Basic Body Mechanics to Prevent injuries During a Transfer

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Training Informal Caregivers:
Basic Body Mechanics to Prevent Injuries During a Transfer

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Author Note

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Abstract

There are many informal caregivers providing support to loved ones in their homes. Hiring a trained professional is often a financial barrier, leaving no choice but for a spouse or close relative to assume the role of primary caregiver. Many of them risk injury due to improper body mechanics when helping the patient transfer from one position to another. A four question survey was created to ask the public if they had any caretaker experience, felt comfortable performing a patient transfer, if they knew what a gait belt was, and finally if they were interested in learning a technique that would prevent physical injury to self and patient. Since 77.3% responded, “yes, they would want to know more,” the need was then established. A step-by-step instructional tri-fold brochure with colored photos on how to prevent injury on a transfer was created for the Visiting Nurses Association-Hospice (VNA) in Salinas, CA. The goal is for VNA to provide this brochure, as a preventative tool, to hospice caregivers.

Keywords: Informal caregivers, caregiver injury, untrained caregiver, proper body mechanics, preventing injury during transfer, gait belt, non slip socks
Agency & Communities Served

Visiting Nurses of America (VNA) & Hospice interdisciplinary team is a not-for-profit organization that has been established since 1951 and composed of a wide range of programs for authorized volunteer community members to work with patients directly, in clients homes or skilled nursing homes throughout Monterey, San Benito, Santa Cruz, and South Santa Clara Counties. As a volunteer you can be trained in reiki therapy, providing pet therapy, massage therapy, companionship, vigil, or work at the office and as a community ambassador of the volunteer program.

The Hospice program of Salinas has implemented this capstone project, its community is composed of a population of 121,000 who are 77.2% Hispanic/Latino residents, 14.1% White, 5.78% Asian and 1.35% Black. The median household income of a Salinas resident is $49,728 a year, the highest paid occupation at 24% was agriculture, forestry, fishing and hunting as second was 10.9% for healthcare and social workers (Data USA, 2017)

Hospice philosophy is to focus the care on the patients symptoms and progressing illness (VNA, 2020). A patient is admitted into Hospice care when they are newly diagnosed with a terminal illness and can be expected to pass within 6 months to a year. As a new impatient, the Medical Director evaluates what medications will need to be ordered, since the agencies focus is to provide comfort and quality of life, rather than a cure. The interdisciplinary team includes the Registered Nurse, Licensed Vocational Nurse, Home Health Aide, Case Manager, Masters Social Worker, Volunteers and Spiritual Leaders will each take on their role to help organize the patient and family members with any medical equipment that is needed, respite care for the caretaker, education material family might need regarding their loved ones dying process, or help
in planning the funeral. The process is not the same for all, some cultures or religions have
different ways of coping with the dying process, so VNA makes every effort to ask the patient
and family what or how they can help meet those cultural needs.

The mission statement of VNA Hospice is, “Providing the highest quality health care to
residents of the Central Coast by meeting their individual needs in a caring, effective, honorable,
and accessible manner” (VNA, 2020). Their vision statement is, “To meet the many transforming
and changing needs of the patients, families and caregivers”. A holistic approach such as
involving and informing all immediate family is taken when a new client is accepted into the
organization.

In their most recent transparent annual community report of 2018, VNA Hospice services
provided all the amount of miles driven by staff, total volunteer hours, vaccines administered,
and amount of hospice patients served.

**Problem Description**

As a patient's health declines or is no longer able to self-care the primary caregiver will
need to do all the physical tasks such as lifting, supporting, transporting and carrying. The
primary caregiver is usually a family member or a close neighbor. Most of the time they have no
experience or formal training in body mechanics. They are defined as informal caregivers. It is
important for any caregivers to know how to prevent injuries by safe patient handling to help
enhance the quality of care and improve clinical outcomes. If the caregiver does not know or has
not been trained on the basic proper body mechanics to avoid injury they will not only run the
risk of hurting themself but also the patient. The Royal College of Nursing recommends a weight
limit of 30 kg (66 lbs) for a safe one person lift. A lifting or transferring medical device or a second person is needed to assist if more weight, so no one is injured.

