

Infection Control Review in the Core Survey

**Partnering to Protect Dialysis
Patients from Healthcare Associated
Infections**

Objectives : to discuss

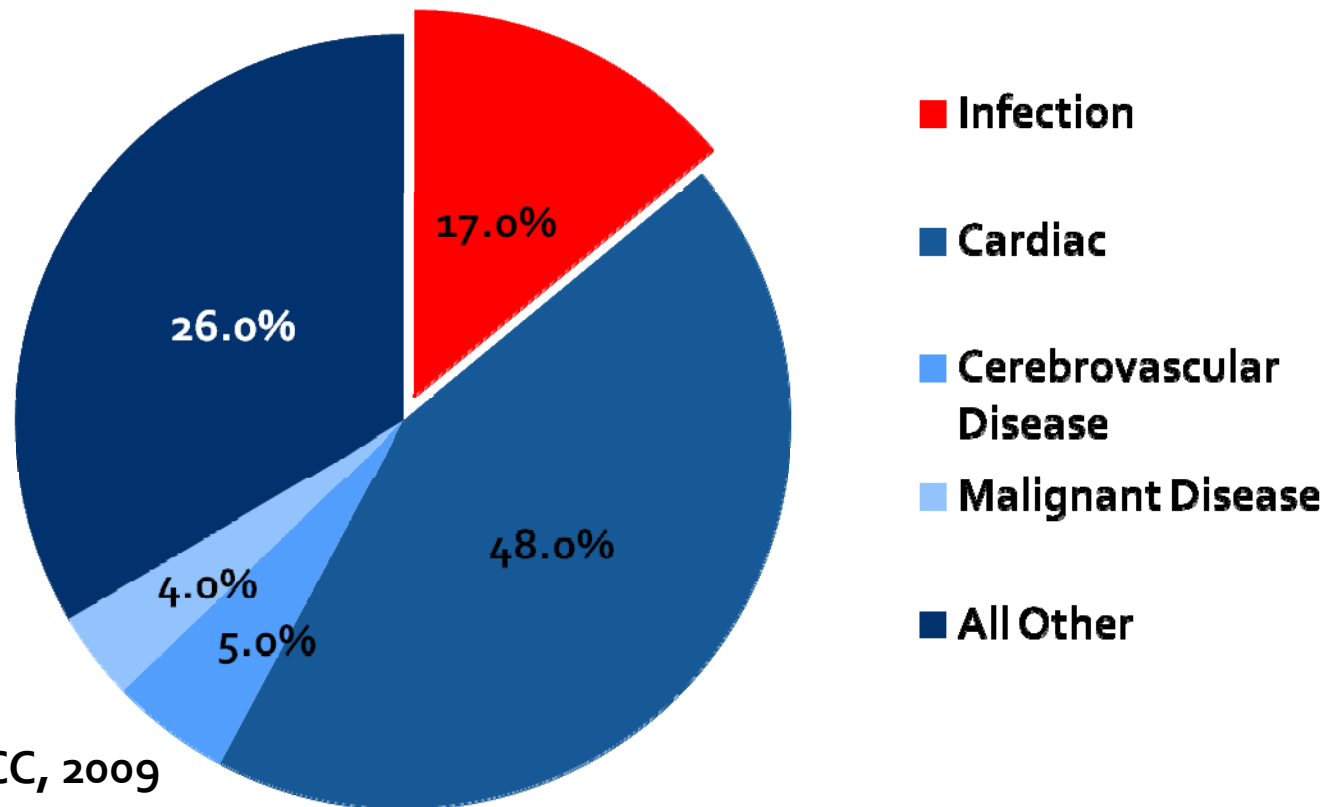


- ✿ Elements of dialysis care that may promote the spread of infections
- ✿ Applying lessons from the patient safety movement to infection control-the use of checklists
- ✿ How the Core Survey puts direct care staff and surveyors “on the same page” to protect dialysis patients from infections



**Healthcare Associated Infections in
Dialysis- **We're Losing a Lot of
Patients!****

Infections: A Major Patient Safety Problem in Dialysis – 2nd Leading Cause Of Death



