



## Fact Sheet: Patient Safety in the Dialysis Facility: A Basic and Practical Approach

### Patient Safety Is A Priority

Keeping patients safe while in the dialysis facility environment is a topic of great concern for patients and providers. Oversight agencies such as ESRD Networks, State Survey Agencies, and the Centers for Medicare and Medicaid Services (CMS) treat this matter very seriously as well. In 1999, the Institute of Medicine (IOM) published a report entitled "To err is human: Building a safer health care system". The IOM study indicated that 44,000 to 98,000 hospitalized patients die annually as a result of medical errors.

Under the Medicare Conditions for Coverage §405.2136, the following is stated:

*The governing body through the chief executive officer of the ESRD facility is responsible for maintaining and implementing written personnel policies and procedures that support sound patient care and promote good personnel practices. These policies and procedures ensure that:*

*(1) All members of the facility's staff are qualified to perform the duties and responsibilities assigned to them and meet such Federal, State, and local professional requirements as may apply. (2) A safe and sanitary environment for patients and personnel exists, and reports of incidents and accidents to patients and personnel are reviewed to identify health and safety hazards.*

Caring and competent health care professionals make errors. This is a difficult part of being human. Being costly in terms of both patient suffering and medical care, patient safety must be made a facility priority beginning with the management and actively involving each employee. By utilizing the principles of continuous quality improvement, root causes of accidents can be identified resulting in the incidence of patient injuries being decreased and possibly prevented.

### Patient Safety in the Dialysis Facility

There are many possible causes for patient injury within the dialysis environment. The process of providing dialysis treatments includes the use of medications, chemicals, machinery, and physical activity on the part of the patient. When time constraints and staffing difficulties are added to the equation, it is understandable how and why injuries occur. Some common sources of injuries are listed below:

- ❖ Medication errors
- ❖ Blood administration errors
- ❖ Falls
- ❖ Equipment malfunction
- ❖ Chemical exposure
- ❖ Medical Record errors
- ❖ Similar Name errors
- ❖ Deviation from policy & procedure
- ❖ Infection control errors
- ❖ Dialysis prescription errors

By examining each of these sources individually, common root causes of errors can be explored and practical solutions developed to prevent future errors and/or patient injury.

### Medication Errors

According to the 1998-2001 National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP), "A medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, procedures, and



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*systems, including prescribing; order communication; product labeling, packaging, and nomenclature; compounding; dispersing; distribution; administration; education; monitoring; and use."*

With the advances in the practice of medicine come new drugs to treat disease. Each drug administered in the dialysis facility brings with it the potential for human errors. First, it is important to review the "five rights" basics of drug administration that nurses are taught early in drug administration training: **right patient; right time; right drug; right dosage; and right route.** Errors can happen when one or more of the "rights" are missed. Just knowing and using the "five rights" can't prevent all errors, but it is a place to begin! To further complicate matters, many medications are packaged similarly. Any drug dosage can be miscalculated or given to the wrong patient. Also added to the picture is the fact that non-licensed staff members are administering routine medications (such as Heparin and Lidocaine) in the dialysis setting. Sometimes agency-based dialysis nurses are utilized to maintain staffing ratios. These temporary staff nurses may not be able to identify patients or be familiar with the facility protocols. Unlike the hospital setting, dialysis patients in the outpatient facility do not wear name band identification bracelets.

It is sobering to think about errors that have happened in good dialysis units. Patients have received Hepatitis B vaccine intravenously instead of intramuscularly. Overdoses of Heparin can be easily administered. Serious reactions have occurred from iron administration. Antibiotic administration must be carefully performed as patients' may have multiple medication allergies.

Careful attention needs to be paid to the packaging and storage of medications. Heparin has been mistaken for Lidocaine and vice-versa- each is a clear solution and may be packaged in similar vials. When possible, avoid purchasing products with similar packaging. However, some corporate purchasing contracts limit the number of available vendors. If "look-a-like" packaging is unavoidable, try to store products in different locations or draw further attention to the product by using brightly colored alert stickers or another means of alert.

The labeling of medication syringes is imperative. The name of the drug, dosage, time, date, and patient name should be clearly indicated. Commercial labels are available to aid staff members in quickly preparing syringes. Ideally, syringes are prepared at the time of use, and administered by the individual that prepared it.

