Editorial

Risk Assessment and Management: From the Infection Control and Occupational Safety Perspective

Each country or a region has broad standards that are developed locally or have been adapted from another with respect to dental safety (infection control and occupational safety). These standards, while viewed a dormant issue in day-to-day dental practice, become the focal point when something goes awry (when a patient is put at risk of cross-infection, an employee is injured or when a disgruntled employee or dissatisfied patient initiates a legal proceeding against the clinic). We can minimize these problems by employing tools in risk management.

Risk assessment in simple terms is identification of risks, understanding possible impact of these risks, ranking risks based on adverse outcomes/impact. Risk management is action taken to reduce these risks by implementing meaningful steps in reducing, avoiding or eliminating these situations. Understanding, assessing status/needs and implementing infection control and occupational safety measures in dental practice are significant aspects of risk assessment and management in the dental practice. Periodic assessment, documentation and implementation of safety protocols are important with respect to risk management. These positive steps will help to reduce risks and show proof of good faith efforts toward risk reduction in the event of litigation.

Although some of the variables addressed were specific to either patient safety or employee safety, there may be a cross-over or may affect both categories with respect to risk management. Following are the examples of a checklist that could be used to assess safety issues in dental practice in the United States of America:

Table 1: Variables addressing clinical and chairside issues

(Check if these variables are addressed in your practice)	*Yes*	*No*	*N/A*
Allergic reaction to latex as a specific variable in patient's chart			
Nonlatex Gloves and Nonlatex dams available as alternatives in the clinic			
Questions on TB status in the patient's chart (cough, fever, malaise, recent weight loss in past 3 weeks)			
Health history pertaining to other infectious conditions that may require other specific precautions			
Antibiotic prophylaxis for conditions as indicated for patients with joint replacement			
Use of preprocedural mouth rinse			
Handwashing with germicidal soap before wearing exam/surgical gloves and before starting procedure			
Washing hands with germicidal soap and water after glove removal and examining hands			
Use of emollients on hands at the end of a clinic session			
Change of all barriers on equipment and surfaces between patients			
Disinfection of high touch surfaces, if surface barriers not used or if visibly contaminated			
Use of an intermediate level hospital surface disinfectant (EPA#, Lipo and Hydrophilic Virus Kill, TB Claim)			
Chairside disinfection and rinsing of impressions before transportation to the laboratory			
Disinfection of other portable patient care devices immediately after use (curing lights, etc.)			
Unit dosing of sterile instruments and supplies for patient care before starting procedure			
Unit dosing of materials and single-use-disposable items before starting procedure			
Dispensing an over-glove (food handler's glove)			
Dispensing a red or biohazard plastic bag for saturated wastes (soft waste) before procedure			
Presence of sharps disposal container accessible in patient care area to dispose sharps			
Patient's bib and eyewear			
Use of rubber dam in combination with HVE to control bioerosols for restorative procedures			
Use of HVE during oral prophylaxis procedures to control bioerosols			
Use of PPE based on anticipation of exposure to splash or spatter or specific risks as prescribed			
Prohibiting employees from wearing PPE in patient waiting areas and nonclinical areas			
Examining gloves for tears or punctures and hands for injuries after treating patient			
Use of barriered recording devices (pencils, pens, mouse or keyboards)			
Avoiding contamination of patient record with dirty gloves			

Patient safety; Employee safety; Safety of patient and employee

Table 2. Variables addressing waste disposal, instrument reprocessing and storage

(Check if these variables are addressed in your practice)	*Yes*	*No*	*N/A*
Chairside disposal of regulated waste before transportation of contaminated instruments (hard and soft regulated waste)			
Use of secure and hard bottom container with lid for transporting contaminated instruments			
Presence of dirty instrument *receiving area* for contaminated instruments			
Use of nitrile or heavy utility gloves during instrument reprocessing			
Separation of instruments and handpieces before placing instruments in holding solution			
Use of manufacturer specific recommended protocols for reprocessing handpieces			
Use of ultrasonic devices for cleaning/sonicating instruments			
Examination of sonicated and rinsed instruments for unremoved bioburden			
Measure for monthly testing of ultrasonic machine's efficacy			
Use of a long handle brush to clean items that still have bioburden after sonication and rinsing			
Drying of instruments before placing in sterilization cassettes/pouches/bags			
Steps to assure sterile bags are dry before being removed			
Storing instruments in clean zones separated from the dirty zone			
Using chemical process indicators during sterilization to see if cycle was complete			
Use of air evacuation tests for prevac postvac autoclaves			
Weekly sterilization monitoring using biologic indicators (spore strips)			
Measuring chemical efficacy, if using FDA cleared immersion sterilants or high-level disinfectants			
Servicing of reprocessing equipment based on manufacturer's recommendation			
Storage of clinical supplies in clean dry areas and containers			
Use of dental unit water system contamination control agents (for biofilms and treatment water)			
Use of sterile water and sterile device for surgical procedures requiring irrigant/water			
Radiological safety and related issues			
Periodic review and updates with respect to existing and new clinical procedures and devices			

