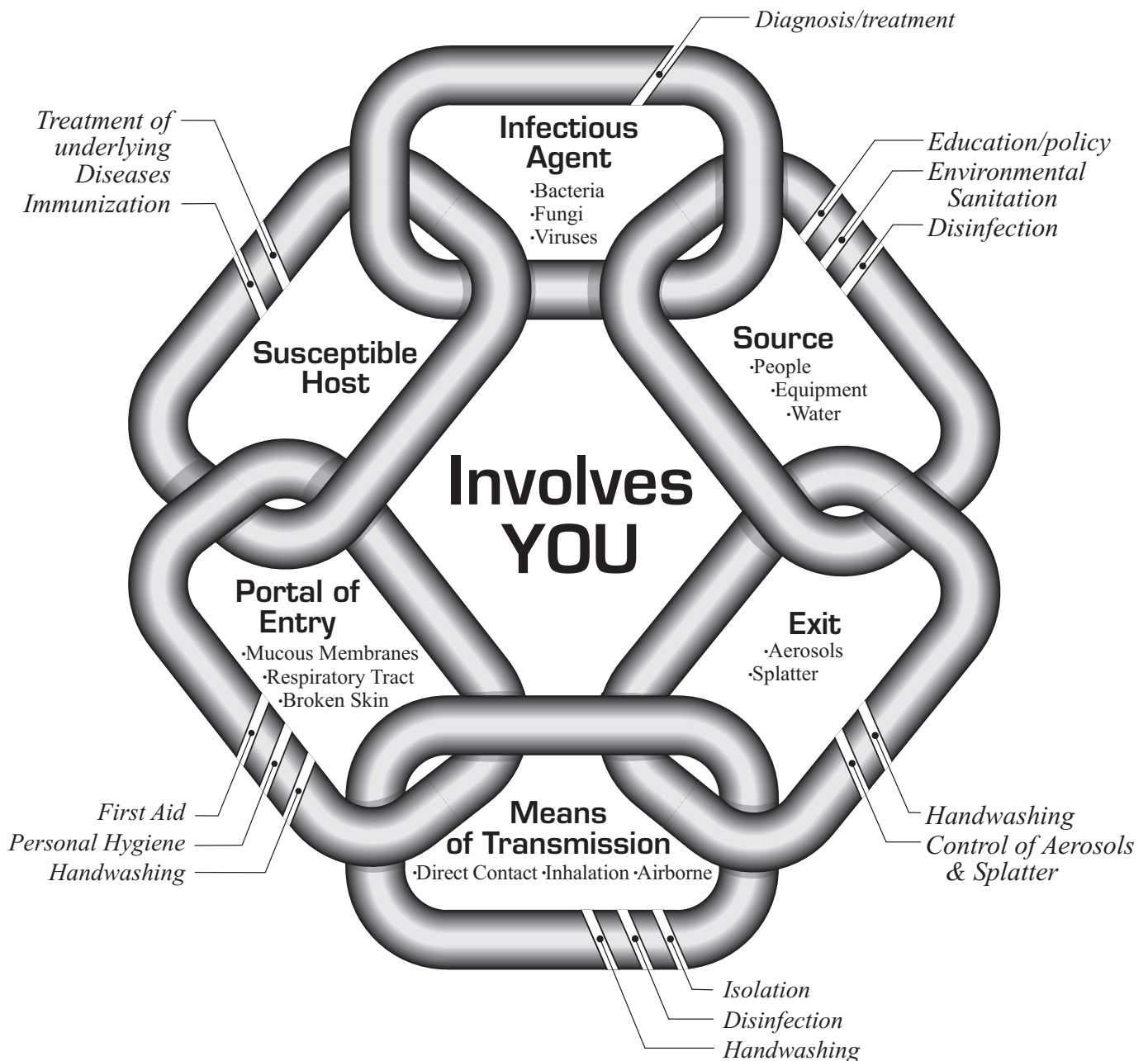


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Breaking the Chain of Infection



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Even before your patient is seated and whether you are conscious of it or not, you “break the chain of infection” constantly throughout the day. Hand hygiene, personal protective equipment, pre-procedural rinses, dental dams, high volume evacuation and surface barriers or disinfection are just a few of the things you do. Effective infection control strategies prevent disease transmission by interrupting one or more links in the chain of infection.

The problem of aerosols and splatters in the dental operatory has been well researched and documented — just google “dental aerosols” and you are overwhelmed by the reference material available. Dental drills and ultrasonic scalers give off a high number of aerosol particles containing body fluids — saliva, blood and dental plaque — and microbes. “More common is the apparent spread of cold and influenza viruses by airborne routes. However, the actual documentation of an airborne route of transmission of cold and influenza viruses is difficult to verify. Because cold and flu viruses can be transmitted by contact, contaminated objects and an airborne route, in a flu outbreak it often is difficult to know the exact route by which the virus is transferred.”(2)

A pre-procedural rinse such as chlorhexidine lowers the number of aerobic bacteria in your patient’s mouth. CRA found “two consecutive rinses are needed for optimal effectiveness. The first rinse mainly complexes with the saliva and the second rinse, performed immediately after expectoration, provides the main effect in lowering microbe counts. CRA believes this simple procedure should become the routine as each patient is seated in the operatory before any dental procedure, and intermittently during oral hygiene procedures and any other procedures where a rubber dam cannot be used”. (1)

Whenever possible, dental dams should be used. Besides providing a dry field with increased access and visibility for restorative work, dental dams isolate the teeth to be treated from the saliva and soft tissues and tongue of the oral cavity and reduce the number of microorganisms in the aerosols generated during treatment.

New infection control recommendations for dentistry from the Center for Disease Control in 2003 recommends that a surgical mask and eye protection with solid side shields or a face shield be worn to protect mucous membranes of the eyes, nose and mouth during dental procedures likely to generate splashing or spattering of blood or other body fluids.

Masks are worn to protect you. They are disposable and composed of multiple layers of synthetic filter materials designed to collect and retain microscopic particles. The minimum goal is to filter out at least 95% of small particles that directly contact the mask. The bottom line is that a mask is only as good as it fits. Masks should be changed after every 20 minutes of heavy exposure to fluids (during cutting or polishing with a water cooled instrument) or after an hour of normal use. As they become wetter, masks become less effective. There is invisible soaking of aerosolized liquids to the interior side of the mask, known as wicking that draws microbe laden liquid into direct contact with the mucous membranes of your nose and lips on the interior side of the mask. (3)

Face shields do not provide any protection but do block spatter. Used together with a mask that fits well and eyeglasses with side shields can establish an effective barrier between you and aerosols during dental procedures.

Infection control in your office consists of numerous steps to break the chain of infection. Pre-procedural rinses, dental dams, personal protective equipment like masks, face shields and glasses with side shields all play a part in your ability to deal with dental spatter and aerosols.

- (1) Rella Christensen, Aerosols, Proof Magazine, December 5, 2006
- (2) Aerosols and splatter in dentistry, JADA, Vol. 135, April 2004
- (3) Rella Christensen, Aerosols, Proof Magazine, December 5, 2006