Questionnaires and interviews of 46 informal caregivers reported in four weeks that 94% experienced musculoskeletal pain, 76% attributed to lower back, 43% of knee, shoulder and wrist pain. The injuries they endured affected their ability to provide quality of care, 66% said the pain impacted their overall quality of life (Social Work Today, 2020). A 2014 study from Ohio State University found 94% of home caregivers felt some musculoskeletal pain at least in one area of their body, out of those 66% said that the pain they endured also affected their own quality of life (Considerable, 2019).

A terminally ill patient is best if they go home where they can be surrounded by close friends and family. The VNA Hospice disciplinary team is able to assist in obtaining orders for and delivery of medical equipment to the home or having medications mailed directly to the home as well. There are about 42.1 million unpaid, informal caregivers, usually a spouse, partner, family member or friend that assists and provides their loved one with activities of daily living and/or medical necessities (Ohio State University Center for Clinical and Translational Science, 2014). It is estimated that 8% of those aged 65 to 69 to well over 50% of those aged 85 and over will have either in home services or need to be in a skilled nursing home. (Spector, Fleishman, Pezzin, and Spillman, 1998).

Contributing Factors

There are contributing factors that can cause caregiving injuries, there are three main ones to be discussed as followed. The first is when the client is no longer able to assist physically in their own care due to declining health, second is when there is no other person or medical
equipment to assist and third is when the caretaker transfers the client without knowledge of preventative techniques of body positioning or mechanics during a transfer.

The first contributing factor is when the patient loses their ability, due to declining health, to assist by standing on their own or pulling themselves up to repositioning themselves. This leaves the caretaker to have to do it all on their own. When a patient requires 50% or more of a caretakers help on a transfer, that is when injuries most occur (Marras et al., 1999). Transferring from bed to wheelchair without the patient's assistance is physically demanding and a challenging activity that can cause much stress on the caretaker both mentally and physically. These types of injuries are associated with musculoskeletal disorders both in nursing and rehabilitation facilities (Menzel, 2004). To promote equity & social justice, independence, and maintain dignity, the caretaker should always allow the patient to make decisions on their own care. This will increase trust, comfort, and safety to avoid falls and reduce bruises and skin shearing. As a caretaker it is always important to explain what procedures are to be performed before doing them and also allowing them to refuse, reschedule, and most importantly obtaining consent.

A second contributing factor is when there is no other person or medical equipment available to assist the caretaker when a transfer is needed. “Every year in the healthcare industry, approximately 653,000 nurses, orderlies, assistants and other workers fall and injure themselves” (Enjuris, 2020). If a caretaker has no one else to help they can use specialized medical devices to assist. Depending on the task and weight of the patient, there are medical equipment available to the public that is recommended to be used on patients that have extreme limited mobility, minimal strength, poor balance or weight-bearing restrictions called a Hoyer lift. It can
efficiently lift and transfer using its hydraulic-manual pump or electrical motor on a patient up to 400 lbs. The caretaker sets a sling under the patient then securely attaches the sling to the device as it then lifts and repositions safety (Huntsberry-Lett, AND). According to Medicare.gov website, Medicare Part B covers this type of medical equipment as it deems it medically needed as long as the family can provide a doctor's prescription for the need and the equipment. This makes it a determining factor for the client to be able to stay at home instead of going into a skilled nursing facility. The Hoyer lifts can also be rented/purchased. However, there are many patients who may not have access to this equipment, or the space in the home as it is a bulky machine, so risk of injury can be high.

The third contributing factor is when the caretaker attempts to transfer or reposition the patient with no formal training. An informal caretaker, meaning a person that is caring for the patient is not formally trained in a certified trade school. The program teaches future aides/caretakers how to use their body effectively and safely. Focusing on effective, cautious, movement and importance of placement of your aligned back, legs, and feet during a transfer. By having the training and state certification one can minimize the musculoskeletal injuries to self or client. Informal caregivers are usually a family member that would rather take care of their loved one than financially having to hire someone, yet the risk could be a risk of their own injury. Caregivers face many rewards when helping to provide companionship and prepare meals. Just like any other position there can be frustrating days that one can get overwhelmed, frustrated, exhausted or alone. It is common to have emotional, physical stress which can leave you vulnerable to depression, anxiety as it can be a high burn out career choice (Mayo Clinic, 2020).
Consequences

According to the CDC, fall death rates in the U.S. increased 30% from 2007-2016 for older adults 65 years and over. These falls can cause hip, back and head injuries that can require hospitalization and can lead to death. Not only are falls serious but also costly, each year 3 million geriatric are treated in emergency departments, its estimated one out of four falls, less than half tell family or doctors. In 2015, Medicare and Medicaid Paid for 75% of medical costs related to falls that totaled more than $50 billion (CDC, 2017).

