

DENTAL INFECTION CONTROL AND OCCUPATIONAL HEALTH COURSE

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It has been a busy time since the last newsletter because of multiple ongoing projects and several planning sessions for the impending move to Naval Training Center, Great Lakes IL. Hopefully, early in 1999 I will finish an update to DIS #37 with many new chapters. As you are well aware, the field of dental infection control and occupational safety is constantly changing. I hope this update will prove to be useful and timely for all facilities. I will continue to do my very best to keep each of you abreast of the changing developments as they happen.

As always I am available to answer your individual calls, e-mails, or letters. You can reach me at the following address and DSN:

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If you have any ideas or would like to contribute to this publication, please do not hesitate to contact me.

DENTAL INFECTION CONTROL AND OCCUPATIONAL HEALTH COURSE

The sixth annual USAF Infection Control and Occupational Health Course will be conducted from 3-7 May 1999 at the Radisson Hotel in San Antonio. The course will feature a distinguished group of speakers including such nationally recognized authorities as Dr Chris Miller and Dr John Molinari. Also, representatives from the

Army, Navy, Veterans Administration, and the Centers for Disease Control and Prevention will complement our own Air Force experts in discussing current issues in infection control and occupational health/safety.

There will be 20 funded quotas this year for the course. With fewer funded quotas available, you will need to plan early in order to attend.

All active duty USAF personnel who are **not** command-funded make application through:

HQ AFPC/DPAMD
550C St. W STE 25
Randolph AFB TX 78150-4729

All non-USAF personnel (including Army, Navy, VA, Public Health) make application through:

Mr Chuck Deosdade
USAF SAM/TA
2602 West Gate Rd
Brooks AFB TX 78235-5252
DSN 240-4681/4680
(210) 536-4681/4680
DSN FAX 240-1446

If your additional duties include either infection control or safety – and you have not yet been trained – plan to attend!

ENLISTED ATTENDEES FOR THE USAF DENTAL INFECTION CONTROL AND OCCUPATIONAL HEALTH COURSE

A total of 20 unfunded quotas have been set aside for selected enlisted personnel to attend the 1999 USAF Dental Infection Control and Occupational Health Course. These individuals will be eligible to

earn a certificate of course completion.

The course is at the graduate level, and it is prudent to select enlisted personnel for attendance. Experience has shown that personnel who meet the following criteria will benefit the most from the course:

1. Current duties: Individual is serving as the NCOIC of the clinic infection control or safety program.
2. Academic credentials: Individual has the educational background to obtain maximum benefit from the course. Typically two years of college or an associate degree in the life sciences is helpful.
3. Clinical experience: Individual has sufficient work experience to obtain maximum benefit from the course.

If your Dental Infection Control or Safety Officer has not yet been trained, he/she should be given priority for course attendance. Contact Col Bartoloni at DSN 240-3502 for further information.

1999 OSAP ANNUAL SYMPOSIUM

The 1999 Annual Symposium of the Organization for Safety and Asepsis Procedures Research Foundation (OSAP) will be held from 24-27 June 1999 in Cincinnati, Ohio. The meeting will feature timely updates on several dental infection control and office safety issues.

For those who are working in the rapidly changing field of dental infection control and occupational health, the OSAP Annual Symposium offers an unparalleled opportunity to exchange ideas with the top experts in the field and to keep abreast of the newest developments.

Contact OSAP at (800) 298-OSAP (6727) or fax (410) 798-6797, or check their homepage at <http://www.osap.org> for information on membership and upcoming programs.

NEEDLESTICK INJURIES

In 1991, the Occupational Health and Safety Administration (OSHA) published the Bloodborne Pathogens Standard to protect employees from

exposures to bloodborne illnesses. This standard makes it imperative that we provide a safe and healthful work environment for all employees. Needlestick injuries are the main avenue for bloodborne pathogen exposure in the healthcare setting and represent the greatest risk of occupational infection to dental healthcare workers (DHCWs).