### **Blood Administration Errors**

When administering blood products in a dialysis setting, special considerations must be taken. First, the physician's order must be accurately communicated to the blood bank and patient consent obtained. Follow the facility policies and procedures for proper identification of the patient, administration of blood products, and monitoring the patient before, during, and after the receipt of the blood.

During dialysis, blood can be given more rapidly than in other settings. It is very easy to miss monitoring the patient's vital signs during rapid administration. Care must be taken to monitor the patient adequately during administration. The patient must be aware of the signs and symptoms of a blood reaction following administration. Careful documentation of the entire process is important.

### **Patient Falls**

The average age of dialysis patients is now roughly 65 years of age. Patients frequently have co-morbid conditions that can affect their ability to ambulate. Utilizing patient assist devices such as walkers, canes, or wheel chairs can be of help. Staff member training in the proper techniques of patient transfer is important to prevent injury to either the patient or staff member.

The dialysis environment requires the use of water and many other liquid products. Falls can occur when liquids or powders are spilled on the floor. Identifying wet floors, and having equipment readily available to mop up spills can prevent injury, especially during the change of shift when more people are present in the treatment area.



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There is potential for falls both prior and following the dialysis treatment. Prior to the initiation of treatment, the patient may be short of breath and unstable ambulating due to increased weight gains.

The act of stepping on or off of the scales, maneuvering around equipment, and walking even short distances may be complicated by hypotension following the dialysis treatment

Take the time to evaluate the environment of the dialysis center for hazards that can cause falls and follow up with preventative measures.

### **Equipment Malfunction**

When equipment or maintenance problems cause patient deaths or serious injuries, these should be reported to the manufacturer and/or the Federal Drug Administration (FDA) as appropriate and steps taken to prevent similar occurrences from happening in the future.

In dialysis settings, it is important to remember to be able to track the lot numbers of items such as, but not limited to, machine tubing, drugs, and dialyzers. In the event of manufacturing defects, the lot numbers can be used to identify facilities at risk or batches of product that are affected.

The Medicare Condition for Coverage §410.2140, states:

*The physical environment in which ESRD services are furnished affords a functional, sanitary, safe, and comfortable setting for patients, staff and the public.*

*All electrical and other equipment used in the facility is maintained free of defects, which could be a potential hazard to patients and personnel. There is established a planned program of preventive maintenance of equipment used in dialysis and related procedures in the facility.*

### **Chemical Exposure**

Any chemical must be treated with respect, as the potential for patient exposure. A variety of chemicals such as dialysate, vinegar, bleach, Renalin, and formaldehyde are used in the dialysis facility. Bleach is used to wipe down surfaces in a facility to prevent the spread of blood borne pathogens posing a risk for patient exposure. It is possible to fling bleach onto patients sitting nearby.

The packaging of some chemical is similar in nature. Many chemicals are contained in jugs or plastic bottles that can be mistaken for one another. Obtaining and maintaining material safety data sheets (MSDS) on all chemicals is an Occupational Safety and Health Administration (OSHA) requirement. Never use anything from an unlabeled container!

### **Medical Record Errors**

In the dialysis facility, the physical location of the patient chart, Kardex, and treatment flow sheet clipboard may not always be near the patient. In some facilities, only the clipboard with the treatment flow sheet is at the chair side with the patient. Vital information about the patients' allergies, co-morbid conditions, medications, dialysis prescription, must be readily available to care givers. Failure to indicate allergies can be catastrophic. Audit your facility treatment flow sheets to determine if vital information is included. Computerized treatment flow sheets are a wonderful by product of advances in dialysis technology. However, it is possible to become overly reliant on the computer-generated documentation. At the Network, we recently reviewed thousands of flow sheets and discovered that even the computerized sheets lack necessary information. The old computer adage of "garbage in/ garbage out" applies. The machine operator must input the appropriate data for the machine to output a complete record of the treatment. Avoid the pitfall of relying on a false sense of security when using computerized sheets.

Handwritten treatment flow sheets are often very difficult to read. Not only do staff members have varying degrees of handwriting skills and the use of unidentifiable abbreviations only increases the possibility of errors. Physicians have traditionally been ridiculed for illegible handwriting. After the Network review of handwritten flow sheets, it is safe to say that all staff members have the potential for messy writing!



### **Similar Patient Names**

It is very common to have patients with the same or similar names in the dialysis setting. Even names that are different but rhyme can be very confusing. Staff members and physicians can be discussing a particular patient while using another patients' name. It is imperative to clarify which patient is being referred to, especially when physicians' orders are being given. Staff members and physicians can help each other in this regard. Some method of similar name alert system must be in place to prevent identification errors. This is especially important when the facility reuses dialyzers.

