


Infection Control Manual		
	Policy Name	Bone Marrow Transplant (Hematopoietic Stem Cell Transplantation) Patients
	Policy Number	IC 0005
	Date this Version Effective	February 2017
	Responsible for Content	Hospital Epidemiology

I. Description

Describes the infection control practices to reduce infection risk for Hematopoietic stem cell transplant (HCT) patients.

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II. Rationale

Patients who have received a HCT are highly immunosuppressed for 2-3 weeks or longer, depending on type of HCT received. Immunosuppression increases their risk of healthcare-associated infections. This policy pertains to patients under the direct care of the adult and pediatric BMT teams.

III. Policy

A. Personnel

1. Health Care Personnel (HCP) should adhere to guidelines found in Infection Control Policy IC 0040: Infection Control and Screening Program: Occupational Health Service.
 - a. Bone Marrow Transplant Unit staff working in the Protective Environment are required to receive the inactivated influenza vaccine annually. HCP working on Inpatient BMTU who develop respiratory symptoms with or without fever should follow guidelines specific to the Protective Environment (BMTU) for Management of HCP with an Upper Respiratory Tract Infection in Infection Control Policy IC0040: Infection Control and Screening Program: Occupational Health Service.
 - b. Healthcare Personnel who are not permanently assigned to work within the BMTU but may provide care or enter the room of a BMT recipient and have received the live attenuated flu vaccine(FluMist Intranasal) should follow BMT Policy: BMT0085: Flu Vaccine Addendum for BMT Recipients.
 - c.

2. HCP should adhere to all personnel guidelines in the Infection Control Policy IC 0030: Infection Control Guidelines for Adult and Pediatric Inpatient Care.
3. Hand hygiene will be performed in accordance with the Infection Control Policy IC 0024: Hand Hygiene and Use of Antiseptics for Skin Preparation.
 - a. Hand washing is the single-most critical and effective procedure for preventing nosocomial infection. All persons, but particularly HCPs, should wash their hands before entering and after leaving the rooms of patients regardless of whether they were soiled from the patient, environment, or objects
4. Personnel should adhere to Infection Control Policy IC 0031: Isolation Precautions, Infection Control Policy IC 0021: Exposure Control Plan for Bloodborne Pathogens, and Infection Control Policy IC 0060: Tuberculosis Control Plan.
5. Infection control education, including OSHA-required education for bloodborne pathogens and TB, is completed annually via LMS.

B. Patients

1. Aseptic management of vascular access devices is critical to prevent infections. All IV catheters, tubing, pressure monitoring equipment and fluids will be managed and changed according to Infection Control Policy IC 0032: The Prevention of Intravascular Catheter-Related Infections and Nursing Policy NURS 0074: Central Venous Access Device (CVAD) Care and Maintenance.
2. Staff should be familiar with Nursing Policy NURS 0060: Blood Cultures.
3. Inpatients placed on a Neutropenic Diet should have a diet consistent with the UNC Neutropenic diet guidelines in Nursing Policy NURS 0340: Neutropenia. Out-patient diets should be per the appropriate BMT diet guidelines.
4. Each patient and their caregivers will be educated about personal hygiene and hand hygiene.
5. Patients with central venous catheters and their caregivers will be educated by nursing regarding catheter care to prevent IV-related infections.
6. All HCT candidates and their caregivers should be educated regarding the importance of maintaining good oral and dental hygiene for at least the first year after HCT to reduce the risk for oral and dental infections
7. Patients colonized or infected with multidrug resistant organisms will be placed on contact precautions per Infection Control Policy IC 0031: Isolation Precautions.
8. Patients and visitors presenting to the BMT Clinic and Peds Hem/Onc Clinic waiting area with cough, sore throat, runny nose, skin rash or any other respiratory symptoms should be placed in an exam room as soon as possible on Droplet and Contact Precautions until examined and treatment course is determined.

