Guide for Safety and Infection Control

For Oral Healthcare Missions

An education and training tool for humanitarian dental care workers

OSAP
Dentistry's Resource
for Infection Control & Safety

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An education and training tool for humanitarian dental care workers

An education and training resource
prepared by OSAP —
the Organization for Safety and Asepsis Procedures

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Guide for Safety and Infection Control for Oral Healthcare Missions

OSAP is the Organization for Safety and Asepsis Procedures. Founded in 1984, the non-profit association is dentistry's premier resource for infection control and safety information. Through its publications, courses, website, and worldwide collaborations, OSAP and the tax-exempt OSAP Foundation support education, research, service, and policy development to promote safety and the control of infectious diseases in dental healthcare settings worldwide. For more information on OSAP activities, call 800-298-OSAP (410-571-0003), email office@osap.org, or visit the organization's website at www.osap.org.

Introduction to this Guide

Welcome to OSAP's *Guide for Safety and Infection Control for Oral Healthcare Missions*. Before beginning, you must understand the scope of the material presented in the coming sections. Each mission, each area of the globe, presents its own challenges for visiting healthcare workers. An understanding of both the benefits and limits of this guide is necessary to help you and your fellow travelers best prepare for your missions.

This guide is...

- ... a practical guide to providing safe dental care in nontraditional settings.
- ... a resource for healthcare providers who participate in humanitarian missions that provide dental care to individuals in nontraditional settings. These settings often lack the necessary resources or modern amenities that are found in dental practices in the United States.
- ... a compilation of suggestions provided by persons who have actually experienced and participated in humanitarian missions.
- ... a useful, sequential presentation of information that should be tailored to the specific mission at hand.

This guide is not:

- ... a comprehensive planning document for all missions and all aspects of a mission. Rather, it provides guidance for ensuring the health and safety of mission participants, their dental patients, and the community at large.
- ... an exhaustive list of Dos and Don'ts. You'll find plenty more on your own.
- ... a be-all, tell-all book of best practices. Discovered a tip we omitted? Found a way to smooth out a particularly rocky part of trip preparation? Please let us know. By working together and sharing successful strategies, we help ourselves, our colleagues, and our patients.

Using this Guide

OSAP's *Guide for Safety and Infection Control for Oral Healthcare Missions* includes detailed information on everything from trip and mission planning to writing a post-mission report. Checklists ensure that all aspects of the mission are considered during the development stage. Use the sample forms in the appendices for recording important health information about workers and patients. Forms also can be completed and printed from the CD supplied with this guide.

Sample forms include:

- a Site Evaluation Checklist,
- a comprehensive Main Checklist,
- an Instrument Calculation Tool,
- a Worker Health Information Form,
- an Emergency Medical Release Form,
- a Patient Medical History Form, and
- an After-Action Mission Report Template

Asking the important questions is the first step in planning. Use sample forms to guide you as you collect information.

Now that you know what's coming, let's proceed....

Notes

Advance Preparation

In preparing for your trip, considering the locale and its resources, food hygiene, population needs, and transporation requirements can help you pack for safety.

Local Resources

When planning for a trip to a site that has not previously been used for a healthcare mission, ask and answer important questions:

- ❍ Is the location urban or rural?
- ❍ What type of structure will be used as the treatment center (for example, hut, tent, community hall, church)?
- ❍ What are the sleeping and eating arrangements for the team members?
- ❍ Will you need to take an electrical generator?
- ❍ What is the local water quality?
- ❍ Do you need to take drinking water or bring water treatment chemicals?
- ❍ What are the local toilet and sewage disposal facilities?
- ❍ Are local sources for dental materials and supplies available?
- ❍ Are needles, affordable fluoridated toothpaste, toothbrushes, anesthetic, and medication available?

Working in a new geographic area can expose workers to new health challenges.

For an extensive list of trip-planning considerations, see the Main Checklist (Appendix A, page 23).

Accommodations

Find out where the dental care team will be staying and what supplies will be available. For example, are mosquito nets supplied, or will you need to pack some? Ask about laundry. It can impact the amount of clothing to pack and in turn, the bulk of luggage each person will need.

Food Hygiene

Ensure that facilities are available for safe food storage, preparation, cooking, and refrigeration, and plan your meals accordingly. Gastrointestinal infections are the most frequent cause of illness on humanitarian missions. Taking one over-the-counter upset-stomach/antidiarrhea tablet (active ingredient: bismuth-subsalicylate) each day prophylactically is reported to have helped many people avoid illness.

Check with your primary physician before leaving on the trip to determine if antibiotics are indicated as a precaution in case of gastrointestinal infection on the trip.

Food Hygiene Basics

- ❍ Avoid eating uncooked vegetables, fish, or shellfish.
- ❍ Wash fruits, vegetables, and other foods in previously boiled water before preparing.
- ❍ Always use a clean surface for food preparation.

Local Advance Arrangements

Ensure that advance arrangements have been made for arrival and set-up at the locale.

For info on VISA requirements, contact the appropriate foreign consular office from the listing at *www.state.gov/s/cpr/rls/fco/*

- ❍ Have your letter of invitation or support from local sponsors.
- ❍ Make a site visit, if possible.
- ❍ Obtain a special permit to practice, if necessary.
- ❍ Have a current VISA and passport. (The U.S. Department of State maintains a list of foreign consular offices in the U.S. Visit *www.state.gov/s/cpr/rls/fco/* for information. Contact the appropriate office for VISA requirements, travel information, and travel restrictions for your destination country.)
- ❍ Identify available resources (electricity, potable water, food, accommodations, etc.)
- ❍ Review waste disposal resources for the area.
- ❍ Identify sanitary facilities for restrooms, showers, etc.
- ❍ Identify sources for referral for advanced care.
- ❍ Identify and plan for the needs of the local population. (For example, if the need is mostly for extractions, handpieces and portable units may not be necessary.)

The Main Checklist in Appendix A (page 23) provides additional guidance.

Population Needs

Estimate the number of patients you expect to treat. The estimated number of patients that can be treated and the type of treatment to be provided affects the number and type of instruments, equipment, barrier precautions, and materials you will need for your mission. Use Appendix B, OSAP's Instrument Calculation Tool (page 27), to determine the amount of materials needed for your mission stay. Remember: Factors such as available resources, the time required to process instruments, the capacity per cycle of cleaning and sterilization equipment, and the number of staff available for instrument processing also should be considered in estimating the patient count.

Creating a Patient Chart

For the same reasons they are mandatory in your home country, an individual patient record is necessary for care provided during missions. Dental care workers must be able to account for examination findings and the care delivered. The sample Patient Medical Review Form (Appendix D, page 31) can serve as a baseline for your patient record.

Use the sample Patient Medical Review Form (Appendix D, page 31) as a baseline for your patient records.

Request assistance in translating your chart to the primary language of the locale you are serving. If possible, have an interpreter available to assist patients in completing the medical history form, or have the form translated into the language of the local population.

At minimum, obtain for each patient:

- ❍ **Personal information**, such as name and address/location.
- ❍ **Vital signs**. Record vital signs as part of the patient intake process. **NOTE**: Be sure to include adequate supplies such as blood pressure devices in your supply list.
- ❍ **Medical history**. While standard screening questions may be impossible for your patients to understand, a basic set should be included. Appendix D (page 31) provides a sample Patient Medical Review Form that can be translated into the local language.
- ❍ **Treatment record**. Keep track of treatment provided to each patient on a standard treatment record form.

Transportation Requirements

Transportation requirements become easier to estimate once you have chosen a site and know the number of people traveling. However, a number of other criteria can have an impact on your transportation needs. To a great extent, the mode of transportation and type of location determines the materials and equipment you can bring with you. For example, when traveling to remote locations that require air and ground transportation, the mode of ground transportation determines the types of equipment and supplies that may be reasonably carried to the location. When traveling on small planes with strict weight limits, you must carefully calculate the weight of materials that you intend to bring and adjust accordingly. Because transportation requirements can limit the number of supplies you bring with you, it also puts limits on the number of patients and types of treatment you can provide at your destination. As such, let the most basic forms of transporation you will be using drive the types of items you bring.

