Infection prevention in outpatient oncology settings

CDC offers tools to fight back against infections among cancer patients.

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Despite advances in oncology care, infections remain a major cause of morbidity and mortality among cancer patients.\textsuperscript{1,2} Several factors predispose cancer patients to developing infections, including immunosuppression from their underlying cancer and chemotherapy treatment. Frequent contact with healthcare settings may expose them to other patients with transmissible infections. Patients with cancer often require the placement of long-term intravascular devices, such as implanted ports, to provide ease with chemotherapy infusion. However, these devices can provide a direct portal-of-entry for microorganisms to enter the bloodstream if they are not appropriately disinfected prior to access. Thus, careful attention to proper infection prevention practices is essential to the care of cancer patients to minimize their risks for infectious complications.

In recent decades, the vast majority of oncology services have shifted from inpatient to outpatient settings. Each year nearly 650,000 patients with cancer receive outpatient chemotherapy.\textsuperscript{3} However, not all outpatient facilities maintain regular access to infection prevention expertise or have dedicated infection prevention policies for patient protection.

Furthermore, unlike acute care hospitals, there is limited federal and state regulatory oversight of many outpatient settings, including outpatient oncology facilities. As a result, many outpatient facilities are not routinely inspected for infection prevention practices.

Breaches in basic infection prevention practices have resulted in a number of outbreaks.
involving outpatient oncology settings. For example, in a Nebraska oncology clinic, syringes were used to access saline bags shared among multiple patients, leading to the transmission of hepatitis C virus to at least 99 cancer patients, resulting in one of the largest healthcare-associated outbreaks of viral hepatitis. In contrast, similar lapses in infection control practices have also been implicated in outbreaks of bacterial bloodstream infections among cancer patients. Other identified lapses have included poor hand hygiene, suboptimal disinfection of injection caps (e.g., needless connectors) prior to accessing central lines, and inadequate environmental conditions for chemotherapy preparation.

To help combat this public health challenge, CDC launched its Preventing Infections in Cancer Patients campaign in October 2011. This public health program offers healthcare providers, patients, and families a set of user-friendly resources designed to help reduce the risk of life-threatening infections during a cancer patient’s treatment. Each of these tools is described in more detail in the following sections.

**BASIC INFECTION CONTROL AND PREVENTION FOR OUTPATIENT ONCOLOGY SETTINGS (BICAPP)**

The BICAPP (www.cdc.gov/hai/pdfs/guidelines/basic-infection-control-prevention-plan-2011.pdf) can be used by any outpatient oncology facility to standardize and improve infection prevention practices. The document is based on the CDC’s evidence-based guidelines as well as relevant guidelines from professional societies and is tailored for quick implementation in outpatient oncology facilities. It includes key policies and procedures that will ensure a facility meets or exceeds minimal expectations of patient safety. The main components of the plan include the following:

**EDUCATION AND TRAINING.** All facility staff should receive appropriate education and training in infection prevention during orientation as well as annually and any time policies change. Competency evaluations of facility staff should be regularly conducted to assess adherence to recommended infection prevention practices.

**SURVEILLANCE AND REPORTING.** Routine surveillance of infections (e.g., bloodstream infections) and process measures related to infection prevention practices (e.g., hand hygiene) should be conducted for outbreak detection and improvement of healthcare practices. Facility staff should also be aware of and adhere to local, state, and federal requirements for reportable diseases and outbreak reporting.

**At Your Fingertips:** The BICAPP contains an appendix where a facility can insert a list of reportable disease/conditions specific to their state and the appropriate contact information for their local and state health authorities.

**STANDARD PRECAUTIONS.** All facility staff should adhere to Standard Precautions, which include: 1) hand hygiene; 2) use of personal protective equipment (e.g., gloves, gowns, facemasks) depending on the anticipated exposures; 3) respiratory hygiene and cough etiquette; 4) safe injection practices, including appropriate medication storage and handling; and 5) safe handling and cleaning/disinfection of potentially contaminated equipment or surfaces in the patient environment. Procedures for each component of Standard Precautions are detailed in the BICAPP. For example, as part of respiratory hygiene, triaging of patients upon entry to the facility should be performed, especially during periods of increased community respiratory virus activity, to prevent spread of respiratory infections among clinic patients. Safe injection practices that are relevant to oncology facilities include appropriate preparation and handling of saline and heparin syringes for flushing central lines.

**TRANSMISSION-BASED PRECAUTIONS.** Implementation of additional precautions, such as Contact Precautions, Droplet Precautions, and Airborne Precautions, may be warranted in certain situations and should be applied based on a patient’s history and symptoms.

**CENTRAL VENOUS CATHETERS.** When accessing a patient’s central line for infusions and blood draws, all facility staff should use the following three things during chemotherapy:

1. **Hand Hygiene:** Be prepared, and remember the following three things during chemotherapy:
   - **Wash** is a three-letter word - don’t forget to wash your hands between patient care.

2. **Airborne Precautions:** Always wear a mask, even if it’s just a bandana. Nurses, doctors, and others must wear air-tight face coverings that will be the brand because it’s the best at blocking viruses and infectious diseases.

3. **Aseptic Techniques:** If you think something is infected, it probably is. If you have any questions, your healthcare provider can help you determine what to do and how to proceed.

**OUT OF SIGHT, OUT OF MIND... NOT THIS TIME!**

**Did you know?**

One of the most dangerous side effects of chemotherapy cannot be seen?

That’s right, a low white blood cell count, or neutropenia, puts cancer patients at a higher risk for getting an infection.

An infection in people with cancer is an emergency. Be prepared, and remember the following three things during chemotherapy:

1. **Wash** is a three-letter word - don’t forget to wash your hands between patient care.
2. **Airborne Precautions:** Always wear a mask, even if it’s just a bandana. Nurses, doctors, and others must wear air-tight face coverings that will be the brand because it’s the best at blocking viruses and infectious diseases.
3. **Aseptic Techniques:** If you think something is infected, it probably is. If you have any questions, your healthcare provider can help you determine what to do and how to proceed.

**The Out of Sight, Out of Mind poster alerts both providers and consumers that patients undergoing chemotherapy are at a higher risk of developing infections.**

*Image courtesy CDC www.preventcancerinfections.org.*
Cancer Patients campaign also created an educational tool for patients and their caregivers that addresses one of the most common and potentially deadly side effects in patients receiving chemotherapy treatments: neutropenia (low white blood cell count).

Patients with neutropenia are more susceptible to bacterial infections. Their risk for acquiring a life-threatening infection increases progressively with both the duration and magnitude of neutropenia. The CDC used knowledge gained through formative research to tailor messages and launch a website aimed at helping cancer patients understand their risk for developing a low white blood cell count and steps they can take to lower their risk of infection when they are most vulnerable.

Three Steps Toward Preventing Infections During Cancer Treatment (www.preventcancerinfections.org), is an evidence-based tool that assesses a cancer patient’s risk for developing neutropenia during chemotherapy. After the assessment is completed, patients can receive downloadable information about how to help lower their risk for infection and keep themselves healthy while receiving chemotherapy. Educational information is available for everyone even if the assessment is not completed. The CDC hopes this information will lead cancer patients and caregivers to take actions to seek care if they develop this potentially life-threatening condition.

For more information, action steps, and tools to help reduce a cancer patient’s risk of developing potentially life-threatening infections during chemotherapy treatment, please visit www.cdc.gov/cancer/preventinfections or www.preventcancerinfections.org.

References

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