

Infection Control in Dialysis Learning Packet Home Training and at Home



Introduction

NKC clinical staff receive infection control education through orientation, yearly inservices, the NKC Quality Improvement Program (including unit infection control audits), and miscellaneous programs provided by the Medical Directors and Education Services Staff. The basic infection control principles and practices must be applied to all clinical practice settings including our center facilities, home training units, and patient homes.

Objectives

Upon completion of this learning packet the learner will be able to....

1. List 5 general moments during the care of any patient when hand hygiene should be done.
2. Demonstrate and explain how hand washing should be done and when soap and water must be used for hand hygiene as opposed to alcohol based gels.
3. Demonstrate how to remove fluid resistant lab coats.
4. Demonstrate how to put on and take off an isolation gown, glove and face shield.
5. Explain how to dispose of effluent in terms of infection control practices.
6. Identify the clean and dirty areas in unit or facility.
7. Identify the clean and dirty areas in a patient's home related to dialysis treatments.

Instructions

Read and complete the packet by answering the questions included in the content. Check your answers against the answer sheet at the end. Reread any section(s) where answers have been missed. Sign the verification box at the end. Your signature means that you have completed the process and are responsible for knowing the packets content. Turn the signed packet into your Manager.

Part One

Back to the Basics: Infection Control Reminders

Infection control practices prevent the spread of infection and promote the health & safety of patients, co-workers, yourself and your significant others.

For an infection to develop, each link of the chain must be connected.

For an infection to be stopped any link in the chain can be broken.



To break the chain of infection we ...

1. Identify clean and dirty areas in the environment.
2. Wash hands.
3. Wear personal protective equipment.
4. Disinfect equipment, supplies, and other surfaces.
5. Use aseptic and sometimes sterile techniques for procedures.
6. Isolate patients with Hepatitis B, C-Diff, VRE and sometimes MRSA
7. Immunize staff and patients

Let's take a closer look at some of the things we do to break the chain of infection.

Part Two **Hand Hygiene**

The most common way for pathogens to be spread is on people's hands. Therefore, the appropriate use of hand hygiene is the most effective way we can break the chain of infection.

An easy way to remember when hand hygiene should be done is to remember the World Health Organization's... **Five moments for hand hygiene**



Hand hygiene must be preformed

Before touching a patient

After touching a patient


Before a procedure

After a procedure

After touching patient surroundings

How you wash your hands is just as important as when you wash your hands.



Hand Hygiene in the Dialysis Environments		
<p>Soap and Water</p>	<p>Hand washing with soap and water is done when hands are visibly soiled with blood, body fluids, or contaminated with other protein containing material.</p> <p>✓ Hand washing requires a minimum of 23 seconds of vigorous rubbing to complete the 7 steps. (SureWash 2013)</p> <p>✓ Remember: the hand washing sinks are clean, but the faucets, soap dispenser, and paper towel holders, are dirty.</p> <p><u>Use a paper towel to turn off faucets</u></p>	<p>Use soap and water to wash your hands:</p> <ul style="list-style-type: none">• After using the bathroom• After coughing, sneezing or blowing your nose• When visibly soiled with possible protein containing materials• Before going to the break room to eat or drink• Before leaving the floor to do personal things like reinserting contact lenses. 
<p>Hand Gels</p>	<p>As mentioned above it takes a minimum of 23 seconds to wash your hands whether it is with a gel or soap and water. All 7 steps must be completed and rubbing should continue until the gel has dried.</p>	<p>Use the gel sanitizer or wash with soap and water:</p> <ul style="list-style-type: none">• When entering or leaving the patient treatment areas.• When moving from dirty to a clean areas of the unit• Before and after use of a computer.