Transportation restrictions can limit the amount of supplies you're able to bring and in turn, the number of patients you can treat during the mission.

For your first mission — or for your first mission to a specific region or location — start small. Select a site that is relatively easy to reach. As you gain experience, you may wish to progress, choosing more challenging journeys to more remote areas.

Safe Packing

Airlines require that sharps be packed with checked luggage; such items are not allowed in carry-on luggage and will be confiscated at the airport security checkpoint.

Have each team member pack their personal sharps in a small, labeled plastic container. Place all these containers in a single check-in container so they can be easily distributed at the destination. If the sharps are not checked-in, they will be confiscated by security.

Supplies and Medications

Keep an inventory of everything you take to ease your passage through airport security and customs. If you decide to leave things behind, don't forget to cross them off your inventory. List all the drugs you are carrying. Accounting for what you use can be important to some of the donors and suppliers who discount their products for humanitarian aid projects.

Notes

Team Health and Safety

Before your trip, you and your team members should visit your primary physicians and dentists to be sure you are in good overall health and require no special medical management. Inform your physicians that you will be traveling to an area with limited resources and ask about any health advisories for the area. Additional medications, such as antibiotics and antidiarrhea medications, may be recommended.

Ask your physician if health advisories are in effect in the areas where you will be traveling.

Routine Immunizations

Before traveling, all workers should receive routine vaccinations or have documented immunity to hepatitis A, poliomyelitis, hepatitis B virus, measles (rubeola), German measles (rubella), tetanus, diphtheria, whooping cough (pertussis), and mumps. Update team health information, including vaccination information, at least annually.

Special Considerations

Working in a new geographic area can expose workers to new health challenges from different disease vectors. Malaria, Dengue fever, and yellow fever are among the most common diseases transmitted by mosquito bite. To determine current precautions for the location you're visiting, check the Centers for Disease Control and Prevention (CDC) Traveler's Health website (*www.cdc.gov/travel*) at least two months before departing for your trip.

Malaria prophylaxis should begin one week before your trip and continue for one month after returning. No medication is available for Dengue fever prophylaxis, though like malaria, the disease also is carried by mosquitoes. Mosquito repellents with 30% DEET are recommended when traveling to areas where Dengue fever is common. Covering exposed skin also is encouraged.

Immunizations for Travelers

- ❍ Hepatitis A
- ❍ Poliomyelitis
- ❍ Hepatitis B
- ❍ Measles (rubeola)
- ❍ German measles (rubella)
- ❍ Tetanus
- ❍ Diphtheria
- ❍ Whooping cough (pertussis)
- ❍ Mumps

A vaccine is available to prevent yellow fever. The vaccine must be administered at an approved yellow-fever vaccination center. Depending on where you are traveling, you may need a completed International Certificate of Vaccination, signed and validated with the center's stamp at the time of inoculation. The certificate becomes valid 10 days after administration of the vaccine and remains so for up to 10 years.

Worker Health Information

Copy and complete a Worker Health Information Form (Appendix E, page 33) before leaving on the mission. One person on the team should be assigned the primary responsibility for overseeing the medical needs of the team members, including maintaining the confidential medical history forms for each member. Keep health

Update worker health information — including current vaccinations — at least annually.

Keep worker health records in a safe location and restrict access to a need-to-know basis.

records in a safe location and restrict access to a need-to-know basis.

Update individual health records at least annually to ensure that they reflect the current health status of each team member. In addition to the medical history, each oral health mission worker should complete an Emergency Medical Release Form (Appendix F, page 35) authorizing, by signature, medical treatment by emergency personnel, a physician, or a medical treatment facility in the event that permission for treatment cannot be provided or obtained in a timely manner.

Prepare for Emergencies

Before leaving on the trip, prepare for the possibility that someone may become seriously ill and require a level of care beyond the capacity of the local facilities. Make provisions for rapid evacuation. Be sure several team members know the emergency plan, and list appropriate telephone numbers in several places and with different people.

Prepare emergency kits and keep them on hand in treatment areas. Stock kits with:

Prepare emergency and first aid kits and keep them on hand in patient-care areas.

- ❍ pocket masks with one-way valves for cardiopulmonary resuscitation (CPR);
- ❍ emergency medications (may be purchased as a kit, such as those used in dental offices);
- ❍ epinephrine;
- ❍ injectable diphenhydramine and an over-the-counter antihistamine; and
- ❍ syringes.

In addition to emergency and first-aid kits, be prepared to manage occupational exposures to blood and body fluids. Necessary postexposure supplies include:

- ❍ hepatitis B immune globulin (HBIG) and vaccine against hepatitis B virus (HBV) for exposures involving workers whose response to the HBV vaccine series is unknown;
- ❍ OraQuick rapid HIV-1 antibody tests (made by OraSure) for source-patient and baseline worker testing for HIV (**NOTE**: Someone on the team must be qualified to administer the test);
- ❍ combination zidovudine-lamivudine drugs and protease inhibitors for postexposure prophylaxis (to be used as warranted). **NOTE**: Check with an expert before the mission to determine the appropriate drug combinations for the most likely exposure scenarios, or ensure that an expert will be available during the mission. Alternatively, consult the U.S. Centers for Disease Control and Prevention's postexposure prophylaxis hotline: 888-448-4911.

Make sure that all team members have discussed the risks and side effects of postexposure treatment with a qualified healthcare professional before leaving for the mission.

Advance Training

Before departing, ensure that team members are prepared to handle injuries and emergencies.

CPR. Ideally, all healthcare providers participating in the mission should be trained and currently certified in CPR. Both the Red Cross and the American Heart Association certify CPR courses, which are widely available in the United States.

For the most up-to-date travel warnings, visit the U.S. Department of State website at *http://travel.state.gov/travel/warnings_current.html*.

Stock medical emergency kits with pocket masks with one-way valves. Consider portable external defibrillators (AEDs). Many of these devices are available with a long-life battery, so they can be used in areas without electricity. These devices are becoming more affordable, and they perform superiorly to CPR.

First aid. In addition to first aid and medical supplies, ensure that a number of individuals on the team are formally trained in first aid. Medical facilities often are not available, are difficult to reach, or are inadequate for safe delivery of care for minor injuries. Training in first aid is available from the American Red Cross and numerous private organizations.

Local Safety Concerns

When traveling to unfamiliar locations, personal safety is of utmost importance. Understanding local cultural norms, political situations, crime statistics, and recent history of riots or terrorism is essential. Specific information regarding issues of personal safety when traveling internationally is available from the U.S. Department of State Bureau of Consular Affairs (*http://travel.state.gov/travel/warnings_current.html*). Disseminate such information to all trip participants.

Notes

Infection Control

In dentistry, diseases may be transmitted through four possible routes:

- ❍ direct contact with microorganisms from an infected person to a host that is not immune;
- ❍ indirect contact with contaminated objects, such as instruments, items, or surfaces;
- ❍ droplet transmission, in which spray or spatter containing microorganisms travels a short distance before settling on mucous membranes; or
- ❍ an airborne route, by which evaporated droplets ("aerosols") suspended in the air are inhaled.

For a disease to be transmitted, a number of conditions must be present. This "chain of infection" includes:

- ❍ A pathogen in sufficient numbers to cause an infection, such as viruses like HIV and hepatitis B or bacteria like *Salmonella*.
- ❍ A place for the pathogen to reside and multiply (a "reservoir"), for example, the bloodstream or mucous membranes, a Petri dish, or even a dental unit waterline.
- ❍ A way for the pathogen to leave its reservoir and reach a new host (that is, a mode of transmission), such as through a cut from a contaminated instrument, contact of mucous membranes with a contaminated hand, or inhaling contaminated aerosols.
- ❍ A proper portal of entry into a new host, that is, an appropriate route for the pathogen to enter the body (for example, for a bloodborne pathogen to cause infection, it needs a way to enter the bloodstream, such as through a break in the skin).
- ❍ A person who is not immune to the pathogen. Vaccination against a pathogen or prior exposure to it may provide immunity to a disease.

Infection control strategies interrupt this cycle, thus preventing disease transmission.

Breaking the "chain of infection" prevents disease transmission.
Keep this in mind when planning infection control strategies for your mission.