Each year in the United States, there are an estimated 800,000 needlestick injuries, with many more going unreported. Approximately 16,000 (2%) are likely to be contaminated with the human immunodeficiency virus (HIV). Needlestick injuries in dentistry primarily occur in one of the following instances: passing the syringe between provider and assistant, administering the injection, starting intravenous sedation, disposing of needles, collecting and disposing of materials during patient care procedures, and recapping needles.

Today more than 20 pathogens have been identified as potential sources of bloodborne diseases from needlestick injuries. The most serious are hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV). Studies estimate the risk of developing HBV via a needlestick incident to be about 30%, HCV about 3%, and HIV about 0.3%. The greatest danger for transmission exists when the following factors are present: hollow-bore needles, needles that have been directly in a blood vessel, deep puncture injury, and high patient titer levels.

OSHA's Bloodborne Pathogens Standard requires the use of standard-universal precautions, personnel protective equipment (PPE), and engineering and work practice controls to reduce exposure. The standard also requires employers to establish a written exposure control plan as well as engineering and work practice controls to eliminate or minimize employee exposure. We must be familiar with work practices and engineering controls to help reduce these exposures and injuries.

Recommendations

- 1) Use a "scoop" technique in which the uncapped needle is slid into the needle sheath lying on the instrument tray or table.
- 2) Needle cap holders, which are mounted on

a wall or countertop, make recapping safer because they hold the cap while the needle is being inserted.

- 3) Proper use of sharps container.
- 4) No two-handed needle recapping.
- 5) Safety syringes which possess a sheath that locks over the needle.

Safer needle devices (safety syringes) can significantly reduce needlestick injuries. These devices have built-in safety controls to reduce needlestick injuries before, during, or after use. The most effective and user friendly safety syringes are those that provide a barrier between the hands and the needle after use, allow or require the worker's hands to remain behind the needle at all times, and have safety features integral to the device itself rather than as accessories. Ideally, they should also be in effect before disassembly, remain in effect after disposal, be simple and easy to operate with little or no training, and not interfere with the delivery of patient care. DIS has evaluated three safety syringes and published the results in DIS 45-28, 51-15, and 55-29.

All dental facilities must have a written protocol dealing with occupational exposure to bloodborne pathogens. This means that a written protocol should exist that describes what treatment and follow-up are necessary in the event of a percutaneous injury such as a needlestick. The Centers for Disease Control and Prevention (CDC) estimates the average cost of following the recommended needlestick protocol to be \$1,200.00. It is critical that all dental healthcare workers adhere to recommended infection control procedures to prevent needlestick injuries

HUMAN IMMUNODEFICIENCY VIRUS

Percutaneous injuries can potentially transmit bloodborne diseases like human immunodeficiency virus (HIV) to dental healthcare workers. The risk for HIV transmission after a percutaneous exposure to HIV-infected blood is 0.3%. OSHA's Bloodborne Pathogens Standard requires that current Public Health Service (PHS) recommendations for postexposure prophylaxis (PEP) be followed after an exposure incident. New guidelines were issued in May 1998 titled "Public Health Service Guidelines for the Management of

Health-Care Workers Exposures to HIV and Recommendations for Postexposure Prophylaxis."

In the United States there has never been a single documented case of occupational transmission of HIV to a dental healthcare worker, although there have been 7 possible cases. Potential occupational exposure to HIV in the dental environment includes percutaneous injury (e.g., needlestick, cuts from a bur), mucous membrane contact (e.g., splash into eyes), non-intact skin contact, and intact skin contact for prolonged period or involving an extensive area.

HIV can be transmitted by blood or bloody saliva. Saliva alone is not considered a risk for HIV transmission but potentially can transmit hepatitis B or C. Evaluation for hepatitis B and C should be provided if contact with saliva includes a possible portal of entry (mucous membrane, non-intact skin, or percutaneous injury).

Antiretroviral agents have shown promise in preventing HIV seroconversion following an exposure incident. Studies show that HIV infection does not occur immediately after exposure. Antiretroviral drugs prescribed early (within 2 hours) may prevent integration or replication. One study showed that zidovudine (ZDV) taken following the percutaneous exposure incident reduced the risk of seroconversion by 81% in healthcare workers. Three classes of drugs are available including nucleoside analogue reverse transcriptase inhibitors, nonnucleoside reverse transcriptase inhibitors, and protease inhibitors.

