

Interdisciplinary Collaboration for Self-Catheterization in Patients with Neurogenic Bladder Due to Spinal Cord Injury

Improving the Quality of Life for Spinal Cord Injured Individuals

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According to the Model Systems Knowledge Translation Center approximately 17, 000 new spinal cord injuries occur per year. Neurogenic bladder is the abnormal function of the detrusor muscle as regulated y the nervous system and is a common physiological phenomenon following spinal cord injury. Medical risks of neurogenic bladder include urinary tract infection and potential renal failure.

The management of neuropathic bladder dysfunction is a crucial component of a spinal cord injury. The loss of normal bladder function in patients with SCI is disabling and results in increased risk of urinary tract deterioration, giving rise to significant morbidity and even mortality.

Individuals who could potentially benefit from a device specifically designed to meet their individual needs with self-catheterization should be identified and addressed collaboratively by members of the team.





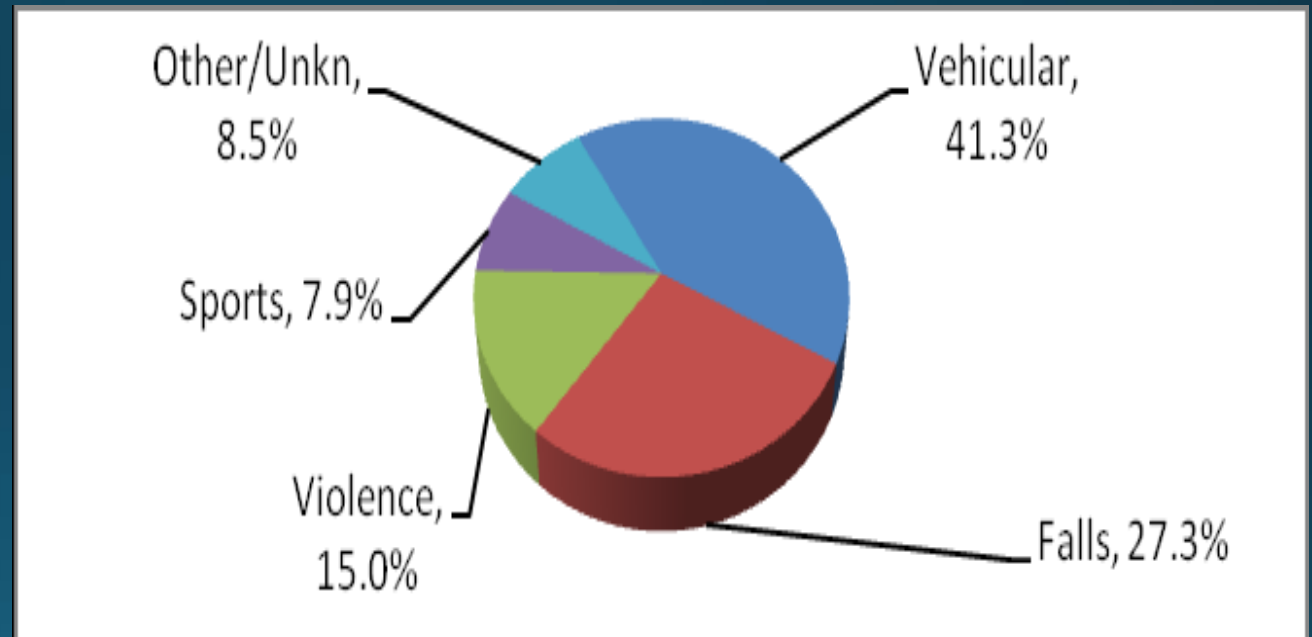
Paralyzed Veterans of America's Clinical Practice Guideline emphasizes patient education, medical management and functional training to maximize patient independence for bladder management and decrease risks of secondary complications due to neurogenic bladder. Additionally, inpatient lengths of stay continue to decrease resulting in caregiver dependence for bladder management at discharge.