### **Deviation from Facility Policy & Procedure**

When a staff member operates outside of the protection of facility policies and procedures, the patient, staff member, facility, and possibly corporation are put at great liability risks. The importance of following policies and procedures cannot be over emphasized.

As stated in the Medicare Conditions for Coverage §405.2136:

*The ESRD facility has written policies, approved by the governing body, concerning the provision of dialysis and other ESRD services to patients. The governing body reviews implementation of policies periodically to ensure that the intent of the policies is carried out. These policies are developed by the physician responsible for supervising and directing the provision of ESRD services, or the facility's organized medical staff (if there is one), with the advice of (and with provision for review of such policies from time to time, but at least annually, by) a group of professional personnel associated with the facility, including, but not limited to, one or more physicians and one or more registered nurses experienced in rendering ESRD care. The physician-director of the facility is designated in writing to be responsible for the execution of patient care policies. If the responsibility for day-to-day execution of patient care policies has been delegated by a physician director to (or, in the case of a self-dialysis unit, to another licensed health practitioner) a registered nurse, the physician-director provides medical guidance in such matters.*

### **Infection Control Errors**

Even with the availability of Hepatitis B vaccine, it is still important to protect the dialysis patient from blood borne pathogens and other sources of infection in the dialysis facility. Following the facility policy for disinfecting surfaces, administration of vaccine, and laboratory surveillance remains a high priority. Acquired immune deficiency (AIDS), Tuberculosis, Hepatitis B, Vancomycin Resistant Enterococcus (VRE), and Methicillin Resistant Staphylococcus aureus (MRSA) are just a few examples of pathogens potentially present in a dialysis facility. Additionally, getting back to the basics of good hand washing techniques cannot be stressed enough.

### **Dialysis Prescription Errors**

The dialysis prescription is an individualized method for administering the most beneficial dialysis treatment to the patient. Components of the dialysis prescription include treatment duration, model and size of dialyzer, blood flow rate, and dialysate flow rate. Deviation from the prescription can result in injury to the patient or inadequate treatments. During a recent flow sheet audit, the Network staff reviewed over 2,000 flow sheets comparing them to the dialysis prescription. Of the 2685 flow sheets reviewed, 93.9% of the patients achieved the correct duration of treatment, 95.9% documented that the patients received the correct dialyzer, and 91.4% of the patients achieved the correct blood flow rate. While these numbers are good there is more room for improvement. Inadequate documentation was noted on both computerized and handwritten sheets. Provide your Medicare beneficiaries with the dialysis prescription written by the physician for which you are being reimbursed by CMS.

### **Adequate Staffing in the Dialysis Facility**

It is not the intention of this article to define adequate staffing ratios, but facilities providing dialysis service to Medicare beneficiaries must staff according to the needs of the patients. By evaluating your own unique dialysis patient population, staff training, and patient needs, your patient care team can determine the



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specific staffing requirements for your facility. In assessing the staffing needs of your facility it is, however, important to review the Medicare Conditions for Coverage §405.2162 relating to staffing:

*Properly trained personnel are present in adequate numbers to meet the needs of the patients, including those arising from medical and non-medical emergencies. (a) Standard: Registered Nurse, The dialysis facility employs at least one full time qualified nurse responsible for nursing services (see §405.2102). (b) Standard: On-duty personnel, whenever patients are undergoing dialysis: (1) One currently licensed health professional (e.g., physician, registered nurse, or licensed practical nurse) experienced in rendering ESRD care is on duty to oversee ESRD patient care; (2) An adequate number of personnel are present so that the patient/staff ratio is appropriate to the level of dialysis care being given and meets the needs of patients; and (3) An adequate number of personnel are readily available to meet medical and non-medical needs.*

### **Conclusion**

It is the responsibility of all health care providers to work together to promote a safe environment for patients in the dialysis care setting. "Any error that causes harm to a patient is on error too many." Said Dr. Nancy Dickey, past president of the American Medical Association. Would you be comfortable allowing your favorite family member or a good friend to receive his or her dialysis treatments at your facility? If not, work creatively with your care team to improve systems at your dialysis center. "Errors can be prevented by designing systems that make it hard for people to do the wrong thing and easy for people to do the right thing." said William Richardson, President of the W. K. Kellogg Foundation. What proactive steps can your facility take to make dialysis treatments safer for your patients?

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