Patient safety; Employee safety; Safety of patient and employee

Table 3: Variables addressing OSHA's bloodborne pathogens

(Check if these variables are addressed in your practice)	*Yes*	*No*	*N/A*
All required personnel trained in OSHA's bloodborne pathogen standards			
All required personnel trained in OSHA's hazard communication standards			
All required personnel trained in building and equipment safety (including fire safety)			
Documentation of training in the above standards, dates and extent of training			
Documentation of annual updates in safety standards after initial comprehensive training			
OSHA posters and labor regulations and laws posters displayed in the clinic			
BBP: Written exposure control plan that includes: • Exposure determination and categorization of employees and contractors based on risks • Implementation dates of the plan, including annual and periodic updates changes • Annual review of infectious disease epidemiology, transmission and preventive measures • Methods of compliance to reduce risks of exposure • Documentation of the process			
Medical record opened for all employees and kept in a secure place and maintained			
Immunization of employees against childhood and other immunizable diseases			
All employees provided HBV vaccination within 10 working days			
Employee refusal of HBV series documented with a disclaimer/waiver from the employee			
Immunization records available in the employee medical chart including know health status			
Training and use of universal/standard precautions by all employees			
Antimicrobial soaps available for all employees and employees trained in handwashing techniques			
Utilization of engineering control and training in work practice controls against BBP			
PPE provided to all employees and in all needed sizes and all employees trained in using PPE			

Sharps collection systems available in each clinic area and should never be over-filled			
Single-use-disposable PPE used in accordance with standards-of-care/safety			
Safe handling of sharps (recapping should be single handed scoop tech)			
Training in decontamination of surfaces and equipment			
Training in the handling and disposal of regulated wastes			
Differentiation between house keeping *vs* clinical duties			
Laundering *vs* use of disposable clothing including understanding limitations of clothing/PPE			
Determination of an exposure and availability of an approved first aid kit			
Postexposure evaluation and follow-up including referral to a healthcare provider for care			
Training in the use of biohazard labeling (NFPA) for bloodborne pathogens			

Patient safety; Employee safety; Safety of patient and employee

Table 4: Variables addressing OSHA's hazard communications

(Check if these variables are addressed in your practice)	*Yes*	*No*	*N/A*
Hazard communications: • Develop and implement a hazard communication program • List hazardous chemicals and organize MSDS • Label containers with appropriate hazards • Train employees in recognizing and controlling chemical hazards in the workplace			
Inventory of hazardous chemicals including location of the list and MSDS			
Develop, organize, read and understand the material safety data sheet for each chemical			
Labeling of containers and devices having chemicals including primary and secondary containers			
Appropriate use of PPE while handling chemicals			
Engineering and work practice controls to reduce the exposure to chemicals			
Utilization of certain chemical monitoring devices to measure chemical hazards			
Storing and maintaining chemicals based on chemical safety requirement			
Emergency procedures in case of exposure to chemical hazards including eyewash and first aid			
Disposal of regulated chemicals and clean-up protocols for chemical spills			
Monitoring of personnel, when exposed, to chemical or radiological hazards			
Training in the use of biohazard labeling (NFPA) for chemical hazards			

Patient safety; Employee safety; Safety of patient and employee

Table 5: Variables addressing OSHA's building, equipment and fire safety

(Check if these variables are addressed in your practice)	*Yes*	*No*	*N/A*
Fire safety plan and training			
Automatic sprinklers installed and inspected			
Fire extinguishers professionally installed, maintained and inspected regularly			
Evacuation plan including head count and first aid			
Sufficient doors and exits with lighted signs and free from blockage			
Gas cylinders use, maintenance, storage and transportation and other compressors			
Approved eyewash stations, maintenance and training in its use			
Trash bins and waste receptacles used appropriately (regulated *vs* common waste)			
First aid kit and other emergency medicines available, maintained and replaced when used			
Electrical safety including the use of GFCI, grounding, circuit breakers and one device per socket			
Maintenance of building safety according to local codes, including fixing physical hazards			
Use of approved step ladders (ANSI/OSHA)			
Radiation safety including periodic checks for leaks and use of personnel monitoring devices			
CPR devices including AEDs (training, maintenance and replacement)			

Patient safety; Employee safety; Safety of patient and employee

While these variables, within published guidelines, may fall under specific infection control standards or federar employee safety rules, they may affect both categories with respect to risk management. It is essential to go over these variables and assess whether they are being followed or not followed within the practice or whether they are not applicable to the given practice. If any of these variables are applicable to the practice and not being followed, the clinic should employ these practices as soon as possible. One may modify, add or remove the variables based on the idiosyncrasy of each type of practice. Although patient and employee safety are universal, the codes, guidelines and regulations vary from place to place. One should refer to the local standards and regulations and update the variable list as changes are published.

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