Let's go over some statistics

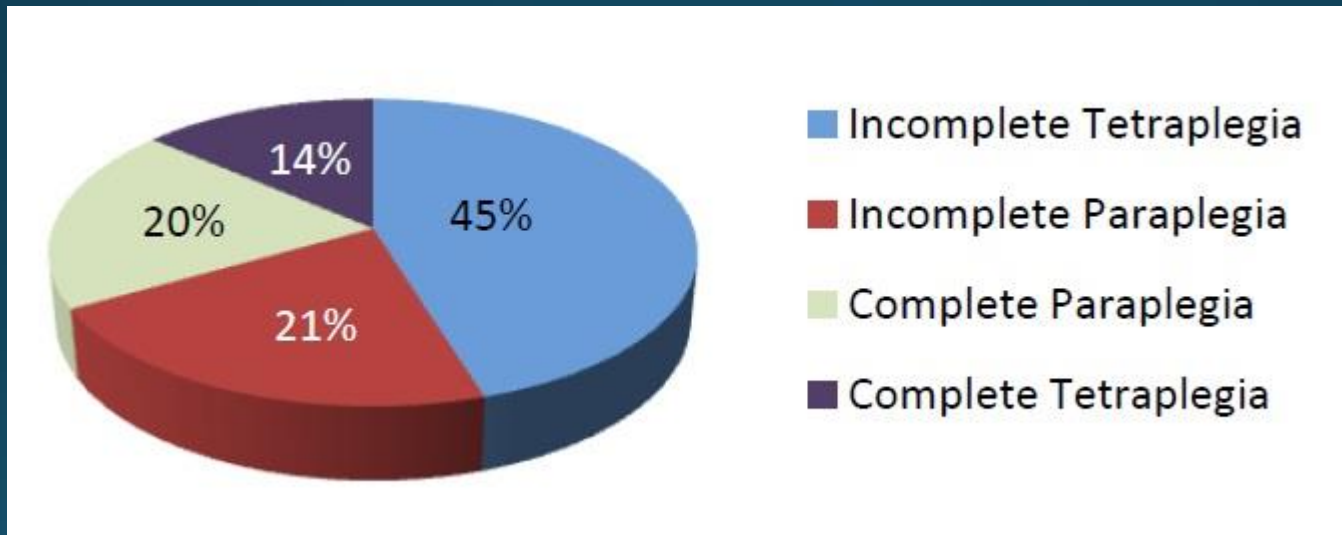


Etiology

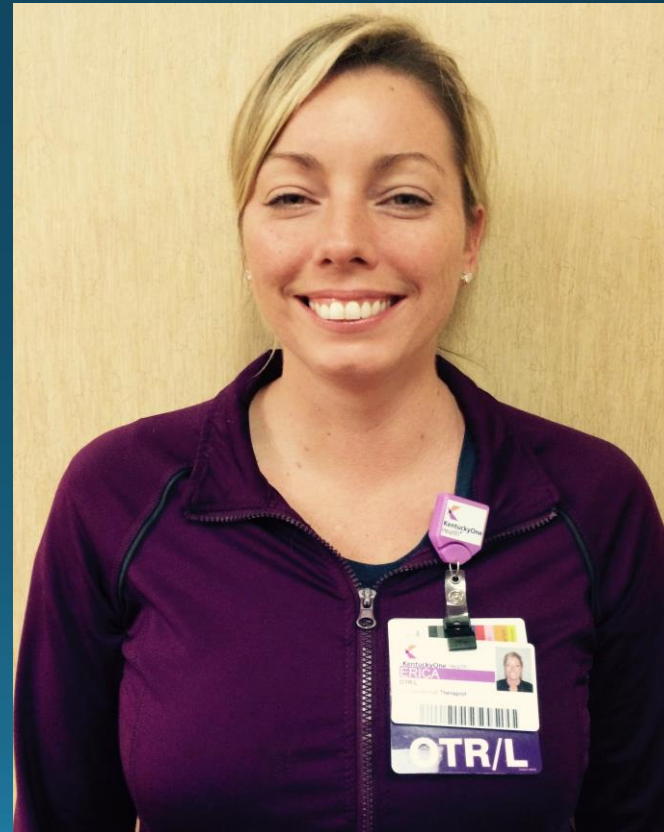
Vehicle crashes are currently the leading cause of injury, followed by falls, acts of violence (primarily gunshot wounds), and sports/recreation activities.



Neurological Extent of Injury



The Nurse and Occupational Therapist Team



Materials and Methods

Our OT/Nurse collaboration was performed in 30 minute sessions, 5 days per week. Sessions involved self-catheterization education, hand function examination to help select an appropriate catheter and provision of adaptive equipment when deemed appropriate such as dycem, pant holder and subsequent hands on assist.

Participants

5 Adults with acute traumatic spinal cord injuries.

- 4= less than one year post injury
- 1=4 years post injury
- Mean age of initial episode of care was 27 range
- Level of injury
 - Cervical=4
 - Thoracic=1
- Asia Level
 - A=2
 - B=2
 - C=1



Meet Our Participants

KWJ

22 yo male who was a restrained driver in an mva on 2/17/15. Sustained a cervical SCI with C5-6 subluxation, fracture and dislocation as well as 2 rib fractures and left vertebral artery injury.

KWJ was going to play football for Louisiana Tech, he decided in the middle of the night that he would travel to Kentucky prior to spring training to see his father, step-mother and sisters, he has never driven on snow and ice.



At inpatient discharge, KWJ was dependent upon his step-mother and 17 year old sister to catheterize him and perform his bowel program. The catheter that best suited his family was the Coloplast speedi cath compact.