UM-KECC, 2009

Approximately **15,000** dialysis patients die annually due to infections

Many Dialysis Patient Infections Are Healthcare Associated Infections (HAI)

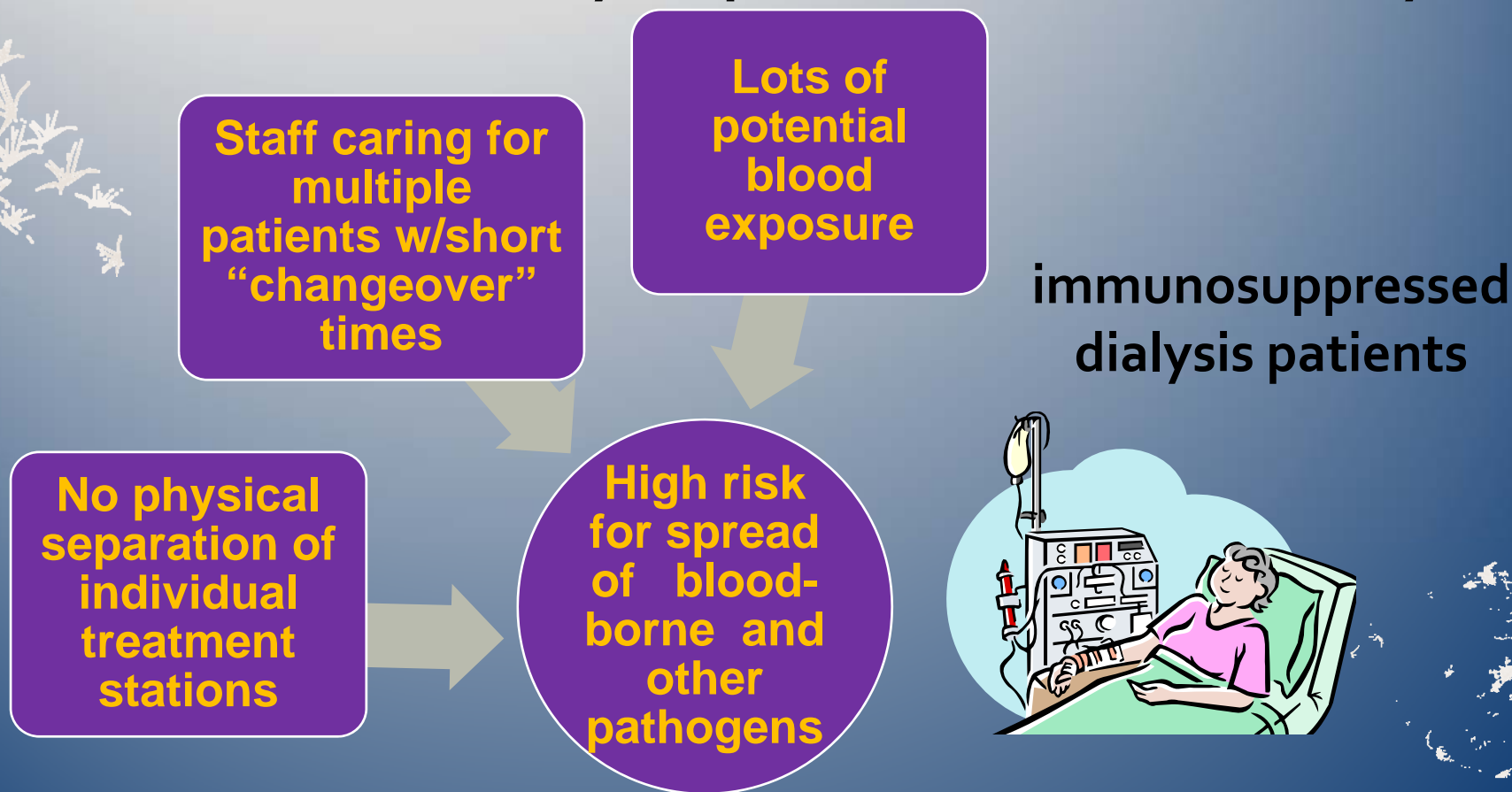
- Acquired as a result of care provided or from an environmental source at the dialysis facility
- Starts with the presence of an infectious agent
- Spread to patients

Are largely preventable!