		<ul style="list-style-type: none"> • Before preparing clean dialysis supplies or medications • After casual patient contacts • Before and after any activity requiring gloves.
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Name the six links that make up the chain of infection:

- | | |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | 6. _____ |

Part Three

PPE in the Dialysis Environments



<p>Gloves</p>	<ul style="list-style-type: none"> ✓ Gloves are worn when there is a potential risk for exposure to blood, other body fluids, dialysate, or any potentially contaminated surfaces. ✓ When gloves are worn with a lab coat they should extend over the arm cuffs to protect the skin on the lower part of the arm and wrist. 	<p><i>Wear gloves</i> when caring for patients or touching patient's equipment in the dialysis station. This includes...</p> <ul style="list-style-type: none"> • Performing patient assessments • Working with dialysis accesses • Setting up machines (even though the station has been surface disinfected). • Coupling and uncoupling • Handling the blood lines during and post treatment • <u>Gloves must be worn to monitor and answer alarms</u>
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		<ul style="list-style-type: none">• Touching surroundings in the patient training rooms.• Stripping machines post dialysis• Surface disinfecting the dialysis stations• Administering medications• Working with infectious waste• Performing activities in the dirty utility rooms
<p>Gloves</p>	<p>Gloves are changed frequently when doing patient care. This prevents the transmission of infectious agents between patients, staff and visitors.</p> <p>Remember to remove gloves without contaminating hands with soiled material.</p>	<p>Gloves are changed and hand hygiene is done:</p> <ul style="list-style-type: none">• When moving between patients• When going from a dirty to a clean task• When visibly soiled• Before administering medications• Before access care pre and post dialysis

Demonstrate proper glove removal.

You are washing your hands with soap and water. List the 7 hand positions you will use to ensure that you have cleaned all surfaces of your hands effectively.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

<p>Lab Coats</p>	<ul style="list-style-type: none"> ✓ Wear a fluid resistant lab coat, or gown when there is a risk of exposure to blood and other body fluids ✓ <u>The garment must be closed in front. It must cover from the knees to the neck area including both arms. Gloves should be pulled up over the cuffs of the lab coat.</u> 	<p>Lab coats are worn when...</p> <ul style="list-style-type: none"> • Coupling and uncoupling • Working with accesses • Giving medications via extracorporeal circuit or by injection • Cleaning and disinfecting the dialysis station • Engaged in activities in the dirty utility room where a spray or splash might occur. <p>Lab coats are ...</p> <ul style="list-style-type: none"> • Taken off and hung on a dedicated rack with the inside of the coat facing out when off the floor and working in clean areas. • Changed weekly in the dialysis units and whenever they get dirty.
<p>Face Shields</p>	<p>Face protection is worn whenever there is a risk of blood or body fluid exposure from a splash or spray.</p>  <ul style="list-style-type: none"> ✓ Approved face masks and goggles can be worn in place of face shields. ✓ Face masks must cover the entire nose and mouth area. 	<ul style="list-style-type: none"> • Face shields should be wiped down with the approved NKC surface disinfection solution. It is used per manufacturer's instructions. • Goggles are treated like face shields and wiped down with the NKC surface disinfecting solution. • Masks must be changed after each procedure/patient.



Isolation Rooms

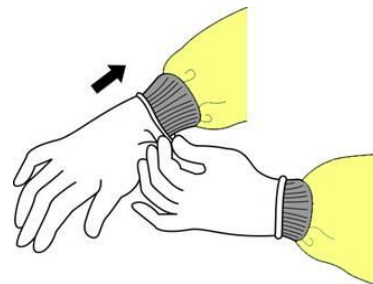
The Rules

1. When entering isolation rooms **EVERYONE MUST** don a back closing fluid resistant isolation gown and gloves. The only exception is for security who may not want to don gown due to weapon access.
2. Face shields or goggles/masks **MUST** remain in the isolation room and shall be cleaned with soap and water at the end of each shift.
3. Anyone touching the patient, computer, dialysis machine, or any interior isolation room surface must wear gloves.
4. Visitors to isolation rooms must wear gowns and gloves. Any personal items such as purses or back packs must be put into a bag prior to entering the isolation room so they do not become contaminated. Staff will assist visitors entering and leaving the isolation rooms so that infection control procedures are followed.
5. Patients dialyzing in isolation rooms are generally discouraged from bringing personal items into the isolation area. If personal items are brought into the room for use during treatments (blanket, lap top etc) those items are considered contaminated. They are double bagged out when the patient leaves and must remain in the bags until the patient has left the facility. Staff will assist patients entering and leaving isolation rooms so infection control procedures are followed.