Outpatient Setting

7 months status post injury, KWJ came back to complete his outpatient visits.

He decided after completion of his outpatient program, he wanted to move back to Louisiana to live with his mom. His mom said the only way he could come back was if he learned how to catheterize himself as she was not able to be there at all times.



Erica, his occupational therapist and myself knew that he had the cognitive ability to learn how to perform self-catheterization and that he was motivated to do so. She also knew that KWJ demonstrated good use of tenodesis grasp to manipulate objects. It was then decided that the first goal was have him practice opening various catheter packages and manipulating the contents.



Next we worked on strategies to position himself in his wheelchair and issued him several options for clothing management, which included a metal pant holder and a bungee cord to keep his clothing out of the way while performing self-catheterization



First session:

We determined that the bungee cord worked best to hold his pants. We found a hole on each of his footplates on his power chair that was a perfect fit for one end of the bungee cord. We tried different lengths of bungee's until we found the perfect one.

Second & Third session:

KWJ was able to place one end of the bungee cord in the hole on the footplate, then pull it up and hook it onto his pants and brief.

Fourth & Fifth session:

Determined by KWJ, myself and his OT, we collaboratively decided on a catheter that was best for him, speedi cath hydrophilic, due to its ease of access for KWJ when opening the package as well as the catheters rigidity. He practiced opening and grasping the catheter. He did try the speedi cath compact, but with the pant holder and positioning, it didn't work.

Session Six & Seven:

KWJ practiced hooking the extension tubing to the catheter with his mouth and placement of a urinal which he hooked to the handle on the side of his wheelchair cushion.

Session Seven-Eleven:

We practiced clean technique catheterization with hands on assist if needed. At session eleven, we deemed him competent in clean, intermittent self-catheterization.

He was able to move back to Louisiana and as of today is still independent with self-catheterization. KWJ speaks to high school age students about his story.



DTH

28 year old male

DOI: 1/7/16

Gun Shot Wound

C-7 Tetra

Asia A complete

Co-treatment started 5
months status post injury

Discharged with Vapro Plus
Pocket for caregiver
dependence



DTH also was able to manipulate a bungee cord verses the pant holder and actually hook it on his shoe lace.

It took eight co-treatment sessions using the same catheter at inpatient discharge to be deemed competent at clean intermittent self-catheterization.

His wife is happy she doesn't have to wake up in the middle of the night and come home from work just to cath him.

COS

26 year old female

DOI: 3/13/16

Fell off of a second floor balcony

T5-11 para

Asia C incomplete

Co-treatment began 16 days status post injury

COS was able to transfer to commode

A thigh mirror was used to learn anatomy

Only took 3 co-treatments, she was able to self-catheterize by feel



CBO

44 yo female

DOI: 10/2/2015

C6-7 disk herniation with
myelopathy

Asia B incomplete

Co-treatment started 4 months
s/p injury

Discharged with speedi cath 16
inch due to her anatomy.

We tried numerous catheters
and methods such as a step-
stool in front of the commode
and leg straps, with no success.
Unfortunately she was not able
to obtain independence with
self-catheterization and relies on
her daughter.



AMA

17 years old

DOI: 5/22/12

MVA

C6 Asia A

At discharge, she left with Hollister Advance Plus Touch Free Intermittent Catheter Kit, dependent upon all family members for catheterization

On 12/17/2014, ABA underwent urinary diversion, but was still dependent on family members to cath her.

In July of 2015, AMA decided she was ready to be more independent and attend college, it was then that she returned to outpatient rehab for her summer 'tune up'. We collaboratively agreed cathing was number one priority.



We decided to trial several different all in one catheters and have her manipulate the packaging and catheter.



I chose the MTG Gripper for her catheter trial due to her lack of tenodesis and a bungee cord to use as a pant holder.



First Session:

I catheterized her using the new catheter we had collaboratively chosen. We measured the length that the catheter needed to be out in order to start urine flow

Second & Third Session:

She was able to open the catheter packaging and open the sterile towelette to clean her stoma.

Fourth through Eight Session:

AMA used her mouth on the gripper to advance the catheter to the correct length to enable her to catheterize.





After eight sessions she was competent in clean technique self-catheterization. She is now 21 years old, holds a job attends college and enjoys many, many of life's pleasures...







At inpatient discharge all five participants were dependent on a caregiver for catheterization.

After this case study, 4 of 5 patients were able to proficiently perform clean intermittent catheterization.

The interdisciplinary collaboration between a nurse and occupational therapist related to independent self-catheterization proves that this team approach has improved quality of life for these individuals. In conclusion, SCI programs should implement such training systems into their outpatient settings to maximize efficacy of training.

It takes a special person to do what we do every day. Someone with passion, respect and empathy for those in our care. We do not choose to be a Spinal Cord Injury Nurse; it chose us.