Why Is Infection Prevention Such a Challenge in Dialysis?

The in-center hemodialysis patient treatment reality:



Recent Studies Illustrate How the Dialysis Facility Can Become a “Box of Bugs”

Organisms remain viable on surfaces for prolonged periods

- Hepatitis B >1 week
- Influenza 1-2 days
- MRSA 7 days to 7 months
- VRE 5 days to 4 months
- C. difficile spore 5 months

Kramer A, Schwebke I, Kampf G. BMC Infect Dis 6:130, 2006

Healthcare workers touch as many as 7 surfaces after touching a contaminated one!

McLaughlin AC, Walsh F. Am J Infect Control 39(6):456-463, 2011

How Are Infections Spread in Dialysis?

Five main sources of pathogen transmission:

1. On the **hands of staff** going between patients & between common areas and patients
2. From **ineffectively disinfected equipment & environmental surfaces**
3. From **contaminated supplies & medications**
4. From **inadequate vascular access care**
5. From **virulent pathogens** (e.g. hepatitis B)

How Can Direct Care Staff Protect Patients from Infections???



Photos courtesy of Diana Shelkov



Dialysis Patient Infections Can Be Prevented by:

Following good infection prevention and control practices

The Centers for Disease Control and Prevention (CDC) has guidelines for these practices in dialysis facilities

The CDC Guidelines

- ✱ Address general practices (wash hands, clean & disinfect equipment, etc.)
- ✱ Do not include details for **application** of the guidelines (what parts of the equipment need to be disinfected, etc.)

Remember the lesson from the Patient Safety Movement...

Staff need **clear** directions in what is expected of them in their duties...

The Use of Procedural Checklists Has Improved Patient Safety in Hospitals

- Checklists are used by “high reliability” organizations such as aviation and nuclear energy to improve safety
- Hospitals now use them routinely and have shown significant reduction in HAI and HAC with them
- Gives staff **clear directions on what is expected**

Checklists for dialysis procedures may reduce the chances for spreading infections by giving clear direction on how to apply the CDC guidelines to daily practice

Development and Evolution of Dialysis Infection Control Checklists

- Began with a collaborative group: CMS, CDC, ESRD Networks, researchers, **dialysis staff (NOTICE)**
- Identified dialysis activities with highest infection risk (vascular access care, disinfection of equipment, etc.)
- Developed step-by-step procedures-hand hygiene and glove changes are included as steps
- Tested in 34 dialysis facilities in 4 Networks
- **Audit versions of these checklists are used by surveyors to observe ICHD patient care in the Core Survey**

Review of Infection Control in the Core Survey

Covers many survey activities-one of the main focuses of the Core Survey

- Environmental “flash” tour

- ✧ Looking for observable concerns (blood splatters, patient stations too close together, etc.)

- Observations of HD Care & Infection Control

- ✧ Surveyors will observe you caring for patients, using the audit checklists

- ✧ Surveyors will review isolation practices-may ask you about “usual” practices for staff assignments in isolation

- QAPI has a section of review dedicated to infection control

- ✧ Includes staff education and visual auditing

Infection Control Checklists for Dialysis

- **Initiation of Dialysis with CVC**
- *CVC Exit Site Care*
- **Discontinuation of Dialysis and Post Care of CVC**
- **Initiation of Dialysis with AVF/G**
- **Discontinuation of Dialysis and Post Care of AVF/G**
- **Parenteral Medication Preparation/Administration**
- **Cleaning & Disinfection of the Dialysis Station**
- **Supply Management & Contamination Prevention**

Checklists for Central Venous Catheter Access and Care

- ✱ **Masks** on staff and patient
- ✱ **Clean** field under CVC ports/line connections
- ✱ **Hubs (ports)** of CVC disinfected before **and** after treatment
 - ✧ External OR open port or both
- ✱ **Exit site care/dressing change:**
 - ✧ **No** common supply tray/cart taken to the station
 - ✧ Glove change/HH b/t old dressing and cleaning
 - ✧ Cleanse exit site; sterile dressing applied
- ✱ **Glove change/HH** b/t discontinuation of tx. and post tx. CVC care