Following an exposure incident, consultation with a well-informed healthcare provider is imperative before deciding on antiretroviral agents because many have potential side effects. Evaluation of the comparative risk represented by the exposure and information about the exposure source must also be considered.

Appropriate postexposure management is an important part of office safety. OSHA requires all dental offices to have a written protocol outlining the necessary steps following an exposure incident. Employers must have procedures for prompt reporting, evaluation, counseling, treatment, and follow-up for occupational exposures.

The risk of HIV transmission increases following exposures involving a higher volume of blood or blood with higher titers of HIV. For example, a high-volume injury could include: (1) deep punctures; (2) visible blood on the sharp; (3) needles used in an artery or vein; (4) large-gauge, hollow-bore needles; or (5) an actual injection of blood. A high-titer HIV exposure could result from: (1) exposure to blood from a patient with acute HIV seroconversion illness; (2) an advanced AIDS patient; or (3) a known high-quantity viral load.

Most dental injuries are low risk due to the type of exposure incident. The majority of incidents, for example, involve small volumes of blood, are shallow puncture wounds, involve small gauge needles, and usually involve no visible blood. Despite the low-risk level of HIV transmission in dentistry, all dental clinics must be prepared to respond quickly.

The following are recommended steps to take following an occupational exposure:

- (1) Treat the exposure site (i.e., wash wounds or skin sites with soap and water, flush mucous membranes with water).
- (2) Report the exposure immediately.
- (3) Assess the risk of a bloodborne infection (have evaluated by a healthcare provider, evaluate the source patient if known).
- (4) Obtain follow-up counseling, postexposure testing, and medical evaluation (even if postexposure prophylaxis is not provided).

HEPATITIS C

The FDA has approved a drug combination to treat chronic hepatitis C in patients with liver disease who have relapsed following previous treatment with interferon alone. The drug combination is Rebetol (ribavirin) capsules and Intron A (interferon alfa-2b recombinant for injection).

Hepatitis C virus (HCV) is a bloodborne illness that is a potential hazard for dental healthcare workers. Transmission routes include needlesticks and mucosal splashes. Approximately 4 million people in the United States have chronic HCV infection. In its chronic state HCV can result in cirrhosis, liver failure, and hepatocellular carcinoma. Chronic

HCV is the most common reason for liver transplantation in the United States.

Currently there is no cure for HCV and no vaccine is available. The combination Intron A/Rebetol is not a cure for HCV, and it is unknown if this treatment will delay liver disease progression. This combination has been shown to suppress blood levels of HCV better than retreatment patients with interferon alone. Clinical trials showed that after 6 months of therapy followed by 6 months of follow-up without therapy, approximately 45% of patients treated with the combination exhibited reduced HCV levels compared to 5% who were treated with interferon alone. Because serious side effects have occurred during treatment, close monitoring by a physician is mandatory. Side effects include significant adverse reproductive effects, anemia, psychiatric disorders, and flu-like symptoms. Schering Corporation plans to market the combination under the name "Rebetron."

INFECTION CONTROL PROGRAM REVIEW

Many dental procedures expose dental healthcare workers (DHCWs) and patients to infectious pathogens through contact with blood and other potential infectious materials (OPIM). Following proper infection control and safety guidelines can significantly minimize the potential risk.

Understanding and applying the principles of infection control, as outlined in the Centers for Disease Control and Prevention (CDC) *Practical Infection Control in the Dental Office: A Workbook for the Dental Team*, provides the basis for decision making to promptly manage the daily activities of infection control. The following information summarizes some of the major considerations when reviewing an existing infection control program.

Immunizations

The best defense against infections is timely immunizations. All DHCWs are encouraged to receive the hepatitis B vaccine recommended by the OSHA Bloodborne Pathogens Standard. Many infection control experts suggest post-vaccination screening for hepatitis B antibodies following the three-dose series. Studies show that the vaccine is

96-98% effective after the initial series, but some individuals may require additional doses to seroconvert. Occasionally healthcare workers do not respond at all to the vaccine and, if so, they should be informed of their status.

