques you can use for preventing falls are simple, but they require a lot of careful and consistent effort in order for them to be used successfully. In addition, you must be sure to carefully document what you have done to keep patients safe and prevent falls and this is especially true if restraints must be used.

STATEMENT OF PURPOSE

This module is intended to provide CNAs with information about how, why, and to who falls happen. The module will also outline practical methods that can be used to prevent patient falls.

PATIENT FALLS: FREQUENCY AND SERIOUSNESS

A fall is defined as an unplanned descent to the floor, with or without injury. Falls can happen to almost any patient, but older adults are much more susceptible to falling. Falls are a very common occurrence in older adults, both in the community and in health care facilities. Approximately one-third of all older
adults living in the community will fall at least once a year and one-half of those people will fall more than once.

Falls that happen in health care facilities are also common although the rate of occurrence is not as high as it is in the community. However, falls are the most common adverse event in hospitals and they can have serious consequences.

- Between 3% and 20% of all patients will fall at least once during hospitalization.
- The great majority of these falls are unwitnessed.
- The majority of falls happen when the patient is transferring, or being transferred, from bed to chair or back.
- Most patient falls do not cause injuries. However, the injuries that do occur tend to be serious, eg, bleeding, dislocations, fractures, and lacerations and these serious injuries are associated with a high fatality rate.
- Falls are one of the leading causes of mortality in the elderly and they are the leading cause of mortality from trauma in this age group.
- Hip fractures suffered after falls are an especially serious fall injury. Approximately 25% of all patients who suffer a hip fracture after a fall die within a year and approximately 50% of these must be discharged to a long-term care facility and never return home.
- Patient falls may not cause injuries but they can cause anxiety, depression, a lack of confidence in the ability to ambulate, and a fear of falling.
Patient falls increase the length of hospitalization and they increase health care costs. Many patients who fall cannot return home but must spend time in a rehabilitation facility after they are discharged. In addition, insurance companies and government insurance programs consider falls to be preventable events and the costs associated with a fall may not be reimbursed.

Despite greater awareness of the danger of patient falls and implementation of fall prevention programs, there is evidence that suggests that the incidence of patient falls has increased in the past several decades. This increase may be due to better and more accurate reporting of falls or because the patient population has become older and sicker, but regardless of the cause is clear that patient falls are still a common and serious problem. Preventing client falls should be your first goal. Part of preventing falls involves knowing why falls occur so you can identify clients who are likely to fall, you can identify situations in which a fall is likely to occur, and you can identify staff and environmental issues that might contribute to a fall.

**WHY DO FALLS HAPPEN?**

**Introduction**

An individual patient fall can be a simple event. For example, an elderly person gets out of bed to use the bathroom and slips on a loose area rug. Someone who is taking a medication that causes drowsiness and who has poor vision may misjudge a flight of steps and fall.
However, falls don’t simply “happen,” and they are not an inevitable consequence of getting older or being hospitalized. Falls can be caused by one or two factors but when patient falls - and falls in community-dwelling adults - are considered as a whole it is clear that they are complex in nature and there are many reasons why falls occur. Saying that “a patient has fallen,” or “someone had a fall” cannot explain the event as falls are complex by nature.

Falls can occur at home, in an acute care hospital, in an assisted living facility, or in a skilled nursing facility. They can happen to people who are very old and frail and to people who are (relatively) young and healthy. A fall can be a one-time event or the patient may have multiple falls. They can happen at any time of the day and they can and will happen despite the consistent use of fall prevention programs and high staffing level in health care facilities.

There are many factors that contribute to patient falls. These factors are complicated, they interact with each other, and at times one fall risk factor can be the cause of another. This complexity can make it difficult to understand falls, but a simple and useful way to think about the issue is to separate the risk factors for falls into three categories: staffing/health care personnel factors, patient factors, and environmental factors.

