



## PREVENTION OF FALL-RELATED INJURIES IN HEMODIALYSIS PATIENTS

Wheeling Renal Care  
Wheeling, WV

### Contact Information:

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<b>Category:</b>	Patient Falls
<b>Type of Facility:</b>	Independent Dialysis Facility
<b>Number of Patients:</b>	180 Approximately
<b>Number of Physicians:</b>	
<b>Number of Nurse Practitioners:</b>	
<b>Number of Physician Assistants:</b>	

### Background

Wheeling Renal Care (WRC) is an independent group of three dialysis facilities, providing care to approximately 180 patients. After several fall events occurred in late 2001- early 2002, staff conducted a retrospective survey among 138 patients to review fall events during the previous six months. Although dialysis population-specific data on falls had not been published at the time, the study included review of publications related to patient falls in the general population. The review identified that 33 percent of "healthy" people over age 65 fall each year, and that 5 to 10 percent of falls result in serious injury. A patient's history of a fall is the most accurate predictor of future fall risk, and simple screening tools, referral for physical therapy and other evaluation have been identified as effective preventive elements.<sup>1</sup>

The WRC retrospective survey found:

- 55 (40 percent) patients reported having fallen at least once.
- 15 percent had multiple falls.
- 71 percent of patients who fell during the six-month period recalled having fallen on prior occasions; even 41% of patients who had not fallen during the 6-month period recalled having fallen remotely.
- 26 percent suffered injuries (emergency room or hospital admission).
- Nine percent had fractures.
- 10.9 percent required hospitalization.

Further, patients who had experienced falls during the prior six months were more likely to: live in a nursing home, have had prior CVA (what's CVA?), be blind, use assistive devices, or have had prior falls. The list of potential risk factors identified through the survey results is displayed below.

### Potential Risk Factors for Falls in Dialysis Patients

- Impaired Cognition
- Degenerative Arthritis
- Peripheral Neuropathy
- Peripheral Vascular Disease
- Lower Extremity Amputation
- Living Alone
- Vision Impaired
- Environmental Factors (weather, obstacles, etc.)
- Medications
- Assistive Devices
- Poor Physical Functioning
- Prior Fall
- ID fluid removal

The study results led to policy changes (detailed below) to help staff identify and prevent injuries from falls. After its facilities had begun routine questioning about falls (per policy changes), WRC conducted a prospective analysis of all falls occurring among patients at its three facilities. Analysis revealed:

- Each month, approximately 6.5 percent of patients undergoing hemodialysis will fall.
- Most common reasons for falls are tripping or slipping, loss of balance, and weakness.
- Most falls occur in patients' homes (82%), on non-dialysis days.

### Fall Prevention Policies Implemented

Based on the results of the two studies WRC's medical director and exercise physiologist developed new policies, which are consistently implemented:

1. Fall risk assessment for all patients: WRC's staff exercise physiologist performs a comprehensive fall risk assessment on all patients, including a physical conditioning assessment, review of medications that may predispose the patient to falls, and a questionnaire about home environs. The assessment provides a baseline of the patient's fall risk, presents the opportunity for staff to discuss home environment issues with the patient and caregiver(s), and identifies need for physical strengthening and/or physical therapy (see #3).
2. Focused educational programs for patients, caregivers, and staff: New staff are trained in all fall risk assessment procedures and fall prevention policies, and additional training is provided to all staff during in-services twice each year or more often, as issues arise. Patient and caregiver education includes focused fall prevention articles in newsletters (6 issues per year), a series of brochures, and postings on patient education bulletin boards.
3. Physical strengthening exercises/physical therapy referral: Based on a patient's fall risk assessment, the exercise physiologist addresses physical functioning or strength issues in a variety of ways. These may include referral to a physical therapist for an assisted device, or individually tailored strength/exercise training to increase coordination and muscle function.
4. Pre-Dialysis Assessment: Preceding each dialysis treatment, each patient is asked about any falls that have occurred since the previous dialysis, and information is entered in the medical record. Prior to initiation of dialysis, the nurse determines the need for physician notification and/or adjustment in dialysis heparinization. Staff gathers the following information from patients as part of every dialysis session. All new staff are trained to do so, and additional training is included in staff in-services at least semi-annually, or more often as new issues arise.

*Have you fallen since your last dialysis treatment?*

*Describe why you fell.*

*Where did you fall?*

*How long after your last dialysis did this fall occur?*

*Did you experience any injury?*

*If so, did you visit the emergency room? Were you admitted to the hospital?*

5. **Physician notification:** Staff record all falls in the patient's record and notify the physician based on specific criteria. The physician is notified immediately if:

- » Serious injury results (soft tissue trauma, suspected fracture, etc.)
- » Any fall occurs in the dialysis facility
- » Any acute change in patient condition, subsequent to a fall (i.e., up to 1 week)
- » Any head injury, active bleeding

Otherwise, physician notification is determined by the charge nurse.

6. **Dialysis heparinization:** For any patient who has fallen prior to a dialysis treatment, anticoagulation may be adjusted.

- Heightened alert for all patients receiving Warfarin
- Prothrombin time/International Normalized Ratio preceding any dialysis treatment subsequent to a fall/injury
- Heightened alert for considering decreasing or withholding heparin

### **Additional Recommendations**

As these fall prevention policies have been implemented, WRC has concluded:

- Falls among dialysis patients are common, especially outside the dialysis unit.
- Virtually all dialysis patients are at risk for falls, since many have typical fall-risk conditions.
- Falls may result from weakness or instability associated with subtle, unrecognized illnesses.
- Falls among dialysis patients may result in expensive hospitalization.
- Patients and caregivers tend not to report falls or injuries they deem to be "minor."
- Dialysis staff are generally not trained to ask about or perform a fall-risk assessment.
- Unreported falls or unrecognized injuries may have serious complications in dialysis patients.
- Patients may not be properly instructed in the use of assistive devices.

Based on its policy implementation and data analysis, WRC recommends that:

- Dialysis facilities should include patient and care-giver education and fall-risk assessment in their routine policies and procedures.
- Dialysis exercise programs may reduce risk for patient falls through targeted patient assessment, specific muscle and gait strengthening activities, and instruction in proper use of assistive devices.
- Dialysis patients and caregivers should be routinely questioned about falls.
- Dialysis staff must be aware of the potential for delayed sequelae of falls.
- Adjustment in dialysis anticoagulation should be considered whenever soft tissue injury, fracture, or head injury occur.
- Fall prevention interventions need to be patient-specific.

### **Fall Prevention: Basics To Remember**

- All dialysis patients are at risk of fall and related injury.
- Simple queries help identify patients at highest risk.
  - Have you fallen in the past (year)?*
  - Do you have a walking or balance problem?*
- Delayed consequences of falls must be anticipated, especially related to anticoagulation
- Physical strengthening, especially for lower extremities, improves balance and lowers risk for falls.