Other recommended vaccines for military DHCWs include: a tetanus-diphtheria injection (booster every 10 years); an annual influenza injection; and immunizations for measles, mumps, rubella, polio, varicella, hepatitis A, and, in the future, anthrax.

Minimizing contact to blood and OPIM

Hands should be thoroughly washed with an antimicrobial agent and dried before and after each patient procedure. Rings and long fingernails can harbor pathogens. Nails should be kept short and well manicured. Rings should be removed during patient treatment. Gloves (exam/sterile surgical) are single-use items and should not be washed and reused. Providers with open lesions should avoid patient contact until the lesions have resolved. Avoid using petroleum-base products on hands while wearing latex gloves due to the potential for latex breakdown, which could compromise barrier integrity.

Facemasks and protective eyewear

Masks, eyewear, and face shields protect the eyes, nose, and mouth from exposure to splashes and spatter during patient treatment and instrument processing. When applying PPE, place eyewear first, then the facemask, followed by gloves. Use a new mask for each patient, and replace when soiled or moist during treatment. Wet masks collapse against the face, placing contaminants in direct contact with the nose/mouth, and make breathing more difficult. Protective eyewear or face shields should not be handled with unprotected hands until decontaminated. Clean protective eyewear with detergent and water. Disinfectants are not recommended due to possible lens damage and potential irritation to skin and mucous membranes.

Protective clothing

Protective garments with long sleeves should be worn during splash/spatter-generating procedures. Protective clothing should be

changed daily or more frequently if visibly soiled and should be placed in a leakproof container that is properly marked. The employer is required to launder contaminated protective clothing.

Sharps injuries

Most occupational exposures to blood or OPIM are due to sharps injuries. Injury prevention techniques can reduce sharps trauma. Always keep the sharpened end of the item away from the body. Avoid using a two-handed technique to debride instruments at chairside. Do not handle sharp instruments by the handful. Keep fingers clear of rotating instruments. Dispose of used needles and other sharps promptly and properly. Use a biohazard-labeled, leakproof, puncture-resistant container in close proximity to the point of use. Avoid overfilling sharps containers. Should injury occur, notify your supervisor and follow your clinic's postexposure management protocol.

Eyewash stations

These stations must follow specifications as outlined by the American National Standards Institute (ANSI) and should be monitored for correct operation and access. Stations should be clearly marked with sufficient access for proper use. Pressure should be checked regularly.

Limiting the spread of blood and OPIM

Instruments, medications, impression materials, and other required armamentarium should be set up ahead of time. Disposable and unit-dose items should be used when possible. To reduce cross contamination in the DTR during patient care, use a pair of forceps or overgloves for additional needed items that are in drawers. Consider having the patient use a pre-procedural mouthrinse to reduce intraoral microbial counts. This has been shown to be effective in minimizing the number of microbes in aerosols and spatter. During treatment, use a rubber dam and high-velocity evacuation to decrease spatter. All items need to be decontaminated prior to processing in the dental laboratory.

Environmental surfaces

Surfaces that cannot be easily decontaminated should be barrier protected. Surfaces not barrier protected that are visibly soiled should be cleaned and disinfected between patients. To properly disinfect surfaces, use a spray-wipe-spray technique (preferably using a stream spray) to remove gross bioburden/ debris, then apply the disinfectant for the labeled contact time. Choose a single product to both clean and disinfect. Complex phenols, iodophors, and dilute sodium hypochlorite are all suitable cleaner/disinfectants. Please remember that you must maintain a list of all hazardous materials (including disinfectants) you use as well as a Material Safety Data Sheet (MSDS) for each product. Instruct staff personnel on the location of the MSDSs. All staff members should be trained in the safe handling, use, storage, and exposure management for each chemical used.