Initiation of Dialysis with Central Venous Catheter

#1

Notes: Patient should wear a mask whenever CVC is accessed;
Staff PPE must be gown, mask and eye protection, gloves

- Bring supplies needed for that patient to station (no common cart/tray)
- Hand hygiene, don clean gloves
- Place clean field under CVC ports
- Close CVC clamps: Disinfect exterior or interior of CVC hubs with appropriate antiseptic
(exterior disinfection=wipe hubs before removing; interior disinfection=remove caps, wipe threads and top of open hub to remove residual blood/residue; closed connector devices=wipe outside connecting surfaces)
- Connect sterile syringes aseptically to each port to remove indwelling solutions and/or flush with sterile saline; initiate treatment
- Remove gloves; hand hygiene

Note: If troubleshooting or manipulation of catheter or dialysis lines occurs during the dialysis treatment, then PPE, hand hygiene, gloves and external disinfection of the CVC hub procedure should be performed as above with each manipulation.

Discontinuation of Dialysis with Central Venous Catheter

#3

Notes: Patient should wear a mask whenever CVC is accessed;

Staff PPE must be gown, mask, eye protection, and gloves

- Bring supplies needed for that patient to station (no common cart/tray)
- Hand hygiene, don clean gloves
- Place clean field under CVC ports
- Reinfuse extracorporeal circuit
- Remove gloves; hand hygiene; don clean gloves
- Close CVC clamps: Disinfect connections with appropriate antiseptic (exterior disinfection=wipe exterior connection before disconnecting blood lines; open hub disinfection=wipe threads and top of open hub after disconnecting blood lines, removing any residue/blood; closed connector devices=wipe exterior of connections before disconnecting blood lines)
- Disconnect blood lines aseptically
- Apply sterile port caps aseptically after post-treatment protocol (applicable to closed connector devices when changed)
- Discard unused supplies or dedicate to that patient-no supplies returned to common supplies
- Remove gloves; hand hygiene

CVC Exit Site Care

Notes: Patient should wear a mask whenever CVC is accessed;

Staff PPE must be gown, mask and gloves

- No common supply cart/tray brought to station (supplies for only that patient brought to station)
- Hand hygiene, don clean gloves
- Remove old dressing & discard
- Remove gloves; hand hygiene; done clean gloves
- Cleanse area around CVC exit site with antiseptic; allow to dry before applying dressing
- Apply sterile dressing to CVC exit site
may apply antimicrobial ointment if not contraindicated or chlorhexidine-impregnated dressing if no sensitivity
- Remove gloves; hand hygiene

Testing in 34 Facilities Showed:

Initiation, Discontinuation with a CVC and CVC Exit Site Care

- ✱ **45%** disinfected the hubs prior to initiation, and **29%** did it on discontinuation of dialysis
- ✱ **53%** changed gloves and hand hygiene after reinfusion and before post treatment CVC care
- ✱ **35%** changed gloves and hand hygiene after removing old CVC dressing and before cleansing the exit site

Checklists for AV Fistula/Graft Access and Care

Pre dialysis access care and initiation of dialysis:

- **Skin** over access **washed/cleaned** (by patient or staff)
- Locate/palpate access **before skin antiseptis**
 - **No** touching sites after this without repeat antiseptis
- Skin antiseptis per **manufacturer DFU**

Post dialysis care:

- **Glove change/HH** b/t discontinuation of tx. and needle removal
- Needles sites held with **gloves** or disinfected clamps, **soiled dressings replaced**
- Patients/visitors holding sites do HH prior to touching other items/surfaces (e.g., scales, doorknobs) and leaving