C. Visitors

1. Families of patients may visit at the discretion of the medical and nursing staff in accordance with the Administrative Policy ADMIN 0181: Hospital Visitation.
2. All visitors for BMT patients must be taught principles and importance of hand hygiene while visiting or accompanying patients. Visitors are expected to wash their hands when entering and exiting a patient room, before and after patient contact, before entering common areas (e.g. nutrition rooms and lounges), and when hands are visibly soiled.

3. Visitors with signs or symptoms suggestive of communicable infection (e.g., fever, upper respiratory infection, or flu-like symptoms, diarrhea, vomiting) or recent known exposure to communicable infections (e.g., chickenpox, mumps, measles, pertussis) should be excluded from direct contact with HCT recipients or candidate undergoing conditioning therapy. Ideally, staff should actively screen visitors daily.
4. Children under two years of age are not permitted to visit BMT patients.
5. Children less than 2 years of age of patients housed on the BMTU may visit the Family Lounge but may not enter the BMTU. BMT patients may not visit friends/family in the Family Lounge on BMTU or other public hospital venues.
6. All visitors must be able to follow appropriate hand hygiene and isolation precautions as listed on the isolation signs. Staff must educate patients and visitors regarding isolation precautions where applicable. It will be the responsibility of the Nursing staff to properly instruct the caregiver regarding appropriate Isolation Precautions and hand hygiene. It will be the responsibility of the medical staff to assist the Nursing staff as necessary with patient and visitor/family education and enforcement of this policy.

C. Equipment

Shared equipment (e.g. stethoscopes, glucometers) or other items such as toys, games, videos and computers must be disinfected per Infection Control Policy IC 0030: Infection Control Guidelines for Adult and Pediatric Inpatient Care. Inpatient BMT patients will have a stethoscope in the room that remains with the patient throughout their hospital stay. For guidelines on cleaning equipment after use in an isolation room refer to Infection Control Policy IC 0031: Isolation Precautions. Respiratory equipment will be managed by following Infection Control Policy IC0057: Respiratory Care Department.

D. Isolation Precautions

1. In the inpatient setting, it is the policy of UNC Hospitals that all healthcare personnel, visitors, and family members must comply with Isolation Precautions. For details regarding UNC Isolation policies refer to Infection Control Policy IC 0031: Isolation Precautions.
2. Protective Precautions are to be practiced for all bone marrow transplant recipients during the entire transplant hospital stay (see Infection Control Policy: Isolation Precautions). Patient room door must remain closed to ensure positive HEPA filtered pressure.
 - a. If a BMTU patient on Protective Precautions must be transferred to a unit (e.g., PICU, MICU) that is not HEPA-filtered, a portable HEPA unit (from Patient Equipment) should be ordered and placed in their room, near the door, and run on "high." Ideally the patient room door should remain closed.
 - b. NC Children's Hospital Rooms which are appropriate for placing patients who require Protective Precautions without a portable HEPA filter
 - i. 5C07, 5C08, 5C17, 5C18, 5C19,
 - ii. 2C11, 2C12 (PICU)
3. Airborne Infectious Diseases
 - a. In accordance with the Infection Control Policy IC 0060: TB Control Plan, patients requiring Airborne Precautions for known or suspected *Mycobacterium tuberculosis* will be relocated to a negative pressure room meeting CDC recommendations for housing such patients. Anterooms should be used to ensure appropriate air balance relative to the Protective Environment and hallway. For details regarding Airborne Precaution

polices and room management refer to the Infection Control Policy IC 0031: Isolation Precautions.