According to the U.S. Bureau of Labor Statistics, caretakers get injured at three times the rate of construction workers. Caretakers who injure themselves with the repetition of lifting, carrying and stretching can cause life changing events like career changing, depression, chiropractic expenses to maintain alignment. By the time one notices the pain and how it starts to affect your own personal life, it could be too late. Disk injuries from lifting can also be known as a “silent” injury as now extensive damage has been caused and only diagnosed by a MRI. Treatment can be costly with physical therapy, acupuncture, non steroidal anti-inflammatory medications and lots of stretches and rest. “Due to the demanding physical nature of most healthcare jobs, back injuries are estimated to total $7 billion per year. These injuries often happen due to moving patients or picking up heavy items” (Enjuris 2020).

If the caretaker is injured and no other family member is available to help during healing then the next alternative is for the patient to be placed in a professional assistance home such as a Skilled Nursing Facility (SNF). These facilities could cost more than one can afford. According to Medicare benefits they will cover the first 100 days of care in a SNF at each benefit period. After the 100 days it will have to be out of pocket coverage unless you are receiving any type of
physical, occupational, or speech therapy then it will continue. If income is low Medicaid can also assist. (Medicare Interactive, 2020). There are many pros and cons in living in a SNF. The cons or what people perceive to not want to live there is that it is not their own comfortable, familiar home. Expense can be a negative factor, not being able to come and go as you please or have visitors at any time. Pros or wanting to go to a SNF is to be able to have 24 hour care, having a daily schedule with those that are of your same age and being able to socially interact and meet new people in becoming more social and an active environment (Hardison Wood, D., 2013). It is vital that either a will or an advance directive is written or known of what the patient's wishes are to alleviate family conflict of opinion and a written documentation to legally show what the patient would have wanted.

**Problem Model**

<table>
<thead>
<tr>
<th>Contributing Factors</th>
<th>Problem</th>
<th>Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of client ability to assist on a transfer due to declining health.</td>
<td>Physical injury to client or self during a transfer or repositioning.</td>
<td>Clients fall causing injury.</td>
</tr>
<tr>
<td>No other person to help with transfer.</td>
<td></td>
<td>Caretaker injured and now not able to work.</td>
</tr>
<tr>
<td>Untrained caretaker transferring a patient, risking injury to self and patient.</td>
<td></td>
<td>Clients injured, needing to now have professional assistance, have to now relocate to Skilled Nursing facilities instead of home.</td>
</tr>
</tbody>
</table>

**Capstone Project & Project Purpose**

This capstone project will be an injury prevention tri fold brochure for informal caregivers to educate and prevent the risk of injury to oneself or a loved one by an informal
caregiver. It will explain the importance of hand hygiene before and after patient contact, explaining procedure and obtaining consent, gathering all the necessary equipment such as skid free socks or shoes, gait belt, position of the wheelchair and what to communicate to patients before, during and after transfer. It’s main focus is keeping a properly aligned body to protect one's back, neck, knees, feet placement, wheelchair placement in transfers.

This project will highly address the need of preventing injury to oneself and the patient. It will teach a caretaker without a medical background the basics of proper body mechanics but also refine, if any skills, those that need today's proven techniques.

It can prevent the contributing factors as mentioned above. Our first contributing factor is when the client has lost the ability to assist in repositioning, due to their disease process. As this leads for the caretaker to do all the lifting, moving and providing full activity of daily living (ADL) on their own. These tasks could be heavy, repetitive and both mentally and physically draining. This brochure will show you how to use your body effectively so repetitive motions do not consistently hurt, ache or cause soreness to prevent you from continuing your care taking. It will also introduce and explain a gait belt. A gait belt is a medical device that allows you to transfer your patient in case you do not have a second person to help you. This is listed as a second contributing factor. A gait belt also is useful to prevent falls, assist in walking, avoid shearing of patients skin, and avoid bruising (Drugs.com 2020). The brochure will teach you where to position the wheelchair and its importance of keeping the wheels locked before a transfer.

