Dialysis of Patients in Inpatient Care

This interim guidance is provided to clarify COVID-19 infection prevention and control (IPC) recommendations that are specific to ministries providing inpatient care of patients needing dialysis. This interim guidance is based on the currently available information about COVID-19. These recommendations should be used with the CDC’s Interim Infection Prevention and Control Recommendations for Patients with Confirmed Coronavirus Disease 2019 (COVID-19) or Persons Under Investigation for COVID-19 in Healthcare Settings.

COVID-19 patients and Persons Under Investigation (PUI) who require dialysis may fall into one of two categories in the inpatient setting:

1. Chronic dialysis patients who have become ill with COVID-19 or are PUI
2. Patients admitted with COVID-19 or PUI who require dialysis as the result of severe illness with COVID-19. Older adults and people of any age who have serious underlying medical conditions may be at higher risk for severe illness from COVID-19. In addition, people of any age with severe obesity (body mass index [(BMI)] ≥40) or certain underlying medical conditions, particularly if not well controlled, such as those with diabetes, renal failure, or liver disease may be at increased risk for complications from the virus. It is believed that the crisis of COVID-19 may cause a maladaptive systemic inflammatory immune response, (cytokine storm), contributing to hypoperfusion-related injury of the renal tubules and organ dysfunction.

Types of dialysis may include Continuous Renal Replacement Therapy (CRRT)(ICU); Hemodialysis, or Peritoneal Dialysis (for the patient who may be managing their dialysis at home), Sustained Low Efficiency dialysis (SLED) or Sustained Low Efficiency Daily Dialysis (SLEDD).

SCREENING

- Facilities should screen dialysis patients in advance of the first inpatient treatment for:
  - Signs or symptoms of a respiratory infection, such as a fever ≥ 100.4 F.; cough; or difficulty breathing.
  - Contact with someone with or under investigation for COVID-19 or ill with respiratory illness;
  - International travel within the last 14 days to countries with widespread or ongoing community spread;
  - Residence in a community where community-based spread of COVID-19 is occurring.

CARE OF THE PATIENT
• Before entering the patient room:
  o Review the patient orders
  o Gather all dialysis supplies and equipment
  o Perform hand hygiene
  o Don appropriate PPE (gown, gloves, procedural mask, face shield)
• Facilities should consider prioritizing respirators for fit-tested dialysis staff who spend several hours in a patient’s room during a dialysis treatment with the door closed.
• Inpatients who require dialysis should be dialyzed in their rooms with the door closed.
• If possible, dialysis staff should limit time in the room with the patient. The facility may consider having dialysis staff observe and monitor the patient through a window, glass door, or camera while keeping the door closed during the dialysis session. If dialysis staff are working from outside the room, the patient must be closely monitored at all times and care should be taken to prevent complications such as needle dislodgements and exsanguination. Access and lines must be visible at all times. If clinical colleagues remain in the room, when possible a 6-foot distance should be maintained.
• Patients receiving dialysis in their own room or an isolation room do not need to wear a mask if dialysis staff are working from outside the room. If dialysis staff are remaining in the room with the patient, the patient should wear a facemask if tolerated.

PERITONEAL DIALYSIS PATIENTS

• Acute PD may be an alternative to hemodialysis, not only reducing the number of central venous catheters being placed and therefore the number of central line associated blood stream infections but also providing patients with a viable long-term solution for their dialysis needs if they continue to require it in the outpatient setting at the time of discharge.²
• Severe or critically ill peritoneal dialysis patients requiring life support due to multiple organ dysfunction syndrome can be temporarily transferred to automated peritoneal dialysis or bedside continuous renal replacement therapy (CRRT). As in patients on hemodialysis, it is advisable to keep patients ‘dry’, so increased ultrafiltration may be needed if remaining on PD.

HEALTH CARE PERSONNEL (HCP) FOR ALL DIALYSIS PROGRAMS

• Facilities should implement sick leave policies that are non-punitive, flexible and consistent with public health policies that allow ill healthcare personnel (HCP) to stay home. HCP should be reminded to not report to work when they are ill (refer to HR COVID19 policies for more details).
• In general, dialysis staff caring for patients with undiagnosed respiratory illness should treat the patient as a patient under investigation (PUI) and follow Standard, Contact, and Droplet Precautions with eye protection. Personal Protective Equipment (PPE) should include:
  o Gloves
  o Facemask
  o N95 respirator should be available and used in cases where aerosol generating procedures (AGPs) are being performed or for patients with a tracheostomy who are coughing. Provide facial tissues to cover their cough, including the tracheostomy site
  o Eye protection (e.g., goggles, a disposable face shield that covers the front and sides of the face). Personal glasses and contact lenses are NOT considered adequate eye protection.
  o Isolation gown
  o The isolation gown should be worn over or instead of the cover gown (i.e., laboratory coat, gown, or apron with incorporate sleeves) that is normally worn by hemodialysis personnel. If there are shortages of gowns, they should be prioritized for initiating and terminating dialysis treatment, manipulating access needles or catheters, and cleaning and disinfection of patient care equipment (limiting if possible to one gown per dialysis nurse/tech for each patient).
  o When gowns are removed, place the gown in a dedicated container for waste or linen. Disposable gowns should be discarded after use. Cloth gowns should be laundered after each use.
CLEANING

Any surface, supplies, or equipment (e.g., dialysis machine) located within 6 feet of symptomatic patients should be disinfected or discarded.

- Routine cleaning and disinfection are appropriate for COVID-19 in patient rooms.
- Ensure that disposable items taken into the room are disposed of properly.
- Follow the manufacturer’s instructions for all cleaning and disinfection products (e.g., concentration, application method and contact time, etc.)
- Products with EPA-approved emerging viral pathogens claims are recommended for use against COVID-19. Refer to EPA’s List N on the EPA website for EPA-registered disinfectants that have qualified under EPA’s emerging viral pathogens program from use against SARS-CoV-2.

DISCHARGE OF THE DIALYSIS PATIENT

- If the patient will transition to an outpatient hemodialysis facility, the ministry discharge planning team should communicate as early as possible with the receiving outpatient dialysis facility to ensure arrangements have been made for the patient to receive hemodialysis.
- The transportation company (if applicable) should also be notified of the patient’s status. They should be aware of precautions they need to take when transporting patients with suspected or confirmed COVID-19, including the appropriate PPE during transport and how to perform appropriate vehicle disinfection and cleaning.

References:
5. COVID-19 and the Inpatient Dialysis Unit Anna Burgner, T. Alp Ikizler and Jamie P. Dwyer
6. CJASN April 2020, CJN.03750320; DOI: https://doi.org/10.2215/CJN.03750320
7. https://cjasn.asnjournals.org/content/early/2020/04/13/CJN.03750320