Prevention of Acquired Infections in the Classroom

Teachers of young children and students with multiple and severe disabilities know the classroom can be a hotbed for infection. The close proximity of students and teachers, the closed environment often devoid of properly circulating fresh air, and the shared materials, from toys and crayons to books and kitchen supplies, make the classroom an infectious breeding ground. Many students are unable to or do not understand the importance of such tasks as covering their mouths when they cough, properly suing and disposing of tissues, or properly washing their hands adds which greatly to the problem.

Some of the infections passed from person to person in the classroom are mild, such as colds. However, even a cold can be devastating to a medically fragile child. Other infections, such as cytomegalovirus (CMV) or hepatitis B, can be serious for teachers and students alike. For this reason, it is important to know how infections are spread.

For infection to spread from person to person, certain factors must be in place. There must be an infected person, or host, in the environment. The infection must have a way to escape the infected person and be transported to a new person. Finally, the infection must have a way to enter the body of the second person. Depending on the type of infection, infections can leave the body of the host through body fluids, such as mucus, urine, feces, or blood (contact transmission), or become airborne when the host coughs or sneezes (airborne transmission).

Contact transmission can be direct or indirect. Direct transmission occurs when a teacher or student comes in contact with the infected student’s body fluid as it leaves the body. For example, a teacher may change the diaper of an infected student and urine, carrying the infection, enters the teacher’s body through a small break in the skin. Indirect transmission occurs with infections that can live outside the body of the host. An infected student can drink from a cup and set it down. The infection is now on the surface of the cup. Another student picks up the cup and drinks from it, allowing the infection to enter through the mouth.

Airborne transmission occurs when someone with an infection coughs or sneezes without covering the mouth or nose, either with the hand or a tissue. Fine droplets carrying the infection are carried through the air to other individuals in the environment. These droplets can then enter the body of another through the mucus membranes in the nose or mouth.

It is important to note, however, that each infection, whether bacterial or viral, has its own method of transmission. Some infections are only transmitted through body fluids and some are only airborne. If you know a student, or an adult in the room, has an infection, it is important to know if and how the infection can be spread to others.

The most effective method of preventing the spread of infection is the consistent use of universal precautions. This includes the use of latex gloves, proper hand washing,
continuous cleaning of hard surfaces with a thorough cleaning at the end of the day, proper dishwashing and laundering, proper toileting procedures, and prevention of shared materials which could be contaminated with body fluids.

Teachers and other caregivers should always wear latex gloves then in situations where they will come in contact with body fluids. Non-latex gloves are available if either an adult or student is allergic to latex. An allergy to latex should not be an excuse not to wear gloves. It is also important to note that wearing gloves is for the protection of the students as well as the adults in the room. Gloves should be changed between students and the adult should not touch anything during the care of the student. Necessary supplies to be retrieved prior to beginning the routine so that the teacher does not have to open drawers or cabinets once the gloves are on. A supply of gloves should be kept in both toileting and feeding areas, as well as with the first aid kit. Wearing gloves does not eliminate the need for following proper hand washing techniques, and hands should always be washed following the removal of gloves.

The single greatest weapon the teacher has in the prevention of infection is proper hand washing. Students also must be taught this skill to prevent the indirect transmission of infection from their hands to surfaces throughout the classroom. The Centers for Disease Control and Prevention recommends the following procedure for properly washing hands. First, use soap and running water if at all possible (alternatives will be discussed below). Use a pump disinfectant soap rather than bar soap. Rub your hands together vigorously. Wash all skin surfaces, including the backs of hands, wrists, between fingers, and under fingernails. Rinse well, and dry hands with a paper towel. Use the towel to turn off the water, rather than directly touching the knob and risking recontamination. Hands should be washed after each contact with a student.

While the above practice is the best for preventing infection, many teachers do not have easy access to bathrooms, or the ability to wash hands after each contact with a student. Currently, the two alternatives to washing with soap and water are using a waterless sanitizing gel or moist towelettes. For the waterless gels, follow the directions on the bottle, as some vary slightly. Students also must have access to the gel to keep their hands clean. If using the moist towelettes, rub the hands vigorously with one towelette, cleaning all surfaces in the same way you would with soap and water. Use a second towelette to rinse. Be sure to dispose of the used towelettes properly, and don't allow more than one person to use the same towelette.

Teachers run a great risk of infection in the bathroom. In assisting with toileting, diapering, or performing health care procedures such as catheterization or ostomy care, teachers can come into direct contact with urine, feces, and blood. Gloves should be worn for these procedures. Contamination can be greatly reduced by covering diapering surfaces with paper. Paper, gloves, diapers, and any other contaminated materials should be disposed of in a plastic bag following diapering. Even if paper is used, the diapering surface should be cleaned with a disinfectant. Once cleaned, teacher and student should wash their hands, even though gloves were worn.

In choosing a disinfectant for diapering tables and other hard surfaces, teachers have
several options. There are a variety of commercially available cleaners. The janitor may be able to provide disinfectant cleaners, saving precious classroom funds for other consumables. Be careful about using some chemicals on eating surfaces and kitchen counters. Be sure to read labels carefully. The least expensive and most frequently recommended cleaner is bleach. One part bleach mixed with ten parts water will safely clean and disinfect hard, nonporous surfaces. A fresh cleaning solution should be mixed in a spray bottle each morning. The spray bottle must be kept out of reach of the students.

Dishes must also be cleaned throughout the day. Best practice dictates that dishes should not be cleaned in the classroom unless a dishwasher is available. Temperature, such as that reached in a properly functioning dishwasher, is still the only proven way to kills germs on dishes. To date, no data exists verifying that antimicrobial dishwashing soaps kill germs more effectively than regular dishwashing soaps. If you do have a sink in your classroom, it is NEVER appropriate to use the same sink to wash hands following toileting and healthcare procedures that is used during food preparation or rinsing dishes.

Laundry washed at school must also be done with care. It is important to wash all laundry in a properly functioning machine in hot water. Students washing laundry as part of a functional curriculum should be taught to wash their hands after loading the washing machine.

Finally, toys and school materials must be cleaned, especially with young children and those students that put toys and other materials in their mouths or have problems controlling their saliva. It is difficult for teachers to clean all objects as they are being used. One solution is to have a dirty toy box. As toys are used, have students drop them in a box. At the end of the day, clean all toys with bleach and return them to the shelves. Teach students to remove toys only from the shelves, and never from the dirty toy box. Items which cannot be cleaned, such as books, should be handled only by the teacher, or should not be shared. Students can also keep books or noncleanable supplies in their desks or cubby holes with personal items such as toothbrushes and combs, labeled with their names or pictures, so that sharing does not occur.

Infection control in the classroom is possible with planning and consistency.