Third contributing factor is for the informal caretaker. As they have no background in caretaking education, they run the risk of hurting themself or patients. This brochure will go over
the basic steps on how to verbally prepare a patient for a transfer, what items you will need, where to place them, and how to safely position your body, feet and equipment to be able to execute a safe and smooth transfer.

**Project Justification**

This brochure will be a color trifold and will teach a basic transferring technique using a gait belt. A formal or informal caretaker can use this brochure to learn the simple body mechanics in lifting, moving and feet positioning as it is important to provide a safe and injury free environment.

A normal day for 67 year old Margie involves taking her husband more than 10 times to use the restroom, assist in meal prepping and feeding, helping him get in and out of bed and needs to push him in his wheelchair up and down their ramp at home (Social Work Today, 2020). All that is physically and mentally demanding that can cause pain to her if not done with proper body mechanics to avoid her getting injured. If she gets injured and in pain it will not only affect her but can prevent her from caring for her husband in the future.

That is why this brochure is so important for any caretaker with no experience to learn this skill. It is teaching today's basic techniques on the importance of the caretaker's body's positioning to effectively accomplish a safe and injury free transfer of the client.

It is evidence based proven that factors that influence proper body mechanics to prevent unnecessary strain during any activity of daily living include posture, nutrition, muscle tone, body size and build, fitting shoes, and loose fitting clothing that will allow you ability to bend, squat and move comfortably (VNA Home Health and Hospice, 2009).
Project Implementation

To determine the greatest client need there was a team meeting to discuss what the intake process of a new client consisted of, what role each disciplinary team had, and what the follow up procedures were with each client. The process was very well thought out and has been effective with the usage of sharing virtual medical records so everyone who is part of the care team has full access and on the same page. Clients’ family members were then asked what they could benefit from, whether it was education or medical equipment, that would help them with the care of their loved one. Based on their feedback a pre assessment survey was created to learn how the general public felt about caretaking. The pre assessment survey was four simple questions on caretaking and distributed via social media. The results of the questionnaire were presented to the Volunteer Coordinator and the determined need was preventing injury for caretakers who did not have formal training in caretaking skills.

After the need was established another meeting was to discuss the best delivery method for the caretakers to learn from. At the beginning of the semester the decision was made to make a mock bilingual instructional video simulating a transfer using proper body mechanics. Due to Covid-19 unfortunately that video was not going to be possible since campus CSUMB media students would not be available. A PowerPoint presentation was then discussed but to be effective only video or pictures would emphasize the foot placement, gait belt positioning, non slip socks, and body alignment positioning. So a colored tri-fold brochure was what was agreed on.

Two coworkers who are Registered Nurses took some time to create a mock environment. One acted as the patient and the other took pictures focusing on feet, body, and
medical equipment position. Those pictures were implemented on the brochure and a step by step process was written for instructions.

VNA Director of Rehabilitation, and staff were then presented with the first draft of the colored, detailed, instructional trifold brochure. There were three drafts that were done before the final brochure was approved. Changes included specific medical terms needing to be changed for an easier understanding, medical disclosure to speak to your personal doctor before attempting any procedure. A detailed implementation plan and timeline can be seen in the Scope of Work in Appendix A.

**Assessment Plan**

Using a Likert-type scale questionnaire can determine both the need of the brochure and also the primary target audience. Using a simple yes or no questions such as:

- Do you have any previous experience as a caretaker?
- Do you feel comfortable transferring a patient from the bed to the wheelchair?
- Do you know what a gait belt is?
- Would you be interested in learning a technique to prevent any physical injury to yourself and loved one during a transfer?

The results would show whether a caretaker is confident in their current skills and also the willingness to learn. Even those that are certified can improve or refresh with the instructional brochure.

**Expected Outcomes**

The expectations out of this instructional brochure is to provide the caretaker a basic skill to safely transfer and eliminate injury to self and patient. This will also bring confidence and peace of mind to the patient and families that with this new skill will prevent injury by safe
patient handling and enhance the quality of care and improve clinical outcomes. With every new hospice admission patient, the VNA Hospice Nurse will distribute the brochure to the caretaker and will go over the basic steps to ensure preventative care.

**Project Results**

As the survey was completed, 66 responses were obtained. The following are the results;

![Pie chart showing previous experience as a caretaker: 33.3% Yes, 66.7% No.](chart1)

For 33.3% respondents, this educational brochure would be the target audience.