Planning for Infection Control

Carefully establishing, planning for, carrying out, and assessing your mission infection control protocol helps ensure that patients and team members remain safe.

Prepare before leaving and assess upon return. Use the Main Checklist (Appendix A, page 23) as a basis for planning your infection control protocol and for assessing its effectiveness at the end of your trip. Such follow-up provides valuable information to help you improve the process on future aid trips.

Setting out the site. Working in a nontraditional setting presents its own set of challenges; making the area as comfortable and safe as possible helps the team stay focused and productive. Patient positioning, adequate lighting, access to supplies, freedom from excessive dirt and noise, and other factors should be considered in selecting the set-up for patient treatment.

Basic set-up. First, consider where you can best define the operating area, particularly the exact position in which you want patients' heads with regard to natural or artificial light. Arrange everything else around this position.

The operating area must have controlled access. It is undesirable and potentially unsafe

The Principles of Infection Control ... In Action

Take action to stay healthy

- Get immunized
- Report occupational injuries and exposures immediately
- Follow the advice of the medical care provider evaluating your occupational exposure
- Wash your hands often

Limit the spread of contamination

- Set up the operating field before starting treatment; unit-dose supplies
- Establish "clean" and "dirty" areas for storage and processing
- Cover surfaces that will be contaminated
- Minimize splashes and spatter
- Properly dispose of all waste

Avoid contacting blood / body fluids

- Wear gloves, protective clothing, and face and eye protection
- Handle sharps with care
- Use safety devices as appropriate
- Use heavy gloves to protect hands during cleaning of sharp instruments

Make objects safe for use

- Know the different decontamination processes
- Read chemical germicide labels
- Monitor processes to make sure they're working as they should

to allow onlookers to be present in the treatment area. Rope off the most suitable area if no wall or other barrier is available. Although people can duck under ropes, once it is clear to onlookers that they should stand back, they usually comply.

Next, consider the traffic flow to and from the operating area. Try not to have those who have been treated leaving through a crowd of waiting patients.

Find a place with a suitable writing surface where patients can register, provide a short medical history, and have vital signs recorded. Position this area away from others, so conversations can't be overheard.

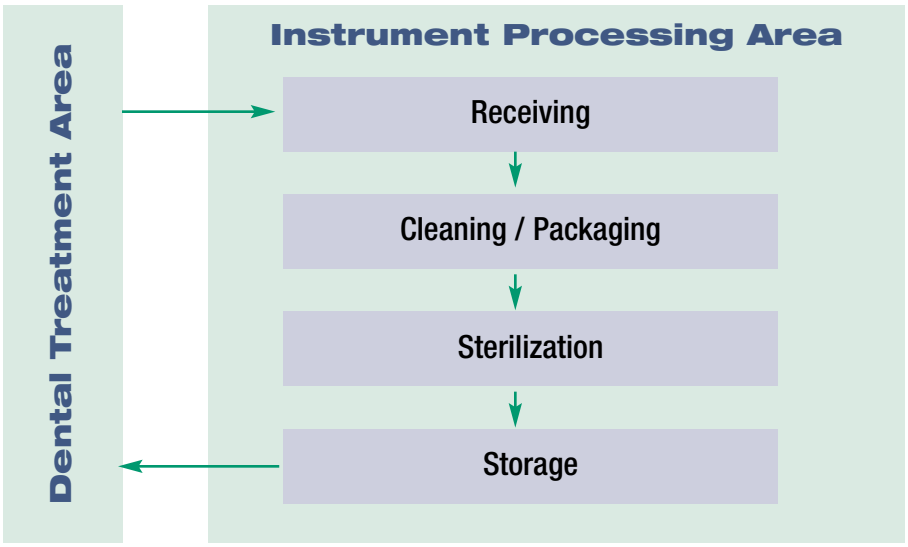
Find safe, adequate instrument and supply storage to protect these valuable items from contamination and theft. They also need to be conveniently placed so that when stocks in the operating area are low, replenishments from the store are within easy reach.

Instrument storage. Protect stored instruments from moisture or contact with a contaminated object. Keep wrapped sterile instruments in their packaging until they are ready for use. Store unwrapped instruments in a covered container that is clearly marked to indicate that the instruments have been sterilized or high-level disinfected. Ensure that contaminated instruments are never stored in the same manner as those that are ready for use.

Treatment area. The operating area in many mission situations bears little resemblance to a modern dental office. Sites are usually informal and may not have the same protection from the elements that you are used to. Whenever possible, locate a building such as a community hall or church that allows the use of indoor space for treating patients.

First clean the floor and remove any obstacles that might cause operators or patients to trip. Sweep up obvious dirt. Clean all flat surfaces, particularly those that will come

Flow Process for Instrument Management



into contact with instruments or devices that will be used intraorally. If possible, cover surfaces with surgical drapes or other clean material that can be changed between patients.

Clearly establish boundaries for areas intended for "clean" items and the area designated for "dirty" items.

Clearly establish the boundaries between the areas intended for "clean" items (such as supplies, sterilized instruments, and dental materials) and the area designated for "dirty" items that have been contaminated through contact with blood or saliva.

Instrument processing area. Instrument processing requires planning to ensure that instruments are safely moved from the location of use through cleaning, sterilization, and storage. Whenever possible, set up a specific area for instrument processing that clearly separates contaminated items from those that have been processed for reuse on patients. A flow that allows instruments to sequentially move from receiving through cleaning, packaging, sterilization, and storage is ideal.

Precautions During the Delivery of Dental Care

The cornerstone of infection control is the use of *standard precautions*, which considers all body fluids (except sweat) from all patients to be potentially infectious. Use infection control precautions to protect workers from exposure to blood and patient oral fluids, including saliva. Additionally, use precautions to prevent cross-contamination of body fluids from patient to patient. Finally, take precautions to prevent exposures from workers to patients.

Careful hand hygiene, use of personal barriers, and safe handling and disposal of sharps can protect you, your team members, and your patients.

Where local water quality is questionable, use an alcohol-based hand sanitizer for hand hygiene.

Hand hygiene. Handwashing is the single most important infection control activity in health care. Always wash your hands before gloving and after gloves are removed. Where the local water quality is questionable, use an alcohol-based hand sanitizer on hands that are not visibly soiled. Although these products are excellent antimicrobials, they are very poor cleaners and are only effective on hands that are free of debris. If hands are visibly soiled, clean them first with previously boiled water or a premoistened towelette that contains a cleaning agent. All team members should keep a supply of alcohol-based hand sanitizers for clinical and personal use.

Personal barriers. During dental procedures, use personal barriers — masks and eye protection, gloves, and gowns — to protect workers' skin, clothing, and mucous membranes from contact with patients' oral fluids. Determine the degree of barrier protection needed by assessing the types of procedures that each team member performs.

Gloves. Wear gloves throughout patient treatment. If oral surgery is to be performed, use sterile surgeon's gloves. When decontaminating instruments,

use heavy-duty gloves to help avoid puncture injuries when handling contaminated sharp instruments.

Change gloves between patients. Hands are the primary point of contact from worker to patient, so the risk of cross-contamination is considered extremely high.

Keep a supply of alcohol-based hand sanitizers for clinical and personal use.

Gowns. Wear gowns when performing procedures that may produce spray or droplets from the patient's mouth. Regular clothes are not an appropriate barrier for clinical care. Instead, wear scrubs or other easily laundered clothing.

Select overgarments that protect workers' skin and street clothes. A variety of gown and jacket styles are available. In hotter climates and locations where laundry facilities are not readily available, consider using lightweight paper disposable gowns. Soiled gowns have not been implicated in disease transmission, so it is appropriate to use one gown for multiple patient contacts. Discard the gown when it becomes soiled or overtly contaminated.

Masks and eye protection. Wear masks and eye protection to protect the mucous membranes of the eyes, nose, and mouth during procedures that may generate spray or droplet contamination from the patient's oral fluids. The risk of bloodborne disease transmission from a mucous membrane exposure to infected body fluids is believed to be lower than the risk from percutaneous exposures, but mucous membrane exposures have resulted in transmission of HIV, hepatitis B virus (HBV), and hepatitis C virus (HCV) to healthcare workers.