**Staff and Healthcare Personnel Factors and Patient Falls**

Patient care staff are responsible for patient safety, and the experience of the staff, the number of staff and the level of their professional qualification, and education of the staff in fall prevention have all been shown to be important factors in both the incidence of falls and their prevention.
Health care professionals obviously do not directly cause clients to fall. However, the conscientious CNA can help to prevent falls and failure to do so is the where the issue of staff enters the equation. As a CNA one of your top priorities is client safety and preventing falls is a big part of that priority. In order to fulfill this responsibility, you must have knowledge and you must be proactive. You must know why falls occur, you must be able to assess how likely it is a client might fall, you must know which clients are most likely to fall, and you must actively work to prevent falls. Failure of the staff to be proactive is a big reason why falls occur.

However, studies that have examined how staff and health care personnel factors affect patient falls have not always produced consistent results or clear answers. It seems logical that a lower staff-to-patient ratio would reduce the number of falls but this has not always been the case. Staffing composition at times seems to help prevent patient falls, but the specific numbers of CNAs, RNs, or LPNs that are staffing a unit may only make a difference in specific patient care situations. For example, patient falls may be reduced if there are more CNAs than RNs but this may only be true in medical-surgical units that have particular level of acuity. Providing the at-risk person with a constant bedside companion, typically called a sitter, would seem to be the ideal solution but the available research suggests that even this level of care cannot always prevent falls.

One of the staff and health care personnel factors that can have a consistently positive effect on fall prevention is staff education and staff involvement. If there
a fall prevention program and the staff is well educated in how to use it and they consistently apply the principles of the program, falls can be prevented.

**Patient Issues and Falls**

Patient issues are a significant cause of falls. Patient issues that increase the risk of falling can be divided into two categories, ones that modified and ones that cannot.

The **modifiable risk factors** include balance, gait instability and gait disorders, loss of muscle strength, and fear of falling. Deficits in these physical capabilities and the fear of falling are clearly associated with an increased risk of falling.

Medications are also a modifiable (to some degree) risk factor for falls.

1) Balance deficits: Balance is the ability to maintain a stable posture and keep body weight over the center of gravity. Balance is both static and dynamic. In simpler terms, we must keep balance when we are sitting still and when we are moving. Maintaining balance is a critically important and very complex task that requires coordinated functioning between the muscles, the joints, vision, the neurological system, and the inner ear structures involved in balance. Aging causes a decrease in muscle strength, decreased reaction time, a decrease in vision and/or visual abnormalities, deterioration and stiffness of the joints, and other physiological changes that affect the ability to maintain balance. Balance deficits, caused by one or more of the changes mentioned above, are relatively common in older adults, and they are a major risk factor for falls.
However, specific training can improve balance so a balance deficit or at least partially corrected or some loss of balance prevented.

2) Gait instability and gait disorders: Gait instability and gait disorders are considered to be a strong risk factor for falls. Gait instability and gait disorders are very common problems as we age and as many as one-third of all older adults have been found to have a gait disorder. For example, approximately 30% of all adults age 65 and older have difficulty walking three blocks, they cannot climb one flight of stairs, and many need a cane or another assistive device in order to ambulate. Gait instability and gait disorders are usually caused by a neurological condition such as Parkinson’s disease or cerebrovascular accident (more commonly known as a stroke) or by musculo-skeletal and joint problems. In most older adults there are multiple causes of gait disorders. See Table 1 for a partial list of these causes. Many of these conditions themselves are not modifiable, but the gait instability and gait disorders that are associated with them can be treated.

Table 1: Causes of Gait Instability and Gait Disorders

- Dementia
- Depression
- Diabetes
- Inner ear disorders
- Medications, especially those that may cause drowsiness
- Muscle weakness
- Obesity
- Osteoarthritis
3) Muscle strength: Losing muscle strength is an inevitable part of growing older. Starting at age 30 everyone begins to lose some percentage of their muscle strength each year. This medical term for this process is sarcopenia, and it is especially pronounced for people who are sedentary. Muscle weakness is considered a significant risk factor for falling in older adults. Fortunately, strength training exercise has been proven to decrease this decline in muscle strength in older adults and this can help prevent falls.