![Pie chart showing comfort transferring patient: 27.3% Yes, 72.7% No.](chart2)

After reading the brochure and going through the guiding steps, the 27.3% should increase.
A gait belt is imperative for a caretaker to know what it is, how to properly use it, and knowing how to make sure it is put on correctly so as not to harm the patient instead of assisting. This brochure explains all those important facts and would educate those 30.3% responders that did not know what a gait belt was.
This survey proves the expected outcome of the need of 77.3% of responders wanting to learn about the proper usage of the skill of body mechanics to prevent physical injury to self and patient to ensure safe handling of patient care and preventative measures on a long term basis.

**Conclusion & Recommendations**

The online survey showed 33.3% of participants stated they had no previous experience as caretakers, 27.3% did not feel comfortable transferring a patient, 30.3% did not know what a gait belt was, and even though 66.7% of responders did have previous caretaking experience 77.3% responded they still wanted to learn more about safety techniques during patient care.

Based on those results, the research clearly confirmed the need for the project to move forward and target the audience that is ready and willing to learn and apply the instructional brochure.

In conclusion the feedback received by VNA staff, family of clients, and mentor stated it was extremely beneficial and informative. At this point the brochure is waiting on approval from the VNA Director of Rehabilitations. If approved to be distributed, it will be implemented in the admission packs for future Hospice caregivers. The recommendation is for VNA to continue to utilize the brochure as a prevention tool for caretakers during the admission process. It is also recommended upon admission for the Registered Nurse to introduce the brochure, explain the importance of a gait belt, and making sure non-slip socks or shoes are on the patient before standing to avoid a fall or slip. And as always allowing for the caretaker to ask questions on how to give better care to their loved one.

It is important for the agency to provide educational materials and guidance for the new caretaker to ensure their own well being and to avoid personal injury. It is common for the average person to want to assist their loved ones without thinking about safety first. This
brochure will address the informal caregiver to better prepare both themselves and the patient
during a transfer by offering verbal cues, knowledge of basic medical equipment, and body
positioning. For the future caretakers that utilize the brochure’s information, they will then be
able to teach other family members involved how to keep themselves free from injury.
References


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Shepherd Center (ND). *Transfers.* Retrieved from [https://www.myshepherdconnection.org/sci/transfers](https://www.myshepherdconnection.org/sci/transfers)


## Appendix A

### Scope of Work

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>TIMELINE/DEADLINES</th>
<th>SUPPORTING STAFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speak with Mentor to discuss possible capstone project needs</td>
<td>June 13, 2020</td>
<td>Quinn, Elizabeth</td>
</tr>
<tr>
<td>Create the needs assessment questionnaire</td>
<td>July 4, 2020</td>
<td>Caitlin</td>
</tr>
<tr>
<td>Distribute questionnaire via social media, word of mouth</td>
<td>July 18, 2020</td>
<td>Caitlin</td>
</tr>
<tr>
<td>Gather results &amp; establish a need</td>
<td>Aug 8, 2020</td>
<td>Caitlin, Quinn</td>
</tr>
<tr>
<td>Discuss Video/Brochure/Presentation delivery is best</td>
<td>Sept 12, 2020</td>
<td>Quinn, Caitlin, Elizabeth</td>
</tr>
<tr>
<td>Create Brochure</td>
<td>Oct 3, 2020</td>
<td>Caitlin, Elizabeth, Quinn</td>
</tr>
<tr>
<td>Present Brochure to Mentor to distribute to staff for any revisions, comments or remarks</td>
<td>Oct 24, 2020</td>
<td>Quinn, Elizabeth, Caitlin</td>
</tr>
<tr>
<td>Make edit suggestions and create 2nd draft</td>
<td>11/01/2020</td>
<td>Quinn, Eric, Elizabeth, Caitlin</td>
</tr>
<tr>
<td>Make edit suggestions and create 3rd draft</td>
<td>11/09/2020</td>
<td>Caitlin</td>
</tr>
<tr>
<td>Create final draft</td>
<td>11/23/2020</td>
<td>Physical Therapy Director, Quinn, Elizabeth, Caitlin</td>
</tr>
<tr>
<td>Final Draft Authorization requested to Director Rehabilitation Therapist</td>
<td>12/09/2020</td>
<td>Quinn, Elizabeth, Caitlin, Eric, VNA Staff</td>
</tr>
</tbody>
</table>