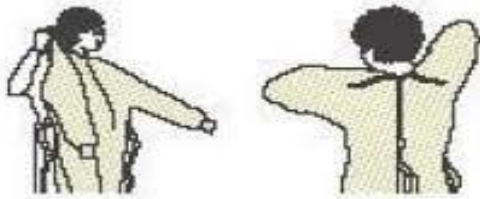
Isolation Room Procedures

❖ **Get ready to enter an Isolation Room:**

Assemble supplies before entering the room. Wash hands, put on gown then gloves, pull the gloves over the cuffs of the gown.



If you are re-entering the room, wash your hands and put on gloves. Reach inside the room and take the gown that is folded with the inside protected off the hook. Put on the gown keeping the gown itself inside the room. Fasten at the neck then the waist. Remove gloves, complete hand hygiene and don new gloves.



❖ **While in the Isolation Room:**

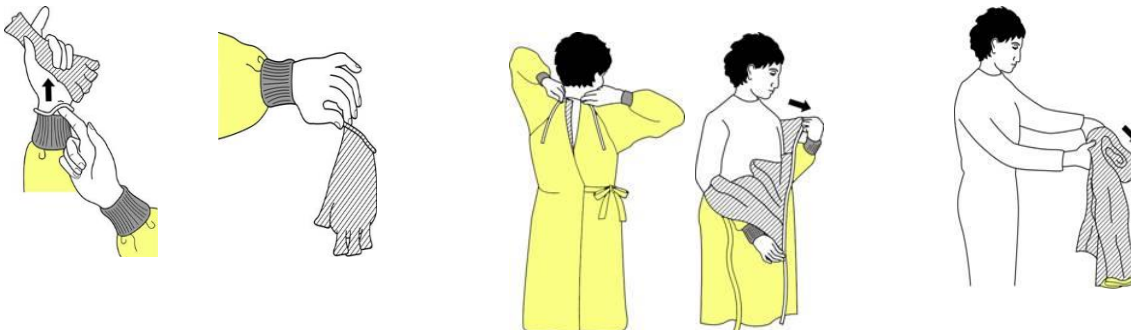
Gown and gloves must be worn at all times inside the room. Use the designated equipment located inside the room (B/P cuff, stethoscope, pens). Face shield or mask and goggles must be worn during on's/off's, and blood draws. Face shields, stethoscopes and goggles are washed inside the room with soap and water at the end of each shift.

❖ **Double Bagging Out of the Isolation Room:**

Dirty linen and/or garbage must be double bagged in red bio-hazard bags when taken from the room. Two people are required. The person inside the room places the bag with dirty contents into a clean bag held open by the second person standing just outside the entry to the isolation room.



❖ **Removing Isolation Wear:** Complete hand hygiene and put on clean gloves. Remove face shield or goggles and mask. Untie gown at the neck and then the waist. Take off gloves by pinching one on the outside and turning it inside out as you peel it off of your hand. Use a finger under the cuff of other glove and turn it inside out as you remove it. Take gown off protecting the inside if it is to be reused. Slide a finger under the gown cuff to pull down one sleeve. Use the hand protected by the sleeve to pull down the remaining sleeve. Fold the inside in and hang the gown on the rack if it is to be reused. If not, turn the gown inside out as you take it off, roll it up and place it in a linen bag. Wash your hands in the room and again once out of the room.



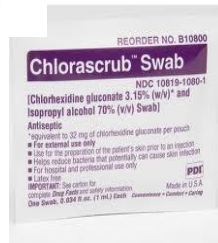
Part Four

Disinfecting the Environment

Know Your Disinfectant



A number of disinfectants are used in the dialysis environment. It is important to know what each product is used for and the amount of contact time required for it to work effectively.



Alcohol: Skin prep and surface sanitizer for Exergen thermometers. Allow it to dry/3 minutes of contact. It kills a variety of bacteria and viruses but not spores.