Initiation of Dialysis with AV Fistula or Graft

Notes: Staff PPE must be gown, face shield or mask/eye protection, and gloves

- Bring supplies needed for that patient to station (no common cart/tray)
- Patient or staff wash skin over access with soap and water or antibacterial scrub
Note: Patients should be instructed to wash their access sites upon entering facility and staff verbally confirm with patient that it was done; for dependent patients, staff must do this before proceeding with skin antisepsis
- Evaluate access; locate/palpate cannulation sites
- Hand hygiene (remove gloves, if worn); don clean gloves
- Apply antiseptic to skin over cannulation sites and allowed to dry; sites not touched again after skin antisepsis without repeating skin antisepsis
- Insert cannulation needles; tape in place; initiate treatment
- Remove gloves; hand hygiene

Note: This checklist is not intended for use with buttonhole cannulation technique

Discontinuation of Dialysis and Post Dialysis Access Care of AV Fistula or Graft

Notes: Staff PPE must be gown, face shield or mask/eye protection, and gloves

- No common supply cart/tray brought to station (supplies for only that patient brought to station)
- Hand hygiene, don clean gloves
- Reinfuse extracorporeal circuit, disconnect bloodlines aseptically
- Remove gloves; hand hygiene; don clean gloves
- Remove needles aseptically; discard needles in Sharps container at point of use
Needle sites held with clean bandage or gauze using clean, gloved hands (patient, staff, other) or disinfected clamps
- Remove gloves; hand hygiene
- When hemostasis is achieved: Hand hygiene; don clean gloves; replace blood-soiled bandage or gauze to needle sites
Ensure the bandage or gauze on each needle site is clean and dry before discharge
- Discard unused supplies or dedicate to that patient-no supplies returned to common supplies
- Remove gloves; hand hygiene
Patient or visitor who held sites remove gloves, hand hygiene

Testing in 34 Facilities Showed:

Initiation and Discontinuation of Dialysis with AV Fistula or Graft

✱ **53%** washed skin over the access prior to skin antiseptics

✱ **49%** touched the skin over selected cannulation site after skin antiseptics

✱ **49%** changed gloves, HH after reinfusion and needle removal

Checklist for Cleaning & Disinfection of the Dialysis Station

- ✱ **No supplies for next patient** brought before disinfection
 - ✧ Cannot store next patient's supplies within "splash" zone
- ✱ **All equipment & surfaces** wiped wet with EPA-registered hospital disinfectant-prepared accurately
- ✱ **Machine:** bloodlines, dialyzer removed;
 - ✧ **Surfaces** (top, front, sides), dialysate hoses/hansens
 - ✧ **Prime waste receptacle** **all surfaces**
 - ✧ Exterior of portable dialysate jugs

Checklist for Cleaning & Disinfection of the Dialysis Station (cont.)

- ✿ **Chair:** vacated, fully reclined
 - ✿ **Fresh** disinfectant wipe/cloth used
 - ✿ All front-facing surfaces wiped, including surfaces along sides of seat cushion & side tables
- ✿ **Non-disposable items wiped:** BP cuff, TV controls, etc.
- ✿ **Disposable items discarded** or dedicated to that patient

*Note: It is **not required** that the patient has vacated the dialysis station before disinfection and preparation of the machine can be conducted.*

*If the patient remains in the chair during disinfection, **strictly adhere to separation** b/t the patient and the disinfected/prepared machine.*

Cleaning and Disinfection of the Dialysis Station

#6

Notes: All items listed below must be disinfected using an EPA-registered hospital disinfectant prepared and used per manufacturer's instructions for use; Staff PPE must be gown, face shield or mask/eye protection, and gloves

- Remove all bloodlines & disposable equipment & discard in biohazardous waste; dialyzer for reprocessing cap all ports; transport dialyzer and bloodlines in a manner to prevent contamination of other surfaces
- Empty prime waste receptacle, if present on machine
- Remove gloves; hand hygiene; don clean gloves
- Use disinfectant cloth/wipe to visibly wet all machine top, front and side surfaces, dialysate hoses, Hansen connectors, and outside surfaces of concentrate containers
- Wipe wet all internal and external surfaces of prime waste container & allow to dry (prime waste container must be disinfected before used to prepare for another patient's treatment)
- When chair is vacated, remove and discard disposable supplies or dedicate to that patient-not returned to common supplies
- Recline chair fully, use a fresh disinfectant cloth/wipe to visibly wet all external front-facing and side chair surfaces, including along sides of seat cushion and side tables
- Apply disinfectant to all non-disposable items: BP cuff and tubing, TV controls, call button, data entry station & counters around station
- If clamps were used, cleaned of visible blood and disinfected
- Discard cloths/wipes
- Remove gloves; hand hygiene