Personal barriers are a vital part of worker and patient safety.

Select eye protection based on the type of procedures and devices being used. If you anticipate spray or spatter (such as through the use of air-driven handpieces), wear eyewear with side shields for the best protection. Some disposable masks have shields attached. These may be used for especially exposure-prone procedures (for example, surgical extractions).

Avoid touching masks and eyewear during dental procedures, and ideally, change your mask between patients.

In hotter climates and in areas where laundry facilities are not available, lightweight, disposable paper gowns may be preferable to cloth gowns.

Exposure Prevention

Many needlesticks and other cuts can be prevented by using safer techniques (for example, using needle recappers instead of replacing needle caps by hand), disposing of used needles in appropriate sharps disposal containers, and using safer devices. Exposures to the eyes, nose, mouth, or skin may be prevented by using appropriate barriers (gloves,

eye and face protection, and gowns) when contact with blood is expected.

Preventing exposures to body fluids prevents disease transmission.

Always handle used sharps carefully, and discard disposable sharps (such as blades and needles) in a rigid container to prevent accidental puncture injury.

In addition to the precautions previously discussed, some practices that can help prevent exposure to potentially infectious body fluids include:

- ❍ Using a mirror or retractor instead of your fingers to retract tissue;
- ❍ Removing dental burs from the handpiece before replacing the instrument on the cart;
- ❍ Maintaining a container for used sharps in the treatment area to allow disposal of needles, blades, and other sharps immediately after use;
- ❍ Announcing instrument passes and carefully transferring instruments between operator and assistant;
- ❍ Minimizing spatter by using rubber dam and high-velocity evacuation (if available);
- ❍ Using safety devices such as self-sheathing needles, retractable scalpels, and needle holders; and
- ❍ Carefully handling sharps instruments during processing procedures.

Despite infection control precautions, blood exposures may occur, particularly when working in unfamiliar field conditions. Make sure that all team members have documentation showing they have received the HBV vaccine series.

Be prepared to respond to a blood exposure on-site.

Designate a team member familiar with postexposure protocols to receive reports of any worker exposures to blood and initiate appropriate actions. All team members should be trained in the importance of reporting exposures immediately so that decisions about treatments can be made quickly. If postexposure drugs are indicated, their side effects should be monitored by someone qualified to make treatment decisions.

Immediately upon returning from the mission, any team member who sustained a blood exposure should consult with a qualified healthcare professional for further follow-up. Follow current public health guidelines for postexposure management as outlined in "Treatment for Exposures" (Appendix G, page 37).

Exposure Response

Immediately report any exposure to blood to the team member responsible for managing exposures. Prompt reporting is essential. If postexposure treatment is recommended, it should be started as soon as possible.

When an exposure occurs...

- ❍ Provide immediate care to the exposure site.
- ❍ Wash needlestick injuries and cuts with soap and water.

❍ Flush mucous membranes with a sterile solution of water or saline. If sterile solutions are not available, use clean potable water.

No data have demonstrated that using antiseptics or squeezing a wound reduces the risk of transmission of a bloodborne pathogen. Using a caustic agent such as bleach is clearly not recommended.

Interview and test source patient if a blood exposure occurs.

Review health information with the source patient and if possible, test the patient for HIV. Rapid HIV tests (such as OraSure's OraQuick) are available today, delivering in minutes rather than days important diagnostic information that determines the need for postexposure prophylaxis (PEP). Part of the trip planning process should be ensuring that at least one member of the team is familiar with exposure incident recommendations and that PEP medications currently recommended for exposure incidents are available.

At the end of the mission... Complete an After-Action Mission Report (Appendix K, page 45). The information gleaned from this report can help ensure that necessary changes are made for future trips. Also at the end of the trip, assess the health of the team and ensure that patient follow-up is completed as necessary.

Follow-up for team members. A daily log can help remind you of incidents that may have impacted team member's health. If any such incidents occurred, appropriate follow-up may be indicated, such as a doctor's visit. Remember: Team members who had taken malaria prophylaxis need to continue the medication for one month after leaving an area where malaria is a risk.

Patient follow-up. You may need to follow-up on specific patients who have been treated either to ensure that they have been able to continue their medication or have managed to get the consultation you have recommended. Keeping in touch can help people at the site remember instructions. It also can be a continuing support for health workers in isolated communities; it provides them with a resource for help and information in the future.

Categories of Patient-Care Items

Category	Definition	Process by	Examples:
Critical	Penetrate soft tissue or bone	Sterilization	Surgical instruments, periodontal scalers, surgical dental burs
Semicritical	Contact mucous membranes or nonintact skin	Sterilization or high-level disinfection	Dental mouth mirrors, amalgam condensers, dental handpieces
Noncritical	Contact only intact skin	Low- to intermediate-level disinfection	X-ray head/cone, blood-pressure cuff, facebow

Sterilization and Disinfection

In nontraditional settings, the proper processing of instruments often presents one of the greatest challenges to the healthcare team. For purposes of determining the appropriate method of processing used instruments and devices, divide items into three broad categories: critical, semicritical, and noncritical. *Critical instruments* penetrate bone or soft tissue; *semicritical instruments* contact mucous membranes or nonintact skin; and *noncritical instruments* contact only intact skin.

If minimal asepsis cannot be provided, do not proceed with treatment. Doing so could compromise the health and safety of your patients.

Whenever possible, heat sterilize all critical and semicritical instruments, or use disposable versions of these items. If the instruments or the setting do not permit heat sterilization, semicritical items may be high-level disinfected between patients. Noncritical items require only low- to intermediate-level disinfection.

If minimal asepsis cannot be provided, do not proceed with treatment.

Three types of portable heat sterilizers are available: steam, dry heat, and chemical-vapor sterilization. Each has its advantages and disadvantages, but overall, the steam autoclave is preferred because it is versatile, reliable, and does not require special solutions. Dry heat sterilization may be used, but its high temperatures can damage some equipment (such as plastics and handpieces). Chemical-vapor sterilization requires that a chemical product be used in conjunction with the sterilizer. The byproduct of sterilization with this method of processing is a "spent" solution of flammable liquid that requires safe disposal.

If you are returning to an area on a regular basis, have access to electricity, and are able to safely leave equipment behind, a heat sterilizer that can remain at the site is the preferred means for processing instruments.

Alternative methods for heat sterilization. An alternative to commercial sterilizers, a pressure cooker can be used in any location where a consistent heat source (such as a gas burner) is available. Pressure cookers can be used for sterilization if they can reach and sustain a 250ºF (121ºC) temperature at 15 pounds of pressure for 30 minutes.

If an autoclave or dry heat sterilizer is not available, a pressure cooker acts as a suitable alternative.

To use a pressure cooker to sterilize instruments:

- ❍ Choose a pressure cooker of sufficient size to hold the instruments you wish to sterilize.
- ❍ To keep the instruments raised out of the water, place a metal rack (or the rack that comes with the pressure cooker) on empty tin cans to elevate.
- ❍ Place water in the bottom of the pressure cooker, following manufacturer's instructions for the amount of water needed for a 30-minute boil.
- ❍ For proper sterilization, boil 30 minutes from the time the weight on top of the

pressure cooker begins bouncing to let off steam. After 30 minutes, turn off the heat and let the instruments cool. The inside of the pressure cooker remains sterile until it is opened.

❍ Monitor the cooker once it begins to emit steam. If the steam stops, turn off the heat and permit the cooker to cool down before touching it.

High-level disinfection. When heat sterilization is not possible, high-level disinfection (HLD) may be an option, depending on the nature of the device or instrument. Although many products are cleared by the U.S. Food and Drug Administration (FDA) for use as HLDs, most contain chemicals that present health and environmental hazards, particularly in areas where engineering controls and hazardous waste disposal services are unavailable.

Set up and label containers for disinfecting instruments.

Many HLD products contain glutaraldehyde, a sensitizing chemical that also presents issues of environmental contamination with inappropriate disposal. More recently, HLDs that contain 7.5% hydrogen peroxide have been introduced. These formulations do not have the undesirable characteristics associated with many of the traditional HLDs. Appendix I (page 41) provides a summary of sterilization and high-level disinfection methods. Of course, whenever possible, choose heat sterilization over chemical disinfection/sterilization.