Instrument processing

The first step in instrument processing is to physically remove debris. A holding solution or presoak may be used to prevent debris from drying. Cleaning instruments with an ultrasonic or FDA-cleared thermal washer/disinfector is appropriate for instrument cleaning. Proper PPE for cleaning contaminated instruments includes mask, eyewear, protective garment, and utility gloves. Use a lid when running an ultrasonic to prevent spatter and aerosolization of the contaminated cleaning solution. After instruments are cleaned, rinsed, and dried, package them for sterilization. Place a chemical indicator inside each package or cassette and a process indicator on the outside. Place packages or cassettes vertically in the sterilizer. After sterilization, store packages in a clean, dry area to avoid moisture contamination. To minimize contact with airborne contaminants, keep items wrapped until they are needed at chairside. Biological monitoring using spore tests should be performed at least weekly. Consider measures to control bacterial counts in dental effluent water. Procedures include: flushing lines for 2-3 minutes at the beginning of each day and 20-30 seconds between patients, using a separate water system, disinfecting waterlines periodically, and

installing waterline filters.

Training/Inspections

All staff members need annual training on bloodborne disease transmission and prevention measures. Review infection control practices and procedures within the clinic including hazard communication, fire/general office safety, and hazardous waste management. Inspections should be performed periodically to provide a more objective assessment of infection control strengths and weaknesses.

INFLUENZA VACCINE

Influenza, commonly referred to as “the flu”, is due to a viral infection of the respiratory system. There are three main types of flu viruses called A, B, and C. Symptoms can include a fever, cough, sore throat, runny/stuffy nose, headache, muscle pain, and extreme fatigue. Nausea, vomiting, and diarrhea can occur but are rarely present. It takes 3-5 days to develop symptoms after being exposed. An individual can transmit the flu anytime from 24 hours before to 7 days after symptom onset. In the United States, the flu season is from October to April. Influenza has been shown to significantly reduce work productivity and quality of life.

Most people contracting flu symptoms recover uneventfully within 1-2 weeks. Some people, though, develop severe to life-threatening complications such as pneumonia. In the United States approximately 20,000 deaths each year are attributed to the flu and its complications. The young, elderly, and immunocompromised are most susceptible.

Most illness and death associated with influenza infection can be prevented through annual vaccinations. The vaccine is designed for individuals at increased risk and those who may develop serious complications. This includes military healthcare workers, including dental personnel. Healthcare workers are at increased risk for developing the flu due to close patient contacts in the work environment. In turn, they have the potential to transmit the virus to patients at risk.

The vaccine offers protection for only one flu

season. Many strains exist and the viruses change over time. The vaccine is designed to combat the viral strains anticipated for that season. Each year the vaccine contains three inactive virus strains that are most likely to cause illness during the flu season. The viruses used to produce the vaccine are noninfectious (inactivated) and do not cause the flu. Symptoms that may occur after vaccination indicate coincidental illness (cold) or prior infection. The Food and Drug Administration (FDA) has recommended, for the 1998-1999 season in the United States, a trivalent vaccine containing A/Sydney, A/Beijing, and B/Beijing-like viruses.

The vaccine can prevent the flu within 1-2 weeks after inoculation. The flu vaccine is from 70%-90% effective in preventing the flu among healthy adults. It has been shown that healthy individuals who develop symptoms after receiving the vaccine have milder cases. It is less effective for the elderly and chronically ill. The vaccine reduces the risk of hospitalization by about 50%, pneumonia by 60%, and the risk of death by 75%-80% in these individuals.

The most important side effect of the vaccine occurs among individuals who are allergic to eggs. Vaccine development involves viral growth in hen's eggs resulting in egg antigen components. This can lead to severe allergic reactions in susceptible individuals. Other side effects include injection site soreness, headache, or low-grade fever. All complaints are short-lived. Potential contraindications are individuals who are allergic to prior flu vaccines. People who are presently ill (i.e., who have a fever) should wait to get vaccinated until all symptoms have resolved. Pregnant personnel should check with their physician prior to vaccination.

For individuals who cannot receive the vaccine, antiviral drugs are an option. Two drugs that are available are called amantadine and rimantadine. Both can reduce the severity and shorten the duration of influenza A, if received within 48 hours of illness onset. (Both medications are considered prophylactic agents if administered prior to flu onset in the high-risk population and considered as treatment if used after flu onset).