Betadine: Skin disinfectant that requires 3 minutes of contact time. Usually applied and allowed to dry.

Bleach 10% (1:10 dilution): Surface disinfection. Used in C. Diff isolation. To kill spores requires a 4 minute wet contact time. Orange top bleach wipes are also acceptable

Bleach 1% (1:100 dilution): Used to clean machine buckets and clamps. Requires a 3 minutes of contact time.

Hydrogen Peroxide Wipes: General surface disinfection in patient treatment areas. Requires a 1 minute wet contact time to kill both bacteria and viruses.


Clorox Citrace Germicidal Disinfectant: Spray disinfectant used to clean privacy screens and patient slings. Requires 30 seconds of contact time.

Red Top Sani-cloth wipes: General surface disinfection, used to clean computers and phones. Requires 3 minute wet contact time.

Chlorhexidine 3.15% and Alcohol 70% Swabs: Skin disinfectant. Clean with friction for 15 seconds and allow to dry for 30 seconds.

Hand Sanitizer Gels 60-70% alcohol. Apply enough to cover hands. Continue to rub hands together covering all surfaces until the gel has dried.

<p style="text-align: center;">Disinfecting The Dialysis Station</p>	<p>Failures in environmental cleaning and disinfection have led to the transmission of blood borne pathogens in dialysis units.</p> <ul style="list-style-type: none"> ✓ Beware that cleaning and disinfection practices during patient changeover periods are particularly prone to error and increase the risk of cross contamination. ✓ Pay special attention to machine control screens and chairs. These surfaces are frequently touched and are prone to having blood on them. ✓ Apply disinfectant to all surfaces and ensure that surfaces are visibly wet. ✓ Allow surfaces to air dry. ✓ All training rooms are terminally cleaned post isolation patient training or a clinic. 	<p>If blood is not present on any surface, the surface can be wiped off using the approved NKC surface disinfection solution. It is always used per manufacturer’s instructions.</p> <p>This includes...</p> <ul style="list-style-type: none"> • Wiping down the top, sides and front of the machines • Wiping down the outside of the normal saline jug and or concentrate jug if used. • Cleaning the bed or chair, overbed table, call light, TV controls etc. <p><u>IF BLOOD IS PRESENT,</u> 2 levels of cleaning and disinfection are required.</p> <p>Disinfection includes:</p> <ul style="list-style-type: none"> • Clean up the blood with a blue pad, then go over the area using a wipe containing the NKC approved surface disinfection solution. • Repeat the process with a second wipe.
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<p>Equipment and Supplies</p>	<p>Items taken into the dialysis station (or a home training room) should be disposed of, dedicated to that patient, or disinfected prior to reuse.</p> <ol style="list-style-type: none"> 1. Supplies cannot be kept in lab coat pockets. 2. Common supply carts or stands cannot be moved from station to station or room to room. 3 a. Patient training supplies are kept on pallets in the training rooms. b. Training machines are wiped with the approved NKC disinfectant after each use. Drain and waste lines are bleached with 10% solution between patients. <p>All equipment is to be cleaned per NKC policy.</p>	<p>Managing commonly used supplies. Supplies can be...</p> <ol style="list-style-type: none"> 1. Dedicated for individual patients in some instances. For example, O2 tubing that the patient takes home with them and brings back for use. 2. Disinfected before it is taken to a clean area or used with another patient. <ul style="list-style-type: none"> •  Stethoscopes are wiped with the approved NKC surface disinfection solution, per manufacturer's instructions, between patients. (They may also be dedicated to a specific station and cleaned with when the station is cleaned. • Blood pressure cuffs are wiped down with NKC approved surface disinfection solution as above. • If blood is present on clamps and/or scissors in the training rooms, they are soaked in WEC solution, scrubbed and then disinfected. The disinfectant used is an approved NKC surface disinfection solution for that purpose. Otherwise they are put into a 1% bleach solution in beakers as they would do at home. • PD effluent is taken through the hallways on a covered cart and dumped in the dirty utility room. Effluent is not dumped into the training room sinks.
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Hand washing with soap and water should be done for at least ___ seconds.