Although chemical HLDs require no electricity, hauling heavy containers of chemicals still poses a challenge to the traveling oral healthcare worker. Depending on the mode of transportation you are using, attempting to bring gallons of germicides may be impractical. As such, use HLD by boiling when heat sterilization is not possible.

If heat sterilizers are not available, consider boiling for 20 minutes to high-level disinfect instruments for reuse.

To disinfect instruments using boiling water:

❍ Place a large metal container of water over a heat source that will provide sufficient continuous heat. Place the container in an area that will be monitored to ensure the safety of the patients, visitors, and the healthcare team.

❍ When the water comes to a boil, fully immerse the instruments in the boiling water. **NOTE**: Do not begin the process until the water has begun boiling.

❍ Cover the container with a lid.

❍ Boil instruments at a gentle rolling boil for 20 minutes. If the water is allowed to boil too vigorously, it may cause damage to the instruments as they move against each other. **NOTE**: Do not add water once timing begins. If additional items are added, restart the timing so all instruments are immersed for a full 20 minutes. Water may be reused for additional cycles once instruments have been removed, additional water has been added, and water is brought back to a boil.

To minimize white lime deposits on the pot or instruments, add 3 tablespoons of vinegar to the water, boil for 10 minutes to precipitate lime, then add instruments.

Highspeed handpieces are semicritical items that cannot be boiled or immersed for HLD. If sterilization facilities are not available, avoid performing procedures that require the use of a highspeed handpiece.

If HLD as a minimum standard for processing instruments is not feasible, do not use critical or semicritical instruments unless presterilized sets can be provided for each patient or single-use disposable instruments are available.

Storing Instruments

Create an instrument storage system that protects instruments from moisture and contact with contaminated objects. Clearly mark all storage containers to differentiate between instruments that have been sterilized or high-level disinfected and those that are contaminated and waiting to be processed. (For details, review page 13, "Instrument storage.")

Use a storage system to protect instruments from contamination

Waste Management and Disposal

Waste management is an important aspect of planning and carrying out your healthcare mission. In areas with few resources for waste disposal, you must have an alternate plan to avoid contributing to the pollution of land and water. It also is important to avoid exposing the local population to waste that contains sharp contaminated items or other materials that may be capable of releasing blood or saliva when handled.

Waste Management

Manage waste to avoid contributing to local pollution and exposing residents to contaminated sharps and other potentially infectious items.

Waste bags and bins. Keep waste bags and bins readily available in all areas. Keep one container near the patient chair for gauze and other debris. At the end of the day, place smaller waste bags in large, heavy-duty plastic bags for disposal. Place sharps containers in the treatment area and the instrument recycling area.

Sharps. Keep puncture-proof containers labeled with the word "biohazard" in all treatment areas. Use these containers to dispose of sharp items (such as used needles, broken anesthetic carpules, and contaminated scalpel blades and sutures) immediately after use.

Waste Disposal

Proper disposal of waste generated in the clinic depends on the type of materials you are discarding.

Regular waste. Much of the waste you generate during clinic activities falls into the category of "regular waste." Items such as gloves, paper towels, wrappings, and other materials necessary to conduct patient treatment need to be discarded appropriately. Determine how the locale manages regular waste and make arrangements to have clinic waste removed, incinerated, or otherwise disposed of along with that of the local households.

Clearly label waste that is potentially biohazardous.

Medical/biohazardous waste. Dispose of all biohazardous material in accordance with local laws. If there are no local laws, incinerate all burnable biohazard waste and bury the ash. Adding an accelerant (such as kerosene) to the waste pile before lighting helps ensure that all waste is thoroughly destroyed. Never add accelerant once the waste has been lit.

If moisture or local restrictions prevent medical waste from being burned, bury it. Choose a site downhill from any wells, free of standing water, and away from flood zones and agricultural areas. Dig a pit large enough to contain all the medical waste you expect to generate. Before leaving the mission, seal the waste pit with concrete.

Sharps. If possible, find a local medical-waste disposal service. If no such service is

available, fill sharps containers with cement and deeply bury them in a waste-disposal area away from play areas, animal grazing areas, and water before leaving the location.

Hazardous chemical waste. Because disposal of hazardous chemicals is difficult in most locations, avoid bringing these items with you. Heat sterilization, a pressure cooker, or boiling water can be used for instrument processing, eliminating the need for transporting and then disposing of chemical disinfectants. For cleaning and disinfecting clinical contact ("touch") surfaces, use premoistened wipes that contain a disinfectant registered with the U.S. Environmental Protection Agency (EPA).

If proper transport, handling, and disposal are possible, refer to the chart in Appendix I (page 41) to determine which product or process is best suited to your resources and location. Choose a product that is safe for disposal in land, is not adversely affected by extreme temperatures, has minimal health hazards, can be transported in sufficient amounts to serve the mission's needs, and has minimal environmental hazards.

Selection Criteria for Chemical Products

- ❍ Safe for disposal in land
- ❍ Not adversely affected by extreme temperatures
- ❍ Minimal health hazards
- ❍ Can be transported in sufficient quantity to serve the team's needs
- ❍ Minimal environmental hazards

Chemical products have limited acceptability in many remote locations where proper disposal and control simply are not possible. As such, consider alternatives to be the primary choice, rather than a compromise.

OSAP Main Checklist for Oral Healthcare Missions

Advance Preparation

- ❑ Make advance arrangements with local sponsors
- ❑ Obtain a written letter of support or invitation
- ❑ Perform a pre-mission site visit (if possible)
- ❑ Identify available resources

Potable water	❍ Yes	❍ No	❍ Don't know
Electricity	❍ Yes	❍ No	❍ Don't know

If no, what fuel resources, if any, are available (e.g., wood)?

_____

_____

- ❑ Perform a team health and safety threat assessment (i.e., infectious disease epidemiology)

Team Health and Safety

- ❑ Provide all personnel with a list of required clothing, personal articles, toiletries, and sundries, including sunscreen, insect repellents, and antidiarrhea medications, as appropriate
- ❑ Inform all personnel of anticipated health and safety risks
- ❑ Receive necessary vaccinations and recommended prophylactic medications (e.g., antimalaria medication)
- ❑ Distribute a trip itinerary and provide a thorough mission briefing (written or oral) prior to departure (NOTE: Appendix K, page 45, provides a mission briefing outline)
- ❑ Cancel the mission if:
  - ❍ adequate disinfection and sterilization of patient-care equipment cannot be identified or obtained
  - ❍ safe follow-up of patients cannot be established
  - ❍ any unsolvable safety hazards for the team are anticipated

Dental Equipment, Supplies, and Clinic Set-Up

- ❑ Determine the type of location (e.g., urban or rural)
- ❑ Identify treatment facility (e.g., a building, a hut)
- ❑ Identify specialized personal protective equipment as determined by a team health and safety threat assessment (e.g., NIOSH N-95 respirators for tuberculosis-endemic areas)
- ❑ Identify postexposure prophylaxis medications
- ❑ Perform a population needs assessment to determine the numbers, types, and treatment needs of patients
- ❑ Prepare a list of equipment and supplies based on the population needs assessment, available resources, and action reports from previous missions (if available)
- ❑ Prepare and print sufficient quantities of language- and culture-appropriate patient health history, consent, or other forms and materials
- ❑ Ensure that potable water is available for drinking and clinical use

continued on next page

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If potable water is not available, determine a water treatment method for making water safe for use:

❍ Boiling ❍ Filtration ❍ Chemical treatment

❑ Ensure that electricity is available, either locally or through other sources (such as a generator)

If electricity is unavailable, determine an alternative method for processing instruments

❍ Pressure cooker ❍ Boiling water over fire ❍ High-level chemical disinfection

Appropriate Waste Disposal

Make arrangements for managing:

- ❑ Sewage
- ❑ Solid medical waste disposal
- ❑ Chemical waste disposal
- ❑ Sharps disposal