4) Fear of falling: Fear of falling is a very common problem for older adults. One study showed that 50-60% of community dwelling adults had a fear of falling and 70% had a fear of falling if they had already experienced a fall. Fear of falling increases the risk of falling, and it also has many harmful physical, psychological, and social effects. Fear of falling prevents people from ambulating. This increases loss of muscle strength which in turn, increases the risk of falling. Fear of falling also inhibits people from ambulation and can lead to social isolation and depression.

5) Medications: Many commonly used medications can significantly increase the risk of falling. Drugs that are considered to increase the risk of falling are listed in Table 2. Antidepressants, sedatives, narcotic analgesics, and
antipsychotics cause confusion, dizziness, drowsiness, and sedation. Medications such as antihistamines and drugs used to treat urinary frequency have anticholinergic properties can also causes confusion, dizziness, and sedation, and orthostatic hypotension (A sudden drop in blood pressure caused by standing up) is a well-known side effect of some of the anti-psychotics and anti-hypertensives. Medications are often essential for maintaining health and treatment with them cannot be stopped. However, adjustments can be made to a medication regimen and these adjustments may decrease the risk of a fall.

Table 2: Medications that Increase the Risk of Falling

Analgesics especially opioid analgesics, eg, codeine, oxycodone, morphine
Antihistamines, eg, diphenhydramine
Anti-depressants, eg, Paxil, Prozac, Zoloft
Anti-hypertensives
Antipsychotics, eg, Seroquel, Risperdal, Zyprexa
Anxiolytics, eg, Buspar, Klonopin, Valium, Xanax
Drugs used to treat diabetes (Hypoglycemia can cause a fall)
Drugs used to treat urinary frequency, eg, Detrol, Ditropan
Hypnotics and soporifics, eg, Ambien

Learning Break: The use of multiple medications, eg, four, five, six or more has also been identified as a risk factor for falling.

Non-modifiable patient factors that increase the risk of a fall include age, hearing or visual deficits, a prior history of falling, the presence of medical conditions and psychological conditions such as cognitive impairment, diabetes,
dementia, depression, hypertension, Parkinson’s disease, orthostatic hypotension, peripheral neuropathy, sleep disorders, and stroke. The incidence of psychological and/or physical conditions such as Alzheimer’s disease and dementia that affect consciousness, perception, and orientation (being aware of who and where you are and accurately knowing and understanding what is happening around you) is higher in the elderly population.

These psychological and medical conditions are defined here as non-modifiable but that isn’t completely true. Some of the conditions can be corrected or treated. Hearing aids and corrective lenses can be prescribed and medications are available for diabetes, hypertension, and Parkinson’s disease. However, to some degree these conditions cannot be cured and will always be part of the patient’s risk profile for falling.

Learning Break: Diabetes is a very common disease, and one of the complications of diabetes is peripheral neuropathy. Peripheral neuropathy is defined as damage to sensory nerves in the extremities. Chronically elevated blood glucose levels will cause peripheral neuropathy and the lack of sensation caused by this disorder contributes to gait instability and falls.

Environmental Issues and Patient Falls

Many of the environmental issues that can cause falls are obvious, eg, poor lighting, loose rugs or loose carpet edges, worn/uneven stairs, ill-fitting footwear, exposed electrical cords, absence of supportive devices such as handrails,
poorly fitted or broken assistive devices such as canes and walkers, and slippery floor surfaces. The hospital/healthcare facility environment is generally safe but for an elderly client or a client who is confused or disoriented, even these very safe surroundings can be hazardous.

**ASSESSING THE RISK OF FALLS**

**Bedside Assessment of Patient Risk Factors**

Patient assessment for fall risk factors is very important, especially for older patients as they are far more likely to fall than patients < age 65. Assessment can be done at the bedside or by using specific tests that assess balance, gait, and muscle strength. A bedside assessment fall risk should include the following.

