

Infection Control in Hemodialysis: Training Curriculum

The Infection Control in Hemodialysis: Training Curriculum was developed by IPRO, while under contract with the Connecticut Department of Public Health (CT DPH), Contract Log # 2016-0083/EPI-EIP (HAIP), funded by the Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the author(s) and do not necessarily represent the official views of the CDC or the Department of Health and Human Services (DHHS). The curriculum is based on CDC resources to provide dialysis facility training staff with a comprehensive step-by-step guide that can be used to mitigate gaps in infection control and reduce infection rates.

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Infection Control in Hemodialysis

Training Curriculum: Facility Trainer Guide

Course Introduction

In a report called *“Making healthcare safer, reducing bloodstream infections”* (<http://www.cdc.gov/vitalsigns/HAI/>), the CDC reports that 37,000 infections strike dialysis facilities every year. There are more than 400,000 dialysis patients in the US. According to United States Renal Data Systems 2010 report (*U.S. Renal Data System, USRDS 2010 Annual Data Report: emerging issues: hospital admissions for infection*), infections, especially vascular access infections, are the leading cause of death in dialysis patients. Infections are also the leading cause of loss of vascular access. The potential for antibiotic resistant infections from increased use of antibiotics in dialysis facilities also creates a public health concern.

Dialysis patients are exposed to multiple healthcare environments on a frequent basis. Most patients undergo dialysis at least three times a week. The process of hemodialysis requires frequent access to the bloodstream through catheters or insertion of needles into arteriovenous fistula (AVF) or arteriovenous graft (AVG) sites. Additionally, dialysis patients have a weakened immune system, which increases their susceptibility to infection. Dialysis patients are at an even higher risk for infection than the rest of the community due to compromised immune systems and frequent exposure to the healthcare environment. In addition to these factors, dialysis patients receive treatment in close proximity to one another, further increasing the potential for exposure to infection. The cost associated with healthcare associated infections (HAIs) is staggering. Published reports have estimated that these infections are responsible for more than \$28 billion in yearly healthcare expenditures. The physical and emotional cost of these infections to patients and their caregivers are immeasurable.

The CDC’s National Healthcare Safety Network (NHSN) is a national health surveillance system that provides dialysis facilities a consistent and uniform way to report accurate data regarding dialysis infection events. These data are available to the Network, as well as the dialysis facilities. The CDC has created observation tools and checklists intended to promote CDC-recommended practices for infection prevention in hemodialysis facilities. According to American Hospital Association (AHA) News, September 20, 2010 (*A tool to help hospitals improve their hand-hygiene compliance*), the Joint Commission Center for Transforming Healthcare released a tool that improved compliance in healthcare settings. This tool was developed to help hospitals improve their hand-hygiene. That study showed that the tool resulted in an improvement in hand-hygiene compliance from 48% to 82%. CDC recommended audits can assist facilities in observing what practices are currently in place and how to improve and standardize those practices.

This curriculum was developed to improve infection control practices and decrease rates of infection in dialysis facilities. Using CDC tools and resources this curriculum offers a comprehensive infection control training tool that can be used to mitigate gaps in infection control procedures, and improve patient care by reducing risk of infection.

Topics covered in this course include:

1. Infection control basics,
2. Facility level policies and procedures that influence infection control,
3. Surveillance and prevention activities,
4. Environmental cleaning, and
5. Infection control activities.

The CDC developed an Infection Control Assessment Tool for Hemodialysis facilities under the Epidemiology and Laboratory Capacity (ELC) Infection Control Assessment and Response (ICAR) Program. The goal of this tool is to help hemodialysis facilities identify gaps in their infection control program and guide quality improvement activities. Outpatient hemodialysis facilities are encouraged to use the ICAR tool at their facility and use this curriculum to mitigate any identified gaps. The modules outlined in this curriculum correlate directly with the ICAR domains (see chart below).