Preparing for Travel and Reaching Your Destination

- ❑ Arrange for transportation and lodging for each leg on the travel itinerary
- ❑ Ensure that all team members have necessary travel documents and identification, including VISAs (where required)
- ❑ Identify size and weight restrictions for equipment and supplies based on the most limiting mode of transportation
- ❑ Ensure that all items can be safely transported by air or other modes of transportation
- ❑ Pack equipment and supplies to prevent damage or spills during transport and to meet airport security requirements
- ❑ Identify and address issues relating to customs or import duties in the host country
- ❑ Account for all team members at each transit point

Arriving On-Site

- ❑ Survey the clinical site, set-up equipment, and secure supplies
- ❑ Set up a convenient central location for processing reusable instruments and devices
- ❑ Create facilities for handwashing
- ❑ Provide infection control training and protective equipment to any local personnel assisting with instrument processing or waste disposal
- ❑ Arrange for safe and convenient collection and disposal of medical waste and hazardous items
- ❑ Familiarize team members with:
  - ❑ Site layout
  - ❑ Clinical procedures
  - ❑ Infection control practices
  - ❑ Exposure management protocols
  - ❑ Local hazards
  - ❑ Available lavatories
- ❑ Establish eating arrangements for team members

Treating Patients

- ❑ Ensure that all team members use appropriate personal protective equipment and work practices that prevent injury
- ❑ Ensure that team members wash hands or use alcohol-based handrubs between patients
- ❑ Dispose of sharps and other medical and chemical wastes safely
- ❑ Keep a daily log to record:
  - ❑ the number of patients treated and procedures performed
  - ❑ complications in treatment delivery
  - ❑ supply shortages or inventory control issues
  - ❑ team safety concerns (e.g., exposures or illnesses)
  - ❑ problems with living conditions
  - ❑ difficulties in managing patients (e.g., communication problems or lack of compliance with instructions for follow-up)
  - ❑ other successes, failures, concerns, or impressions of the day's events

Returning Home

- ❑ Write a comprehensive trip report using your daily logs
- ❑ Medically follow-up and manage any occupational exposures that may have occurred during the trip
- ❑ Conduct patient follow-up (when indicated or possible)

Notes

OSAP Instrument Calculation Tool

This tool assists mission planners in determining the number of instrument kits to bring and how many patients may be seen within a given time frame by a predetermined number of clinicians. Instrument quantities alone may not be the deciding factor in the number of patients treated. Calculating needs beforehand can assist the team in reasonably predicting the number of patients that can receive treatment each day. It also ensures that adequate instruments are on hand, eliminating waiting time for instrument processing and allowing practitioners' time to be used most efficiently. Never compromise instrument processing to allow more patients to be treated.

To determine instrument needs for the trip, first consider four variables:

- ❍ the number of patients you intend to treat each day;
- ❍ the time required to clean, sterilize (or high-level disinfect), and dry instruments;
- ❍ the per-cycle capacity of the available cleaning and sterilizing equipment; and
- ❍ staffing that is available to process instruments.

If a fixed number of kits or instruments can be brought to the site, use this calculation tool to estimate how many patients you can treat in a defined period of time.

TIP: Divide instruments into kits rather than sterilizing them separately. This allows staff to more efficiently sort, clean, and deliver processed instruments back to the treatment area. Test-run the kits through the instrument processing equipment that will be used (e.g., autoclave, pressure cooker, pot for boiling water) to determine the number of kits that can be processed in a single cycle.

Instructions for using the instrument calculation tool

Select the process you will be using and determine the number of kits that can be processed in a single cycle. Process time includes cleaning, packaging, cooling and drying of instruments. Examples are listed below.

Process	Processing time	Capacity (# of kits)	Kits available per 8-hour clinic day
Autoclave	60 mins*	8 kits	64 per autoclave
Dry heat	60 mins*	4 kits	32 per dry heat sterilizer
Pressure cooker	60 mins	6 kits	48 per pressure cooker
Boiling water	60 mins	5 kits	40 per pot of water
Chemical HLD	40 mins*	6 kits	48 per container of HLD

* Process times are determined by the manufacturer and may vary significantly among groups of devices or processes. Always consult manufacturer's instructions when using traditional heat sterilization methods or chemical germicides.

Adding another device or container and additional staff to process instruments can increase instrument throughput significantly. Because most processes require at least an hour to complete, the number of kits brought on the trip can either limit or expand the number of patients that can be treated each hour (provided adequate personnel also are available).

Begin with a good estimate of the number and type of cases you expect to treat over a given time interval and use the methods described above to calculate instrument, personnel, and processing equipment requirements.

Notes

OSAP Site Evaluation Summary

1. Location: _____
2. Mission dates: _____
3. Mission objectives (treatment, education, training): _____
   _____
4. Date(s) of site evaluation visit: _____
5. Local persons contacted: _____
6. Climate and weather: _____
7. Infectious disease hazards (malaria, TB, HIV, etc.): _____
   _____
8. Noxious or venomous animals (insects, snakes, rabid animals, etc.): _____
   _____
9. Personal safety concerns (crime, terrorism, traffic hazards, political unrest): _____
   _____
10. Transportation (availability and safety of public transportation, road conditions, etc.):
    _____
11. Clinic facilities (dental or medical clinic, building of opportunity, portable shelter):
    _____
12. Dental equipment or supplies available on site (dental chair, unit, light, etc.): _____
    _____
13. Personal shelter (hotel, local homes, tents, etc.): _____
14. Sanitation (bathing and latrine facilities): _____
15. Hazardous or medical waste disposal methods (chemical wastes, sharps, blood, teeth, etc.):
    _____

continued on next page

16. Water source and quality (potable or non-potable municipal, surface, or well water): _____

17. Sources and safety of food (restaurant, local homes, self-prepared, etc.): _____
_____

18. Electrical power (local voltage, cycles, reliability, generator availability): _____
_____

19. Alternate sources of fuel for heating if electricity is unavailable (wood, charcoal, etc.):
_____

20. Language and culture (language spoken and availability of translators): _____
_____

21. Cultural and political issues: _____
_____

Notes

OSAP Patient Medical Review Form

Patient Name: _____

Patient Birthdate: _____|_____|_____
Month Day Year

THIS SECTION MUST BE COMPLETED BY THE PATIENT OR BY AN INTERPRETER

Do you have any of the following illnesses or conditions?

	Yes	No
Artificial heart valves	❑	❑
Congenital heart defects	❑	❑
Heart murmur	❑	❑
Heart valve defects	❑	❑
Rheumatic fever	❑	❑
Allergies		
Latex	❑	❑
Foods Please list: _____	❑	❑
Medications Please list: _____	❑	❑

Are you under the care of a doctor? ❑ Yes ❑ No

Are you taking any medications? ❑ Yes ❑ No

If yes, which ones? _____

_____

Do you have any problems associated with bleeding? ❑ Yes ❑ No

Any other illnesses or conditions that the doctor should know? ❑ Yes ❑ No

If "yes," please describe. _____

_____

THIS SECTION TO BE COMPLETED BY HEALTH PERSONNEL

Blood pressure: _____ / _____

Premedication dosage and timing: _____ | _____
Dose Timing

Notes

OSAP Worker Health Information Form

Worker Name: _____

Contact Person in Case of Emergency

Name: _____

Address: _____

Home Phone / Cell Phone: _____

Fax Number: _____ Email address: _____

Relationship: _____

Medication allergies

_____

_____

_____

Chronic illness(es) requiring ongoing treatment

_____

_____

_____

Prescription medications currently being taken

Medication name: _____ Dosage: _____

Medication name: _____ Dosage: _____

Medication name: _____ Dosage: _____

Medication name: _____ Dosage: _____

Medical History

❑ Diabetes
❑ Hypertension
❑ Ulcer disease
❑ Heart disease
❑ Epilepsy
❑ Asthma
❑ Severe allergies*
*Please describe: _____
❑ Other _____
❑ Other _____
❑ Other _____

Vaccination History

Vaccination or documented immunity to:

- ❑ Hepatitis A
- ❑ Poliomyelitis
- ❑ Hepatitis B

  How many doses? ❑ 3 ❑ 2 ❑ 1

  On what part of your body did you receive the injections? _____

  Do you have documentation? ❑ Yes ❑ No
- ❑ Measles (rubeola)
- ❑ German Measles (rubella)
- ❑ Tetanus
- ❑ Diphtheria
- ❑ Whooping Cough (pertussis)
- ❑ Mumps

Notes

OSAP Emergency Medical Release Form

To avoid any unnecessary delay in treatment, all aid workers should fill out and sign this form before departing and turn it in with other important trip materials before arriving at the destination.