1) **Mental status:** Does the patient know his/her limits in terms of ambulation and orientation and accept them, or does he/she forget or refuse to acknowledge these limits? Does the patient have a medical or psychiatric diagnosis that might make him/her more likely to be confused, forgetful, or disoriented? Does the patient have a medical condition that would interfere with her/his ability to ambulate or make she/he more likely to fall? These conditions were discussed in the previous section of the module and should be reviewed.

2) **Medications:** Is the client receiving medications that might make him/her more likely to fall? Refer to the medications in Table 2.

3) **History of falls:** Many patients who fall will fall more than once so a prior fall is considered to be a risk factor for further falls. This is somewhat controversial. Some authorities believe that someone who falls once is not
at risk for falling again, while other experts believe that a client who falls once is much more likely to fall again. There is no definite answer to the question, and it is not easy to identify which patients who have previously had a fall will have another fall. However, the evidence indicates one fall may lead to another and it is sensible and safe to assess each patient’s fall history.

4) Ambulatory status: Can the client walk without assistance? Does he/she need help? Does the client use a cane or a walker? What is the client’s gait like? Is it normal, weak, or unsteady?

5) Ask the patient: This is overlooked but many patients do know their ambulation/mobility limits, and they can provide valuable information about what is and is not safe for them.

6) There are assessment tools such as the CATASTROPHE mnemonic, STRATIFY, the Barthel Index and others that assess a number of variables such as alcohol use or alcohol withdrawal (The A in CATASTROPHE), ocular problems (The O is CATASTROPHE), the presence of a urinary catheter or IV lines, and provide a score that will be predictive of the risk for falling.

**Balance, Gait, and Muscle Strength Testing of Fall Risk**

Formal, standardized tests for fall risk can be used by physical therapist or physicians. These tests focus on the patient’s balance, look for and assess the severity of gait disorders and instability, and determine if muscle weakness that
can cause a fall is present. Several of the more commonly used tests will be briefly discussed.

1. Berg Balance Scale: The Berg Balance Scale measures how well someone can perform functional tasks that require balance. For example, the patient will be asked to move from sitting to standing; to maintain a balanced position while standing with his/her eyes closed, and; turning 360 degrees. The patient is assessed on how easily the tasks are accomplished and how much time it takes to do them.

2. Timed Get Up and Go: The Timed Get Up and Go test (informally called TUG) is a variation of the Get Up and Go test, and it is used to assess a patient’s dynamic and static balance. The patient begins the test by sitting in a chair. She/he must then stand up, walk 10 feet, turn around, walk back to the chair and sit down. This should take between 7-10 seconds. The completion time that is considered to indicate a mobility time is somewhat controversial. However, anything > 7-10 seconds is suggestive of the presence a mobility problem and a completion time of > 20 seconds, is considered to be evidence of a mobility problem.

3. Romberg Balance Test: The Romberg Balance test is a standard neurological test, and it assesses several three physical capabilities that must work together to maintain balance, specifically vision, the integrity of the inner ear balance structures, and sensory input. If there is a deficit in two or three of these as determined by the Romberg test, the patient will not be able to maintain balance. The patient is asked to stand with feet
together, arms at the sides, and eyes closed. Someone with normal balance may sway back forth very slightly but someone who has a balance problem will be noticeably unsteady and may even fall.

4. One-leg balance test: The patient is asked to stand on one leg, unassisted, for at least five seconds. If the patient must hop to maintain balance, if the opposite foot touches the floor or the supporting leg, or the patient touches something for support, the test is finished.

PREVENTING FALLS

Preventing falls is a big challenge and there has been a considerable amount of attention and study directed towards finding solutions. Fall prevention programs can work if they are used conscientiously and they include measures to address patient, environmental and staff issues that contribute to falls.

