

## Cassettes: Safety and Efficacy Considerations

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*Scenario: A dental practice has been exceptionally busy with full daily schedules and a number of unexpected, extended treatment appointments. As a result, the standard time allotted for reprocessing instruments has been shortened. After noticing a backlog of instruments awaiting reprocessing in the ultrasonic, a dental assistant forgoes mechanical cleaning and scrubs contaminated instruments wearing patient exam gloves. She is momentarily distracted by other personnel coming into the area, and accidentally punctures herself with a soiled scaler. After a few not-so-nice words she washes her hands and notices a deep cut. The source patient for the contaminated instruments is not known, and so it is not possible to ask one of them to be tested. As required with the practice's written protocol, she reports the accident, the incident form is completed, and logged in. Then comes the trip to a local medical clinic with whom the dentist has contracted for post-exposure evaluation and serological testing. The physician examines the wound, provides any first aid, discusses possible occupational infection risks, and recommends serologic testing for bloodborne pathogen exposure. Test results from the clinical lab are known in a few days, and she is relieved to see they are negative for hepatitis B, hepatitis C, and HIV infection. The practice receives a bill from the clinic for \$750. Unfortunately, just a couple of weeks earlier, one of the dental hygienists also suffered a sharps injury while carrying and sorting a tray of used instruments in the reprocessing area. She went through the same post-exposure protocol, her lab tests were negative, and the practice was also billed \$750 for the services.*



How could the accidents, mental anguish caused to the two clinical personnel, as well the monetary expense to the practice been prevented? While better infection control awareness would have definitely helped, an additional preventive approach could have included the use of cassettes

into the practice routine. How so you ask? Incorporation of cassettes into an infection control program provides an effective, efficient cleaning option, plus valuable safety assistance to those responsible for reprocessing items between patients.

The earlier incident involving transport of contaminated instruments, could have been prevented if the items were brought to the reprocessing area in a closed container. The Centers for Disease



Control and Prevention (CDC) addressed this issue years ago by recommending the use of work practice controls, such as covered containers, to minimize instrument handling. Bringing patient instruments in the same cassette used at chairside for treatment meets that objective, as there should be no temptation to rearrange or handle instruments either during transport or when placing them in ultrasonic units or instrument washers for cleaning.

As for the accident involving hand scrubbing of soiled instruments, preventing that incident would have required the assistant to understand that using cassettes in a practice provides multiple advantages that can augment a facility's infection control program (**Figure 1**) and protect health professionals from occupational exposure. At least two of the advantages listed below— time savings and improved safety— apply to the scenario described previously.

#### **Figure 1. Instrument Cassette Advantages:**

1. **Time savings:** Cassettes are able to hold all instruments from treatment in operatory through the cleaning and sterilization processes; this eliminates the risk from manual cleaning of contaminated items.
2. **Improve safety:** Minimal handling of contaminated instruments during preparation of reusable items can decrease potential for sharp injuries.
3. **Streamline reprocessing between patients:** By promoting proper instrument organization and spacing, cassettes allow for a smooth flow of instruments from the conclusion of patient treatment through cleaning and sterilization procedures.
4. **Decrease potential for contamination:** Spacing of instruments on cassette rails provides an optimal environment for reprocessing.
5. **Better instrument organization for patient treatment:** Cassettes and instruments can be color-coded to organize and identify them for specific procedures.
6. **Extend instrument longevity:** Cassette rails and holders keep instruments firmly in place during reprocessing procedures preventing damage, such scratches on mirrors, damage to cutting edges, and breakage.

Today's dental practices have multiple, acceptable infection control options. Minimizing occupational risk potential must be included when any technology or product is considered for inclusion into a treatment setting. Dental professionals have incurred many accidental sharps exposures when transporting and hand cleaning instruments between patient appointments. However, the saying "look how far we all have come" is reinforced when a commitment to use cassettes during patient care and instrument reprocessing is made.



**About the author:** *Dr. John A. Molinari is Professor Emeritus at the University of Detroit Mercy, where he served for 32 years in the School of Dentistry as Professor and Chairman of the Department of Biomedical Sciences and Director of Infection Control. Currently, he is Infection Control Director for THE DENTAL ADVISOR in Ann Arbor, Michigan. He has published over 500 scientific articles, text chapters, and abstracts in the areas of microbiology and immunology, and lectures nationally and internationally on topics dealing with infectious diseases and infection control. He is a founder and Past-President of OSAP, and is also co-author of the text Cottone's Practical Infection Control in Dentistry. He has served as a consultant for the CDC, ADA Council on Scientific Affairs, Council on Dental Practice, and regional hospitals. Dr. Molinari also was Chairman of the State of Michigan Governor's Risk Reduction and AIDS Policy Commission. Previously, he was the Infection Control section editor for The Compendium of Continuing Education in Dentistry, a member of the Editorial Board for The Journal of the American Dental Association and contributed a monthly column for Dental Economics. In recognition of his efforts, Dr. Molinari was inducted as an honorary member of the Michigan Dental Association, the International College of Dentists, the American College of Dentists, and was a recipient of the ADA Golden Apple Award.*