Notice to Healthcare Personnel: Release for Emergency Medical Care

Name:_____

Social Security Number: _____ | _____ | _____

Date of Birth:_____

Street Address: _____

City: _____

State or Province: _____

Country: _____

If I require emergency medical care, and if I (or an accompanying spouse or relative) am not able to convey permission for treatment in a timely manner, I hereby authorize, by signature below, delivery of appropriate emergency medical care as deemed necessary by emergency medical personnel, a physician, or the medical facility providing treatment.

I have read this entire release and agree to it.

Signature: _____

Date: _____

Witness Name: _____

Signature: _____

Date: _____

Notes

OSAP Treatment for Exposures

Prior to departing for the mission, ensure that postexposure supplies are packed and at least one team member is trained in the administration of postexposure medications.

Hepatitis B Virus

In most remote locations, laboratory access for source-patient testing or baseline testing of exposed team members for hepatitis B virus (HBV) or hepatitis C virus (HCV) infection is not available. As such, all team members should have documentation of receiving the hepatitis B vaccine series. Because earlier public health recommendations did not call for post-vaccination antibody testing to verify acquired immunity, some members may not know for certain whether they are immune to the virus.* In fact, some may not have responded to the vaccine.

In case of an exposure to HBV:

- ❍ If the exposed team member has established immunity, no further treatment or follow-up for HBV infection is needed.
- ❍ For workers without documented immunity who are exposed to known or suspected HBV-infected blood, give one dose of hepatitis B immune globulin (HBIG) and a vaccine booster.
- ❍ If the exposed worker is a known nonresponder, restart vaccine series.

Hepatitis C Virus

No vaccine is currently available to protect against hepatitis C, and no postexposure treatment is known to prevent infection. (Immune globulin is not recommended.) Following recommended infection control practices is imperative, as preventing exposures to blood and body fluids is the only means of protecting against occupational HCV transmission.

HIV

Although no vaccine is currently available to protect against HIV, studies suggest that the use of zidovudine (AZT) after certain occupational exposures may reduce the chance of HIV transmission. Because most exposures do not lead to HIV infection and the drugs used to prevent infection can have serious side effects, postexposure medication is not recommended for all occupational exposures.

In case of an exposure to HIV:

- ❑ Test the source patient and exposed person (for baseline results) for HIV infection. The OraQuick Rapid HIV-1 Antibody Test is a simple blood-fingerstick test that delivers results within 20 minutes.

continued on next page

* U.S. Centers for Disease Control and Prevention (CDC) recommendations now call for serum testing for HBV antibody titer one to two months after the third dose in the HBV vaccination series. Because levels of circulating antibodies drop over time, testing later than one to two months after completion of the vaccination series cannot reliably verify whether the recipient responded to the vaccine (i.e., developed immunity) or not.

"HIV," *continued from previous page*

❍ If the source patient is HIV-positive and like most dental injuries, the exposure did not involve a large amount of blood, a four-week course of zidovudine and lamivudine is recommended. In more severe cases, a protease inhibitor (indinavir or nelfinavir) may be added. **NOTE**: Guidance may vary on a case-by-case basis. As such, check with an expert before the mission to determine the appropriate drug combinations for various exposure scenarios, or ensure that an expert will be available during the mission. Alternatively, consult the U.S. Centers for Disease Control and Prevention's postexposure prophylaxis hotline (PEPline): 888-448-4911. **NOTE**: This number can only be accessed from the United States.

Notes

OSAP Exposure Follow-Up: Returning Home

Manage exposures on-site as well as upon your return home to ensure that any resulting medical conditions are best managed in a timely manner.

Hepatitis B Virus

Because postexposure treatment is highly effective in preventing hepatitis B virus (HBV) infection, follow-up after treatment is not necessary. Nonetheless:

- ❑ Report any symptoms suggestive of acute hepatitis (e.g., yellow eyes or skin, loss of appetite, nausea, vomiting, fever, stomach or joint pain, extreme fatigue) to your healthcare provider.

Hepatitis C Virus

Following an exposure to blood or body fluids during the mission:

- ❑ Schedule an antibody test for hepatitis C virus (HCV) and a liver enzyme test (alanine aminotransferase activity) as soon as possible (baseline) and at four to six months after the exposure. **NOTE**: Some clinicians also recommend another test (HCV RNA) to detect HCV infection four to six weeks after the exposure.
- ❑ Report any symptoms (as described for hepatitis B above) to your physician.

HIV

In addition to baseline testing for HIV antibody as soon as possible after exposure:

- ❑ Get tested for HIV periodically for at least six months after the exposure (e.g., at six weeks, 12 weeks, and six months).
- ❑ If antiviral drugs had been prescribed as part of postexposure treatment, have a complete blood count as well as kidney and liver function tests to check for drug toxicity. Ideally, these tests should be performed before beginning treatment and two weeks after treatment has started.
- ❑ Contact your physician if you experience sudden or severe flu-like illness during the follow-up period, especially if it involves fever, rash, muscle aches, fatigue, malaise, or swollen glands. Any of these may suggest HIV infection, drug reaction, or other medical conditions.

Notes

OSAP Sterilization and High-Level Disinfection: Available Methods and Chemical Agents

Agent / Process	Form	Efficacy	Corrosiveness	Health hazards	Disposal issues*	Contact Time	Use life	Reuse life	Test strip available?	FDA 510(k) / CE Mark?**
Steam autoclave	Device	Sterilize	Minimal	N/A	N/A	20-30 min sterilization	N/A	N/A	Yes	FDA/CE
Pressure Cooker	Device	Sterilize	Moderate	Scalding	N/A	30 min† sterilization	N/A	N/A	No	No
Boiling Water	Liquid	HLD	Moderate	Scalding	N/A	20 min HLD§	N/A	Yes§	No	No
Household Bleach (5.25% NaOCl) 1:10	Liquid	HLD	Moderate to Severe	Caustic	Dilute to reduce Cl concentration to <20ppm	10 min HLD	24 hrs	No	No	No (off-label use)
Glutaraldehyde	Liquid	Sterilize or HLD	None	Eye, skin, respiratory irritation; sensitization	Do not discard in lakes or streams	6-10 hrs sterilization; 20-45 min HLD	14-30 days	Yes	Yes	FDA/CE
Orthophthaldehyde	Liquid	HLD	None	Eye, skin, respiratory irritation; sensitization	Do not discard in lakes or streams	12 min HLD	14 days	14 days	Yes	FDA/CE

HLD = High-level disinfection NaOCl = Sodium hypochlorite ppm = parts per million

Visit www.fda.gov/cdrh/ode/germlab.html for a list of available chemical sterilants/high-level disinfectants with tradenames, manufacturers, and active ingredient.

* Comply with national and local laws and regulations for use and disposal of sterilants and high-level disinfectants.

** FDA clearance to market, also referred to as a "510(k)" is required for all chemical sterilants and high-level disinfectants marketed in the United States. CE marking is a declaration by a manufacturer that the product meets all the appropriate provisions of relevant legislation that implements certain European Directives.

† Pressure cookers can be used for sterilization if they maintain a temperature of 250°F (121°C) at a pressure of 15 pounds for 30 minutes.

§ Follow instructions on page 19 of this guide for using boiling water to process dental instruments.

chart continued on next page

chart continued from previous page

Agent / Process	Form	Efficacy	Corrosiveness	Health hazards	Disposal issues*	Contact Time	Use life	Reuse life	Test strip available?	FDA 510(k) / CE Mark?**
Hydrogen Peroxide (7.5% H_2O_2)	Liquid	Sterilize or HLD	Minimal	Serious eye hazard; skin, respiratory irritation	Do not discard in lakes or streams	6 hrs sterilization; 30 min HLD	21 days	21 days	Yes	FDA/CE
Peracetic acid and hydrogen peroxide	Powder (mix with water)	Sterilize	Minimal	Eye irritant	None	10 min sterilization	24 hrs after mixing	24 hrs	Yes	CE

HLD = High-level disinfection NaOCl = Sodium hypochlorite ppm = parts per million

Visit www.fda.gov/cdrh/ode/germlab.html for a list of available chemical sterilants/high-level disinfectants with tradenames, manufacturers, and active ingredient.