Patient Issues and Fall Prevention

1) Modifiable risk factors: Balance problems, gait instability and gait disorders, and muscle weakness can all be improved by using targeted exercise programs. Fear of falling can be alleviated by exercise programs and by psychological interventions. The patient’s medication regimen should be examined to determine if any prescribed drugs, or combination of drugs, may increase the risk of falling.

2) Non-modifiable risk factors: Non-modifiable fall risk factors cannot be significantly changed, but adaptations and accommodations can be made. These adaptation and accommodations would include patient education, environmental manipulations (these will be discussed later), maintaining
good control of medical conditions such as diabetes, dementia, orthostatic hypotension, and Parkinson’s disease, and staff interventions (these will be discussed later).

**Environmental Issues and Fall Prevention**

Environmental changes that can decrease the risk of falling are usually very simple, whether in a health care facility or the home. As mentioned previously, the environmental issues that can cause falls are obvious, eg, poor lighting, loose rugs or loose carpet edges, worn/uneven stairs, ill-fitting footwear, exposed electrical cords, absence of supportive devices such as handrails, poorly fitted or broken assistive devices such as canes and walkers, and slippery floor surfaces.

**Staffing Issues and Fall Prevention**

The issues of the number of staff and staff composition were previously discussed and despite considerable study it is still not clear how these can best be changed to prevent patient falls. However, instituting a fall prevention program, educating the staff in its use, and consistently and routinely evaluating how well the staff is adhering to the program can help decrease the incidence of falls. A fall prevention program may be well designed but if it is not used consistently and conscientiously it will not work.

**Bedside Assessment and Correction of Fall Risk Factors by the CNA**

As a CNA you need to know why falls occur, you must know who is likely to fall, and then apply that knowledge to prevent falls. Use this process outlined below.

**Assess the Patient**
Client falls can be caused by anything physical or mental that affects strength, sensory perception, balance, or orientation to the environment. The patient assessment should include age, presence of medical or psychiatric conditions that would predispose to a fall, fall history, cognitive status, presence of urinary frequency, the use of medications that are known to contribute to fall risk, and mobility status. Is the patient aware of his/her mobility limitations and fall risk?

Assess the Environment

Lighting, ambulation obstacles, ease of observation of the patient, poorly adjusted footwear or assistive devices

Make the Necessary Accommodations and Adjustments

- Side rails down, bed in low position: Traditionally, side rails were considered to be a safety device. This has been shown to be false. If patients are confused or disoriented they will not recognize side rails as a safety measure, they will simply see them as obstacles to overcome. When they try and climb over them, a fall will almost certainly happen. The bed should always be in the lowest position, as well. If a fall occurs from bed, better it happens when the bed is closest to the floor. The wheels of the bed should also be locked
- Call light: The call light should be operating and it should be where the patient can see it and reach it. The use of the call light should be
reinforced frequently. Make sure the patient understands what it is used for. Make sure that the patient understands that using the call light is not a sign of weakness or an inconvenience to the staff.

- Know your patients: Know who has fallen before, who does not seem to have a good sense of his/her physical limits, who takes medications that may cause drowsiness or dizziness, etc. These issues were covered earlier in the module, but they are important to remember.

- Orientation of the patient to the environment. Someone who is elderly or confused may not be able to adjust quickly and easily to new surroundings. When a patient arrives on the unit for the first time, show them where the bathroom is, where the light switches are, where the call light is, where the nursing station is, etc. This orientation should be repeated if the patient is moved to a new room or if the patient's condition changes and makes him/her less likely to remember the surroundings. You may also need to repeat the orientation from time to time: this is a very important concept that is often neglected.

- Be proactive: Check on patients frequently and document this. Realize that falls happen when patients need to use the bathroom or are trying to reach objects that are not close at hand. A toileting program that provides regular and reliable times for the patients to eliminate can help decrease the incidence of falls.

- Frequent assessments of the environment.

WHAT SHOULD YOU DO IF A PATIENT FALLS?
If a patient falls, follow these steps:

1) Look for injuries such as bleeding, obvious breaks, dislocations, or changes in mental status.

2) Call for help immediately.