DENTAL UNIT WATERLINES

In 1995, the American Dental Association (ADA) drafted and adopted the ADA Statement on Dental Unit Waterlines. This document called on the dental industry and research community to develop dental equipment capable of delivering quality dental unit water to patients during nonsurgical dental procedures. The goal is less than 200 colony-forming units of bacteria per milliliter. The ADA hopes to achieve this goal by the year 2000.

In October of this year, the ADA Expert Panel on Dental Unit Waterlines reported that progress was being made toward that goal. Advancements include retrofit technology for dental units and disinfection protocols. The panel stressed that further work was needed, however. In February 1999 the panel will present a complete report to the ADA Board of Trustees. Copies will be available next spring.

DENTAL IMPRESSION DISINFECTION

Dental impressions normally are contaminated with patient saliva and possibly blood. These fluids can contain many bacterial and viral pathogens. Most infectious agents do not survive for extended periods of time outside the body. Several studies, however, have shown survival times of days to weeks for some microorganisms. These microbes can be transferred from contaminated impressions to laboratory workers. It is important to disinfect all impressions before being handled by laboratory personnel due to the potential to transmit disease.

Optimally, impressions should be disinfected at chairside immediately after removal from the patient's mouth. Tuberculocidal hospital disinfectants with hydrophilic and lipophilic virus kill are recommended. Keep in mind, there is no single disinfectant that is compatible with all impression materials. When selecting a disinfectant, material compatibility is important, and clinics should be cognizant of the manufacturer's recommendation for proper disinfection.

Impressions should be thoroughly rinsed with running tap water before disinfection to remove as

much bioburden as possible. Impressions can then be scrubbed with soap and water using a camel-hair brush. Stone can be sprinkled into the impression and the surface gently scrubbed with the camel-hair brush for more complete saliva removal.

Both immersion and spraying can be used to disinfect impressions. Spraying uses less solution but tends to pool, which may prevent some surfaces (e.g., undercuts) from being adequately exposed to the disinfectant. In addition, spraying increases aerosolization. Stream spraying, however, can minimize this hazard.

For spraying, impressions can be placed in an airtight plastic bag and sprayed thoroughly. If using the immersion technique, a container or zipper-closure plastic bag is recommended. After the recommended contact time for tuberculocidal activity, the impression can be removed, rinsed thoroughly with tap water, gently shaken to remove excess water, and poured.

There are several published studies that have evaluated the effects of various disinfectants on different types of impression materials. Most of the studies have focused on the physical properties of the impressions following disinfection, rather than the efficacy of disinfection. The published research has sometimes been contradictory due to the multiple experimental protocols for various impression materials and disinfectants.

Most of the literature agrees that alginate impressions can be safely disinfected with a 1:10 diluted sodium hypochlorite solution or a 1:213 iodophor formulation using either an immersion or spraying technique. Today clinics can purchase disinfectant-impregnated (chlorhexidine or quaternary ammonium compound) alginate. These materials reportedly reduce oral microbes on and within the impression, but they still require disinfection before pouring.

Elastomeric impressions can be disinfected with an iodophor, diluted sodium hypochlorite solution, chlorine dioxide, or complex phenol for the time required for tuberculocidal activity. Be cautious with alcohol-containing phenols. High alcohol content may desiccate some impression materials. Zinc oxide-eugenol (ZOE) can be disinfected with iodophors. Chlorine compounds should not be

applied to ZOE. Compound impressions can be disinfected with diluted sodium hypochlorite solution or with an iodophor.

Communication between the dental provider and laboratory is essential to insure that appropriate disinfection protocols are being followed without overlap. Repeated exposure to disinfectants could compromise the impression, restoration, or appliance. Disinfection of impressions must be coordinated with the receiving laboratory. A specific written protocol is recommended. Ideally, contaminated impressions should be disinfected before transport from the dental treatment room to the lab and vice versa as recommended by the Centers for Disease Control and Prevention (CDC), and the American Dental Association (ADA).