- b. Patients with shingles (herpes zoster) or chicken pox (varicella) should be housed in a negative pressure room on **Airborne plus Contact Precautions**. If, because of the patient's medical condition it is not feasible to move the patient, the Infection Preventionist (IP) should be consulted (during office hours [M-F 7:30 am – 4:00 pm] call Hospital Epidemiology at 984-974-7500; at other times, page the On-Call Infection Preventionist at 123-7427.
- c. NC Children's Hospital Rooms which are appropriate for placing BMT patients with infections requiring airborne isolation
 - i. 2C11, 2C12 (PICU)
 - ii. 2C15 (PICU) with a portable HEPA unit in the ante room
4. In-patients and outpatients with URI symptoms of an upper respiratory tract infection will be placed on Droplet and Contact Precautions: all those entering the patient room must wear mask, gloves and gown until organism causing the illness is confirmed. Once the diagnosis is confirmed follow the guidelines in Infection Control Policy IC0031: Isolation Precautions: Appendix 3: Quick Glance for Respiratory Virus Panel Isolation Precautions.
5. In the BMT and Peds Hem/Onc Clinics, Isolation precautions signs should be used for BMT patients requiring precautions per Infection Control Policy IC0031: Isolation Precautions. The sign should remain in place until the patient has left and the room has been cleaned. Prior to placing another patient in the room all surfaces in the room, such as the exam table, will be wiped with an EPA-registered disinfectant-detergent (e.g., MetriGuard, Sani-Cloths) or a Bleach wipe for Enteric Contact Precautions
6. Clinic patients with possible communicable disease transmissible via the airborne route (e.g., shingles or chickenpox) should not wait in the waiting area; instead, they should be immediately placed in a negative pressure room. The tissue test should be used to test for negative pressure prior to placing the patient in the room. After the patient leaves, the room should be left unoccupied with the door closed and the airborne isolation sign displayed for 30 minutes and the room cleaned prior to placing another patient in the room.

E. Environmental Controls

1. Ventilation will be consistent IC0045: Plant Engineering and Maintenance policy for a protective environment in regards to filtration, pressurization and air exchanges. Patient room doors should be kept closed. All rooms in the BMTU are supplied with HEPA-filtered air. This system is maintained by Plant Engineering.
2. The patient room windows will remain closed at all times.
3. In the event of a water leak, patients should be removed from the area and the Maintenance Department notified immediately for remediation. After remediation, Environmental Services should perform a terminal cleaning prior to placing patients in the area. Notify the Hospital Epidemiology Department as soon as feasible.
4. Nursing staff and Plant Engineering will coordinate to assure that maintenance activities (i.e., air filter changes) requiring the vacating of patient rooms are completed in a timely fashion.
5. Construction, renovation, and repairs in, near, or impacting the BMTU, BMT Clinic, Pediatric Oncology Clinic, and 5 Children's Intermediate Care.

Bone Marrow Transplantation Unit and Clinic

- a. Occasionally Plant Engineering and other departments must enter ceiling tiles to perform installations, repairs or maintenance. The precautions for this type of work are located in the Infection Control Policy IC 0045: Plant Engineering and Maintenance, Appendix 3, Precautions for Patients in Clinical Areas Where Ceiling Work is Planned.
- b. Construction, renovation and repairs will be performed in accordance with the Infection Control Policy IC 0045: Plant Engineering and Maintenance. Hospital Epidemiology will work closely with Plant Engineering, contractors and BMTU staff to ensure proper precautions are utilized to protect patients during these activities.
- c. BMTU/5 Children's Intermediate Care staff should contact Hospital Epidemiology (984-974-7500 or page 123-7427 after hours) for questions about ceiling work or other construction/maintenance activities.

F. Implementation

It is the responsibility of the Nurse Supervisors, Program Director, and Medical Directors of the Bone Marrow Program to implement this policy. It is the responsibility of all HCP involved in the BMTU, 5 Children's Intermediate Care, BMT Clinic, and Pediatric Hematology/Oncology Clinic to adhere to this policy.

IV. Reference

CDC. Guidelines for Preventing Opportunistic Infections among Hematopoietic Stem Cell Transplant Recipients. MMWR 2000; 49 (No. RR-10): 1-125.

Yokoe, D., Caper, C., Dubberke, E., Lee, G., Munoz, P., Palmore, T., Sepkowitz, K., Young, J-AH., & Donnelly, J. (2009) Guidelines: Safe living after hematopoietic cell transplantation. Bone Marrow Transplant (44), 509-519.

V. Reviewed/Approved by

Hospital Infection Control Committee

VI. Original Policy Date and Revisions

Revised on May 2006, May 2007, May 2009, May 2010, May 2011, May 2012, May 2013, February 2016, Feb 2017_{edit}