3) Notify the supervisor as soon as possible. The physician should be notified as soon as possible, as well.

4) Document the particulars of the situation very carefully. Make careful observations about the patient's condition and the surrounding area. Be objective.

**USING RESTRAINTS**

A restraint is any device that limits a patient's ability to move or manipulate the environment. Restraints can be very simple. A mitten can be applied that limits someone's ability to use his/her hands and fingers, preventing the patient from disturbing IV lines, surgical dressings, or other medical equipment. Restraints can also be complex and very restrictive: cuffs can be applied to hands and feet and a vest can be applied to the chest and the patient will not be able to move at all.

For many years restraints were used to prevent patients from falling. However, it has clearly been proven that there are safer and more effective ways to prevent falls and that restraints very often cause more harm than good. If they are not used in the proper way and in the right circumstances, restraints increase the chances a patient will be harmed and restraints have caused serious injuries and
There are very, very few circumstances in which it is appropriate to use restraints to prevent falls.

However, there are instances in which restraints are needed. But restraints must be used very carefully and the decision to do so is an important one. Follow these guidelines.

**Table 3: The Proper Use of Restraints**

1) There should be a policy in place for using restraints. This policy should cover when restraints should be used, how the restraint is put on, how and where it is secured, how long it can be left on, how to check if it has been applied safely, and how often the patient and the restraints should be checked.

2) Never apply restraints unless there is an order to do so by an appropriate person and always use the restraint policy. These two points cannot be emphasized enough.

3) Restraints must be used only as the last resort. Look for less intrusive solutions. Make sure that the situation that is causing you to consider using restraints can't be solved by simpler methods. If the patient who is weak and confused is always trying to climb out of bed, risking a fall, try to re-orient them to the surrounding, institute a program of consistent toileting program, make sure the patient doesn't have some medical issue such as a fever or low blood pressure that may be causing the confusion.

4) Use restraints only if the patient is a danger to others or to themselves and there is no other way to keep the patient and other people safe.
5) Restraints are only used if a physician has ordered their use.

6) The specific type of restraints will be ordered by the physician; do not use anything else.

7) Apply the restraints with the supervision of a nurse or physician.

For example, in order to use wrist restraints, they should be applied snugly enough so the client cannot remove them, but not so tight that they cause pain or interrupt circulation. The wrist restraint must be secured to something that cannot be moved. Make sure the knot (wrist restraints have attached straps that are tied to the frame of the bed, stretcher, etc.) is secure but can be easily released.

Check the patient and the restraint according to the policy; this may be every 15 minutes, but it should be at least every 60 minutes. Check the color, pulse, and temperature of the restrained limb. The restraints should be carefully removed every so often according to the physician’s order or the restraint policy.

Removing the restraints allows the patient to exercise the limb and allows the staff to examine the skin that was covered by the restraining device. Finally, make sure that everything about the use of restraints is documented very carefully. Document why the restraints were needed, when they were applied, how often the patient and the restraints were checked, and what you noticed during these checks.

SUMMARY

Patient falls are a common and serious adverse event. Although almost any patient can fall, the majority of falls occur in older adults. As many as 20% of hospitalized patients will suffer a fall and although most falls do not cause
injuries, the injuries that do occur are often very serious. For example, approximately 25% of all patients who suffer a hip fracture after a fall die within a year and approximately 50% of these must be discharged to a long-term care facility and never return home. The psychological effects and the financial implications of falls are very serious, as well.

It is not possible to completely prevent falls, but the incidence of falls can be reduced. Prevention begins with assessment of the presence of client, environmental, and staff issues that increase the risk of falling. The risk factors are classified as modifiable or non-modifiable and they are changed or adaptations made. Prevention is best done in the context of a fall prevention program, and there is no universal agreement some controversy as to what constitutes the “ideal” fall prevention program. However, regardless of the content of these programs none of them will work unless the staff understands them, use them diligently and the successes and shortcomings of these programs is continually assessed.