Testing in 34 Facilities Showed:

Cleaning and Disinfection of the Dialysis Station

- ✱ **44%** “adequately” disinfected the machine surfaces (including dialysate hoses)
- ✱ **31%** “adequately” disinfected the prime receptacle
- ✱ **32%** disinfected non-disposable items

Checklist for Supply Management & Contamination Prevention

- **More general** with some **overlapping** with the other checklists
- Not pertaining to a single dialysis activity
- Supplies **stored** away from potential contamination
 - ✧ Sufficient distance from dialysis stations
 - ✧ **No** “next” patient supplies brought to station until **that** equipment/surface has been disinfected (e.g. machine)
- **Non-disposable equipment** brought to dialysis station **disinfected** (e.g. pH/cond meter)

Dialysis Supply Management & Contamination Prevention

- Supplies are stored and kept in designated clean areas, sufficient distance from dialysis stations to prevent contamination from potentially infectious materials/substances
- Supplies for next patient are not brought to the station before the prior patient's treatment is discontinued and applicable equipment (machine, chair) cleaned/disinfected (supplies for the next patient are not placed on or near the machine until it has been stripped, cleaned and surface disinfected)
- Carts or trays containing supplies are not taken to or moved between dialysis stations
- Staff do not keep patient care supplies in pockets or on their person
- Non-disposable equipment (e.g. thermometer, pH/conductivity meter, access flow device, O₂ saturation meter, blood glucose meter, stethoscope diaphragm/bell end) brought to the dialysis station is cleaned and disinfected before being returned to a common area or taken to another dialysis station.
Disinfection=all surfaces wiped with EPA-registered hospital disinfectant and allowed to dry
- Medication vials are not taken to the dialysis station
- Disposable supplies taken to the dialysis station and not used for the patient are discarded or dedicated to the individual patient & not returned to common supplies

Testing in 34 Facilities Showed:

Dialysis Supply Management and Contamination Prevention

- ★ **51%** kept supplies in designated clean areas sufficient distance from dialysis stations to prevent possible contamination
- ★ **19%** disinfected non-disposable items taken to the dialysis station (e.g. pH/cond meter, digital thermometer)

Checklist for Parenteral Medication Preparation and Administration

- **Meds prepared in clean area, away from stations**
 - ✧ **Exception: saline drawn from patient's own bag**
 - ✧ **Aseptic technique=clean hands, disinfect vial stoppers**
- **Single dose vials for one patient (applies to saline bags)**
- **Multiple dose vials entered with only empty sterile syringe - no "pooling"**
- **Administer meds to one patient at a time**
 - ✧ **No med carts, no other patients' meds taken to station**
 - ✧ **PPE, disinfect injection port before injection**

Parenteral Medication Preparation and Administration

#8

Notes: Medications must be prepared in a clean area on a clean surface away from dialysis stations. The exception to this is drawing saline syringes from the patient's saline bag at the station following aseptic technique after wiping port with disinfectant prior to aspirating.