Infection Control in Hemodialysis Training Curriculum: Modules 1-5

Infection Control Assessment and Response (ICAR) Tool	Dialysis Infection Control Curriculum Modules 1-5
Section 1: Facility Demographics Section 2: Infection Control Program and Infrastructure Section 3: Direct Observation of Facility Practices Section 4: Infection Control Guidelines and Other Resources	Module 1: Welcome and Infection Control Basics in the Dialysis Setting
Infection Control Domains for Gap Assessment:	
I. Infection Control Program and Infrastructure II. Infection Control Training, Competency, and Audits III. Healthcare Personnel (HCP) Safety	Module 2: Facility Infrastructure - Program, Policy, and Personnel Session 1: Infection Control at the Facility Level Session 2: Training, Competency, and Auditing Session 3: Personnel Safety
IV. Surveillance and Disease Reporting V. Respiratory Hygiene/Cough Etiquette VI. Personal Protective Equipment (PPE)	Module 3: Surveillance and Prevention – Reporting, Respiratory Hygiene, and PPE Session 1: Surveillance and Disease Reporting Session 2: Respiratory Hygiene Session 3: Personal Protective Equipment
VII. Environmental Cleaning VIII. Dialyzer Reuse and (if applicable) Reprocessing	Module 4: Environment – Cleaning and Reuse Session 1: How Clean Is Your Facility? Session 2: Reuse Safety (when applicable)
IX. Hand Hygiene X. Catheter and other Vascular Access Care XI. Injection Safety	Module 5: Direct Patient Care – Infection Control Activities Session 1: Hand Hygiene for All Session 2: Catheter Care Session 3: Access Care – AVFs and AVGs Session 4: Injection Safety

The Dialysis Infection Control curriculum is based on the CDC tools and resources for dialysis facilities. Certain concepts in the Dialysis Infection Control curriculum are adapted from CDC materials, as well as other infection prevention sources.

Infection Control in Hemodialysis

How to Use the Training Curriculum

Although the content differs from session to session, common themes run throughout this program's core curriculum. In this section we will review how the Facility Trainer should prepare for leading the sessions and how to use the *Trainer Guide*.

Preparation Checklist

The *Preparation Checklist* contains everything the trainer needs to conduct a training session. This comprehensive checklist includes several lists: materials needed for the session as well as tasks to be completed before, during, and after each session.

Materials needed for each session:

- Facility binder – includes curriculum; note pages; and an appendix that includes master copies for all additional materials, such as resources and logs that are needed for the training.
- Participant handouts relevant for the session – available in the back of each session
- **Participant Notebooks** – folders for participants to include self-assessments, self-trackers, and session handouts (provided at 1st session by trainer; participants' responsibility to bring back to following sessions). This notebook will be an evolving tool to be added to and referenced during each session.
- Blackboard, whiteboard, or flip chart and the appropriate writing utensils.

Additional materials and information needed (session dependent):

- Facility policies and procedures for review.
- Models of patient care, environment, and demonstration tools.
- Appropriate implements to be used to demonstrate activities or review procedures.
 - For example: Personal protective equipment (PPE), catheter and access care supplies, cleaning supplies, hand-washing stations, patient care supplies.

Tasks to be done before each session:

- Choose a training time and location; ensure that both time and location are conducive to the education to be delivered.
- Set up the room to best accommodate the information to be shared.
- Make copies of participant hand-outs
- Prepare questions to prompt interaction, discussion, and blameless learning.

Tasks to be done as participants arrive:

- Have participants sign in using the training attendance log.
- Give each participant session-relevant handouts to be inserted into the **Participant Notebook** – provided to each participant at Session 1.
- Distribute any applicable policies and procedures under review as well as references when applicable.

Tasks to be done after each session:

- Write notes about the session on the “Notes and Homework” page at the end of each session. Address areas of concerns, successes, questions, etc.

Facility Trainer Brief

The *Trainer Guide* contains a *Facility Trainer Brief*, which includes learning objectives for the session, an overview of the session, and a brief description of each part of the session.