RAPID INDICATORS

The Food and Drug Administration (FDA) recently cleared a unique steam sterilization indicator. The manufacturer claims “performance equivalent to a biological indicator but with results in 20 seconds and no incubation.” The product is called RSI Rapid Indicator and is manufactured by North American Science Associates (NAMSA). It was cleared by the FDA for marketing in September 1997 and is classified as an enzymatic chemical indicator. The 510(k) submission specifies that the product performs “equivalent” to a biological indicator (BI). NAMSA claims this product can be used in place of a BI.

The RSI Rapid Indicator is a bacterial enzyme indicator used for monitoring steam sterilization cycles at 121°C (250°F) gravity placement, 132°C (270°F), and 134°C (273°F) vacuum assisted (pre-vac). The Rapid Indicator Kit contains multiple test units, one bottle of indicator solution, instructions for use, and a certification card.

The Rapid Indicator tablets located in the test unit contain multiple, steam-sensitive, bacterial enzymes. When exposed to steam sterilization, enzymatic activity in the test unit is lost over time in the same manner that bacterial viability is lost over time. The enzymatic inactivation curve parallels the death curve of *Bacillus stearothermophilus* in BIs. The product does not contain spores and requires no incubation. It is not

designed to be used to monitor the effectiveness of “flash” sterilization cycles. RSI Rapid Indicators have been tested concurrently with BIs using conventional steam autoclaves and steam Biological Indicator Evaluation Resistometer (BIER) vessels. The results demonstrated the equivalent performance of RSI Rapid Indicators and BIs for steam.

The system is composed of a test unit and indicator solution. The test unit consists of a glass vial with a tablet containing multiple bacterial enzymes, and a foam insert. Bacterial enzyme activity is detected by simply adding indicator solution to a test unit, following exposure to a sterilization cycle, and visually reading the results at 20 seconds. A white tablet indicates that adequate sterilization conditions were met. A pink or red tablet indicates incomplete sterilization. The test unit is then disposed of immediately after reading the results.

Spore death due to heat exposure is linked to bacterial enzyme inactivation. Thermal injury to bacterial spores is attributed to denaturation of spore enzymes. Steam sterilization irreversibly denatures enzymes present in spores, rendering the enzymes nonfunctional, resulting in spore death. The energies needed for inactivating spores and denaturing proteins are found to be of the same order of magnitude. Both bacterial spores and RSI Rapid Indicators are inactivated by similar means.

Recommendations

- 1) Contact the manufacturer for product literature. Call NAMSA at (800) 860-1888 or visit their website at www.NAMSA.com.
- 2) Present the product information at your MTF Infection Control Meeting for consideration by all committee members.
- 3) Ask the company for samples. Place them in same load as existing BIs. Set testing to confirm positive and negative results.
- 4) Document results.

DIS is working in conjunction with the Chief Consultant to the Air Force Surgeon General for Infection Control regarding this product. Further information will be disseminated when it becomes available.

INFECTION CONTROL Q&A

- Q. Our clinic is considering stamping the AF Form 696 with the statement “Are you allergic to latex?” Is this a good practice?
- A. This suggestion is similar to the one posted in SGDetails 98-2 regarding the medication Fen-Phen. The response to this question is the same. The medical-legal consultant does not recommend the practice of targeting a specific medication or allergy. The rationale is the potential legal liability if a provider singles out a specific drug, or allergy, but fails to ask about others. AF Form 696 addresses the issue of allergies, and it is the patient’s responsibility to accurately answer all questions. I would recommend that all providers ask a question like “Do you have any problems or have you had any reactions to latex products?” Based on the response, the provider can further question the patient to focus on specific individual conditions. If the provider is suspicious, a referral to the appropriate Primary Care Manager is indicated. If the patient has a documented latex allergy, this should be documented in the remarks section of the AF Form 696. If the response is negative, document the remarks section with a statement such as “Patient denies latex sensitivity”. AF Form 696 is not meant to be a comprehensive history but is meant to guide the provider during the initial interview. It is the responsibility of the provider to conduct a complete medical/dental history during the initial patient encounter and to provide appropriate referral when indicated.