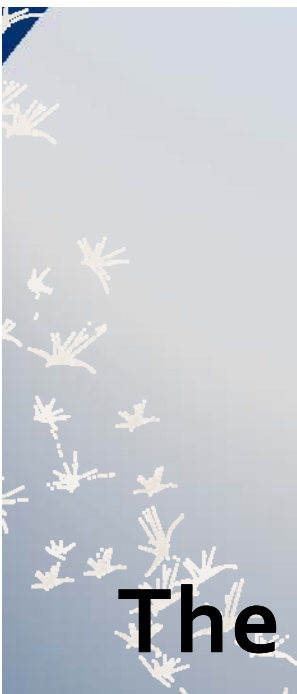
- Hand hygiene
- Single dose vials used for one patient only and discarded
- Multiple dose vials entered with **ONLY** a new, empty, sterile syringe and needle (label with date opened and discard within 28 days or by manufacturer instructions)
- Wipe stopper with alcohol or other antiseptic
- Withdraw medication into sterile syringe; label syringe if medication not immediately administered
Note: May prepare meds for multiple patients at one time, but administration must be to one patient at a time, leaving the remainder of drawn meds in the clean preparation area
- Take only individual patient's medications to their dialysis station
- Hand hygiene; don clean gloves (other PPE as indicated by potential exposure)
- Wipe injection port with disinfectant; inject medication
- Discard syringe into Sharps container (exception if using needless system with no attached needle, disposal in Sharps not necessary)
- Remove gloves; hand hygiene

Testing in 34 Facilities Showed:

IV Medication Preparation and Administration

- ❖ **68%** re-punctured multidose vials with only new sterile syringe/needle and discarded opened m/d vials w/in 28 days

- ❖ **29%** took more than one patient's meds to the dialysis station at a time



The Infection Control Checklists Don't Address Everything on How to Protect Patients from HAI...

A decorative graphic on the left side of the slide, consisting of a cluster of white hand icons of various sizes and orientations, arranged in a roughly triangular shape pointing downwards.

Hand Hygiene and Glove Use in Dialysis

Hand Hygiene and The World Health Organization (WHO) Campaign “My 5 moments for hand hygiene”

- Before touching a patient
- Before clean/aseptic procedures
- After body fluid exposure/risk
- After touching a patient
- After touching a patient’s surroundings



Adequate hand hygiene is:

- Apply alcohol-based hand rub to cover all hand surfaces, rub to dry
- OR
- Wet hands, apply soap to cover all surfaces, rinse-process to take 40-60 seconds

WHO Hand Hygiene for Dialysis

1 BEFORE TOUCHING A PATIENT	WHEN? Clean your hands before touching a patient. WHY? To protect the patient against harmful germs carried on your hands.
2 BEFORE CLEAN/ ASEPTIC PROCEDURE	WHEN? Clean your hands immediately before performing a clean/aseptic procedure. WHY? To protect the patient against harmful germs, including the patient's own, from entering his/her body.
3 AFTER BODY FLUID EXPOSURE RISK	WHEN? Clean your hands immediately after a procedure involving exposure risk to body fluids (and after glove removal). WHY? To protect yourself and the environment from harmful patient germs.
4 AFTER TOUCHING A PATIENT	WHEN? Clean your hands after touching the patient at the end of the encounter or when the encounter is interrupted. WHY? To protect yourself and the environment from harmful patient germs.
5 AFTER TOUCHING PATIENT SURROUNDINGS	WHEN? Clean your hands after touching any object or furniture in the patient surroundings when a specific zone is temporarily and exclusively dedicated to a patient - even if the patient has not been touched. WHY? To protect yourself and the environment from harmful patient germs.

CDC says that **GLOVES** must be:

- **Worn when there is potential for exposure**
 - e.g. inserting needles, accessing CVC, touching equipment at dialysis station ("**splash zone**")
- **Changed b/t patients and dialysis stations**
- **Changed b/t dirty and clean with the same patient**
 - e.g. removing old CVC dressing, applying new one; discontinuation of dialysis and vascular access care



Isolation Practices

Isolation Practices

Protecting the HBV susceptible patients when there is at least one HBV+ patient on census

• Isolation room/area **used only by HBV+ patient(s)**

• "Area" separated from other stations=width of 1 station

• **Supplies/equipment** dedicated to isolation

• **Staff** assigned to isolation **do not** deliver care to susceptible patients while the HBV+ patient is in isolation room/area - review assignments & interview

• Exceptions are in emergencies & 1 RN on duty for CVC access and/or meds

• **All PPE** removed and **HH** when leaving isolation

**YOU are the key to Protecting Your
Patients from HAI!**

Celebrate what YOU do!