Learning Objectives

These objectives highlight the purpose and the goals of the session and outline what participants should be able to do or discuss by the end of the session.

Session Overview

The session overview is a brief summary of the topics to be covered during the session and the amount of time allotted for each topic.

Structure

All sessions include several parts. For most sessions (except Session 1, which has mostly introductory material), the sessions are structured as follows:

Part 1: Past Activity Progress and Review (5 minutes):

This section is the same for each session. Participants are asked to complete a brief *Pre-Session Assessment* about the information they are about to discuss and then take their seats in the room. The Facility Trainer leads a brief review of the information covered during the previous sessions. The Facility Trainer also follows up on previous session’s discussions and activities by asking questions such as “Were you able to follow the action plan from the previous session?” “What did you learn by following the plan?” or “Have you seen an improvement in facility practice?”

Parts 2 and 3: Session Content (20–30 minutes)

The Facility Trainer explains the session content, leads discussions on the topic, asks questions to probe the participants’ thoughts, beliefs, and feelings about the topic and how they will put what they learn into practice. Relevant resources will be referenced from the **Participant Notebook**, presented, and reviewed. The time allotted for each topic depends on its complexity and the number of activities to be completed during the session.

Part 4: Wrap Up and To-Do List (10 minutes)

This final part is the same for most sessions. The Facility Trainer summarizes what was covered during the session and describes the key takeaways or activities for participants to complete before the next session. The participants will be given an opportunity to ask questions, express concerns, and/or provide relevant feedback.

Post-session activities are designed to give participants an opportunity to apply the lessons learned during the session, to practice using the tools given to them during the session, and to test their own ideas and solutions to challenging situations related to infection surveillance, control, and prevention between sessions.

Key Messages

Before closing each session, the Facility Trainer summarizes the key messages from the session. These messages should be reinforced periodically throughout the program.

Session Presentation

Also provided are step-by-step talking points for each session. Talking points cover the new material being presented to the participants, topics to discuss, questions to ask, activities to conduct, and suggestions to offer.

Facility Trainers should not simply read the text as written. Rather, they should use the text to prepare for each session and to ensure that all important points are discussed, that all participants' questions are answered satisfactorily, and that participants have a chance to practice the recommended strategies for overcoming challenges. Facility Trainers should follow the sequence of activities in the guide (i.e., cover all the material in the order it is presented in the guide). At the same time, Facility Trainers should assess the participants' skill levels, roles in the facility, and interests to tailor their language, examples, questions, suggestions, and recommendations accordingly.

Curriculum Icons

Notice that a different icon represents each directive.

New material to be presented to participants is introduced with “**Present**” for example,



Present: Today we are going to talk about infection prevention and its role in the safety of our patients and staff.

Discussion questions are introduced with “**Ask**” for example,



Ask: Were you able to implement the infection control techniques as suggested?



Discussion questions are followed by “**Open Responses**” which indicates that the Facility Trainer wants to hear whatever participants have to say on the question.

Participant handouts are introduced with “**Refer**” for example:



Refer participants to the “Infection Prevention and Surveillance in the Dialysis Unit” handout in the **Participant Notebook**.

Participant activities are introduced by “**Activity**” for example:



Activity: Think of one infection prevention activity that you will focus on before next week and how you will do so.



Write down the challenge and how you will overcome this challenge. Some activities require looking at participant handouts; some are group-based; and others require individual attention.



Notes to Facility Trainer

Throughout the guide are notes for the Facility Trainer; identified with this icon and separate text in boxes. These “asides” from the presentation material are for the presenter’s reference, and are not meant to be presented to the participants. They provide information that the Facility Trainer should know but that participants do not need to know. Sometimes they suggest how to handle certain participants or situations.

Notes and Homework

As soon as possible after each session, the Facility Trainer should use the “Notes and Homework” page to write notes about the session. The notes should include comments about what worked, what needs to be done differently for the next session, which participants need specific follow-up or retraining, what information or ideas the Facility Trainer needs to research, and general concerns or issues that need to be addressed.