Part Five

General Patient Activities

Patient Activities

- ✓ Patient lap tops will be provided **after** the patient is on dialysis and picked up **before** the patient comes off. This minimizes the chance of blood contamination. Patients will be asked to do hand hygiene with gel before they use the lap top and after they finish with it.

- ✓ According to the CDC even with glove use, hand hygiene is necessary after glove removal because hands can become contaminated through small defects in gloves and from the outer surface of gloves during glove removal.

- Patients must do hand hygiene entering and leaving the unit if ambulatory.

- Needles left in place so a patient can use the bathroom will be secured and wrapped in a blue pad to minimize the chance of blood being dripped onto clean surfaces.

- Patients holding their own puncture sites must wear gloves, and do hand hygiene with gel after gloves are removed.

All helpers must follow NKC infection practices, including proper hand washing and PPE.

Hand hygiene using a hand gel should be done for ...(circle one)

- a. 20 seconds
- b. One minute
- c. Until the gel dries
- d. 10 seconds

Part Six

Medication Management

Medications



- ✓ Perform hand hygiene before and after medication administration.
- ✓ Lab coats may be left on when moving between patients to pick up individual medications in the preparation area. Gloves are discarded and hand hygiene is done before moving from the dialysis station to the medication prep area.
- ✓ Medications must not be drawn up longer than 4 hours ahead of time. They must be labeled if not immediately given.
- ✓ Venofer and ESA are single dose vials.
- ✓ Xylocaine, Heparin and Insulin are Multi-dose vials.

To maintain sterility when drawing medications:

- A new needle is always used to enter vials.
- Single use vials are only entered once and used for one patient.
- Residual medication in vials is not pooled.
- If drawing up medication from 2 single use vials -the same syringe may be used with new needles for each vial. Any residual medication is discarded.
- If drawing up medications from 2 different multiple use vials, a different syringe and needle must be used for each vial. The medications cannot be mixed

Once supplies have been taken to a dialysis station they cannot be returned to a clean area or taken to another dialysis station. They must be _____, _____ or _____. (The 3 D's)

Part Seven

Infection Control in the Home Hemodialysis and Peritoneal Dialysis Units

So far we have reviewed the principles and practices related to hand hygiene, the use of personal protective equipment, and disinfection of the environment. Those principles and practices apply in all patient treatment areas including the home training units, and can be applied to home environments as well. Let's look at the training units first. We need to identify what and when the various areas in the units are clean and when they are dirty.



Can you identify the clean and dirty areas in your unit?

Locations	Clean	Dirty
Hallways, Offices, Conference Rooms	●	
Empty Training Rooms (Previously cleaned)	●	
Training Rooms with Patient's in Them		●
Training Rooms with Patient Machine and/or Materials Present (No patients present)		●
Supply and Medication Room	●	

Locations	Clean	Dirty
Side Tables Used for Staff Training Manual and Computer During Patient Training	●	
Hand Washing Sinks	●	
Hand Washing Sink Faucets and Knobs		●
Dirty Utility Rooms (No Patients in the Unit)		●
Training Rooms Being Used for Clinic Visits		●
Side Tables Being Used for Clinic Visits	●	
Patient Waiting Area	●	
Front Desk Area	●	

Medications can be drawn up no more than ____ hours ahead of time.



Training Room Reminders



Hand Hygiene:

- Complete hand hygiene before entering and after leaving the training room.
- Complete hand hygiene before and after glove use.
- Complete hand hygiene whenever you have been touching a patient’s machine or dedicated patient supplies in the room.
- Complete hand hygiene before and after using the computer stations in the hallways.

- Use a paper towel to turn off sink faucets. Remember the sink is clean but the faucets are not.

PPE:

- Staff and patient helpers should wear PPE (gowns, gloves, face shields) when coupling and uncoupling.
- PPE must be worn when transporting and draining effluent and used NS in the utility room.
- Staff and helpers must wear gloves to answer patient machine alarms.
- Lab coats are hung dirty side facing inward.
- Isolation gowns are hung in the isolation rooms with the dirty side facing outward.
- Patients must wear gloves to hold their own punctures and complete hand hygiene when finished.
- Always wear gloves in the dirty utility room.
- Always wear gloves when collecting AMMI water samples.