Below are examples of the type of notes the Facility Trainer should enter in the “Notes and Homework” page:

- “The discussion about barrier/challenges to meeting infection control guidelines turned negative quickly with little positive suggestions – redirect to topic area at hand and help group identify solutions for each challenge, give as homework, or channel discussion to solutions for each challenge.”
- “Use the group to identify what is working well currently, or what simple barriers can be overcome creatively as a team, versus remaining a barrier moving forward.”
- “Identify with group any system breakdowns that may be leading unintentionally to challenges and discuss these with leadership after each session. Once identified work on action plan to adjust system to best meet infection prevention needs.”
- “Employee X may need additional support or remediation on XYS technique, policy, etc. Then follow-up with this person for a one-on-one review with the Facility Trainer to work on plan.”

Setting up the Room

The ideal room setup for sessions is tables or desks in an area that allows the participants to see and engage each other, as well as the Facility Trainer, and to easily exchange ideas. Rows or long narrow tables are generally not suggested. The Facility Trainer may stand or sit during the session, depending on preference.

The Facility Trainer should always be the first to arrive in order to arrange the seating, get materials and supplies ready, put up the flip chart or white board, and make sure all equipment is present and working properly. Another reason for Facility Trainer to arrive first is so they can greet participants as they arrive. By arriving early, Facility Trainers can break the ice, introduce participants to each other if anyone is unfamiliar, and begin to build relationships. Relationship building and trust about the objectives of this training are especially important during the early sessions of the program.

Keeping on Schedule

Keeping to the time allotted for each part of the session is especially important to ensure that all the material is covered. Without arriving early to prepare and organize, Facility Trainers cannot cover everything within the allotted timeframe. Being early, prepared, and organized helps to build a positive rapport with participants, models accountability for the participants, and demonstrates respect for other people's time. Keeping on schedule also minimizes the burden on participants who need to keep on schedule because of staffing or other patient activities. If participants arrive late, the Facility Trainer may ask them to stay after the session to complete any missed activities.



Stay on time!

Data Collection

Facility Trainers record each participant's signature and pre-session and post-session assessment scores for each session. These signatures and scores also serve as an attendance record for participants.

Make-Up Sessions

If a participant is unable to attend a session, the Facility Trainer should schedule a time outside of class to make up the session one-on-one (or in a small group if several participants did not attend a session). As usual, each participant's *Pre-Session Assessment* should be recorded and the handouts provided. The Facility Trainer and participant should discuss the material that was covered in the missed session. For the make-up session; often a 15–30 minute meeting is sufficient, which for convenience may be held before or after the following session or during a break on an alternate day.

Guidelines for Tailoring Sessions to the Group

When preparing for and presenting the session material, the Facility Trainer should tailor certain elements to the group's background, learning style, and interests. This will primarily involve

incorporating examples that are relevant to a participant's role within the facility, experience level, and responsibilities.

The Facility Trainer should feel free to replace any of the examples given on the participant worksheets with other, more relevant examples. Similarly, the Facility Trainer may use supplementary educational aids if such materials can be used in a way that will enhance learning and not draw attention or time away from the curriculum. Be mindful of the extensive nature of this program and the large amount of information already provided during the 13 core sessions. Avoid overwhelming participants with additional handouts and any unnecessary materials. Even more important, too much information may eclipse the key concepts of the infection prevention activity. Below are some examples of appropriate ways to tailor or add supplementary materials to a session:

- Use examples of situations previously identified at the facility or within the existing facility policies
- Provide policies and procedures that match the information presented to help reinforce prior trainings.

The examples above support the content of the educational intervention, do not need excessive time, and may increase the relevance and interest for participants.

Below are examples of what **not to do**. These actions would take time away from the many basic concepts to be presented and may not be relevant for all participants.

- Do **not** focus on only activities that apply to nurses in a mixed group.
- Do **not** decide against holding a session on the basis that participants do not seem to need it.
- Do **not** plan a group activity during an altered schedule day or during a key patient care time, such as turnover.