Environment and Supplies:

- There is no clipboard for patients during clinics. Keep your clipboard clean and use it for yourself.
- During clinics the chair, BP cuff, call light, and side table must be cleaned.
- If training in an isolation room, use the dedicated supplies in that room. Face shields and goggles are washed at the end of each shift with soap in water and left in the room.
- Use the hepatitis B centrifuge (has a cover) for hepatitis B clinics or training. Disinfect it when done and store it in the dirty utility. Label as "Isolation".
- Lab work is always double bagged out of isolation. Use the NKC lab bags.
- Patient belongings should be double bagged out and remain in the bags until the patient has left the unit.
- The door knobs in the training rooms should be wiped down every day the room is used.
- All supplies in the training rooms are considered dirty once training begins. They go home with the patient, or are discarded or disinfected.
- When disinfecting a training room apply disinfectant to all surfaces of the dialysis station and ensure that they are visibly wet. Allow them to air dry.
- Remember blood spills require 2 levels of cleaning.
- Needles left in place while a patient uses the bathroom must be securely taped and wrapped in a blue pad to minimize blood dripping onto clean surfaces.
- Don't forget to disinfect your stethoscope between patients!

- Clamps and scissors soak in 10% bleach solution as they would at home.
- Hand hygiene is done and gloves are put on before using a thermometer. Wipe the thermometer with alcohol after use. Patients are not to touch the thermometers.
- PD effluent is transported on a covered cart and disposed of in the dirty utility room. It is never dumped down training room sink drains.

Part Seven

On the Road: Infection Control During Home Visits



The 5 Moments for Hand Hygiene can be applied in any patient care environment, including home environments.

List "The 5 Moments for Hand Hygiene":

1. _____
2. _____
3. _____
4. _____
5. _____

Initial home visits are always done by HH and PD staff and Technical Services staff. Additional visits are scheduled as the need arises. Home visits may be done for any of the following reasons or combination of reasons.

- Assessment of the home environment
- Checking on supply inventory
- Reviewing procedures and techniques.
- Assessing medical equipment
- Reviewing patient paperwork
- Recent infection
- Post hospitalization

A summary of the visit is always added to the patient's chart and recommendations are shared with fellow team members as appropriate.

Home Visit Supplies to Take with You

Lab Coat, Gloves, Face Protection

Pens and Paperwork

Disinfectant Wipes

Garbage bags

Stethoscope

Blue Pads

Hand Gel



Home Visit Tips



- Complete hand hygiene when you arrive and last thing before you leave.
- Anything removed from a patient's home must be disinfected or disposed of.
- Wear PPE if observing coupling or uncoupling.
- Wear gloves when touching patient supplies or the machine.
- Pets should not be in the room during coupling or uncoupling and are not allowed during overnight treatments.
- If a family member is ill and you have contact with them both the ill person and yourself should wear a mask.

Visiting Home Patients with Communicable Diseases Hepatitis, C-diff, MRSA, HIV

To reduce the risk of disease transmission...

- Complete hand hygiene using gel before and after the visit.
- Put on disposable PPE including shoe covers as soon as you enter the house.
- Establish a work area and clean it using NKC approved surface disinfectant wipes. Cover the area with a blue pad and set out your supplies.
- Use the patient's ancillary supplies with the exception of your stethoscope and face protection. Disinfect your stethoscope and face protection before it is used. Disposable face protection may be used if available.
- Remember to remove gloves and complete hand hygiene before and after accessing the supplies you brought with you, or sitting down to complete paperwork in your clean area.
- When you are ready to leave...
 - Disinfect your stethoscope and face protection in a clean area using an NKC disinfectant wipe.
 - Discard the disposable gown, gloves and shoe covers in the patient's trash.
 - Wash your hands with soap and water in a clean sink before you leave, dry with a paper towel. Don't forget to complete hand hygiene again using your gel once back in your car.