* Comply with national and local laws and regulations for use and disposal of sterilants and high-level disinfectants.

** FDA clearance to market, also referred to as a "510(k)" is required for all chemical sterilants and high-level disinfectants marketed in the United States. CE marking is a declaration by a manufacturer that the product meets all the appropriate provisions of relevant legislation that implements certain European Directives.

OSAP Oral Care Humanitarian Mission Briefing

1. Mission overview and objectives (patient treatment, patient education, professional education and training)**:**

_____

2. Trip Itinerary:

Date Year _____	Time	Arrival or Departure	Meeting Place, Arrival/Departure Locations	Transportation (Flight No., Bus, etc.) / Reason for Stop
		Arrive / Depart		
		Arrive / Depart		
		Arrive / Depart		
		Arrive / Depart		
		Arrive / Depart		
		Arrive / Depart		
		Arrive / Depart		
		Arrive / Depart		
		Arrive / Depart		
		Arrive / Depart		
		Arrive / Depart		
		Arrive / Depart		
		Arrive / Depart		
		Arrive / Depart		

3. Emergency contact information:

Team Leader: _____

Sponsoring organization contact: _____

Nearest embassy or consulate in host country: _____

Other: _____

4. Required / recommended personal articles:

- ❑ Personal prescription medications for _____ days
- ❑ Prophylactic medications (if required) for _____ days
- ❑ Prescription eyewear (and a spare pair of glasses) and safety glasses/goggles with solid side shields
- ❑ Personal hygiene articles (e.g., toothbrush, floss, soap, shampoo, feminine hygiene):_____

_____

continued on next page

Required / recommended personal articles, *continued from previous page*

- ❑ Sunscreen, sunglasses, insect repellant (if indicated)
- ❑ Special clothing (e.g., caps, cold weather gear, sun visors): _____
- ❑ Earplugs (they can aid in sleeping)
- ❑ Other: _____

5. Safety precautions:

- ❑ Anti-terrorism and crime precautions: _____
- ❑ Infectious disease precautions (including food and water): _____
- ❑ Clinical safety precautions (vaccinations, bloodborne pathogens training, including postexposure management):
- ❑ Travel precautions (seat belts, road hazards, etc.): _____
- ❑ Other: _____

6. Language and culture:

- ❑ Traveler's dictionary or phrase book (optional)
- ❑ Glossary of medical and dental terms (optional)
- ❑ General overview of history, customs, and cultural issues that may influence mission success:_____
- ❑ Other: _____
- ❑ After-Action Reports from previous missions to this location

OSAP After-Action Mission Report Template

Location(s) Visited: _____ **Mission Dates:** _____

Mission Team Leader: _____

Phone: _____ **Fax:** _____ **Email address:** _____

Mission Summary. Broadly summarize the overall mission and include information on the composition of the team, sponsor(s), significant milestones and events that occurred during planning, preparation, execution and recovery.

_____

_____

_____

Team Composition. List all team members including their professional titles, licensure, affiliation, and contact information. Attach a separate sheet if necessary.

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Sponsor(s). List all organizations or individuals providing support (financial or in-kind) for the mission.

_____

_____

_____

Local Host Interaction(s). Provide name and contact information of individuals that provided assistance during the mission. Describe any difficulties that may have arisen and provide suggestions as to how these may be avoided in the future. Use an attachment if necessary.

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Observations and Recommendations. Adequately describe key problem areas. Be very specific. If problems involved equipment or materials, provide detailed item descriptions, including brand names, part numbers, and quantities. List problem areas in order of importance. If making a recommendation for improvement, identify the appropriate administrative level for corrective action, e.g., team leader, individual team members, sponsor. List a short title for each observation, describe the problem, and provide a recommendation. Use the following example as a guide:

1. Translator Support Issues

Observation: Translators are mission-essential, and serious problems can arise if they cannot perform their duties. Our translator asked us to extract a non-emergent carious third molar on the first day of the mission at the remote site. After having the tooth removed, she developed a post-operative infection with muscle trismus treatment and could not speak. As a result we were without effective translation services for three days.

Recommendation: Teams should avoid performing non-emergency invasive treatment on translators or other mission-essential personnel if there is no one else who can perform their duties.

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For supply issues, each recommendation for modifications, additions, and deletions must contain a complete item description, cost, and quantity and be coordinated with medical material prior to submission of this report. The following example illustrates this point:

2. Inadequate numbers and types of molar extraction forceps

Observation: We had insufficient numbers of molar extraction forceps, especially #17s, to permit prompt sterilization turnaround. Each kit contained four #23s and four #17s, but the dentists on this mission were not as comfortable using the #23 as the #17, which resulted in a wait for the #17s to be processed and an occasional slowing in the flow of patients.

Recommendation: Planners should assess mission dentists' preferences and adjust kit contents accordingly. For example, with this mission's team, increasing the numbers of molar forceps in the kits from 8 to 12 (i.e., if each kit contained eight #17s and four #23s) would have improved instrument turnaround time.

Observations and Recommendations.

Environment, Health, Safety, and Cultural Information. Include data on climate, weather, environmental factors, topography, etc., that could affect future mission success. Identify situations of medical importance or other significant hazards encountered. If applicable address the following:

Community, Environment, and Sanitation:

- ❑ Health services (availability, quality): _____
- ❑ Water supply: _____
- ❑ Sewage disposal: _____
- ❑ Local restaurants: _____
- ❑ Insects and animals affecting health: _____
- ❑ Poisonous fish and plants; _____
- ❑ Safety of food and dairy products: _____

Health and Safety Issues (including diseases and prophylactic measures): _____

_____

Cultural Issues (including specific observations on traditions and customs): _____

_____

Lessons Learned. Provide a strategic summary of trials and triumphs encountered by the team during all phases of the mission, including team health and safety, healthcare delivery, logistics, shelter, equipment, supplies, and transportation. Whereas the problems described in the "Observations and Recommendations" section are very specific in nature, this section provides a broader, "big picture" view to consider for the next humanitarian aid mission.

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Future Mission Recommendations. Draw from the "Observations and Recommendations," "Healthcare Outcomes," and "Lessons Learned" sections to provide a strategic summary of recommendations for future missions.

Additional comments. Use this space to share any additional thoughts not addressed in previous sections.

OSAP Selected Resources

American Dental Association
Infection control recommendations, position statements, literature, and information
www.ada.org/prof/resources/topics/icontrol/index/asp

American Heart Association
CPR training
www.americanheart.org

American Public Health Association
Group of public health professionals focusing on personal and environmental health
http://apha.org/

American Red Cross
First aid, CPR, bloodborne pathogens training, HIV/AIDS education and other resources
www.redcross.org

Centers for Disease Control and Prevention, Div. of Oral Health
Dental infection control guidelines and resources from the Centers for Disease Control and Prevention
www.cdc.gov/oralhealth/infectioncontrol/index.htm

CDC National AIDS Hotline
Information specialists who can answer questions or provide information on HIV infection, AIDS, and local resources
800-342-2437 (Accessible only from the U.S.)

CDC Travelers Health Website
Health information for specific destinations
www.cdc.gov/travel/

CDC Hepatitis B and C Information
Toll-free (from the U.S.) CDC hepatitis information line:
1-888-4-HEPCDC (1-888-443-7232)

CDC's hepatitis website:
www.cdc.gov/ncidod/diseases/hepatitis/index.htm

Engender Health
Infection Prevention, an infection control reference book for healthcare professionals
http://www.engenderhealth.org/res/offc/safety/ip-ref/index.html

Health Volunteers Overseas
Private, nonprofit voluntary organization of members dedicated to improving the availability and quality of health care in developing countries through training and education
www.hvousa.org

JHPIEGO, An Affiliate of Johns Hopkins University
Producers of *Infection Prevention Guidelines for Healthcare Facilities with Limited Resources*
www.reproline.jhu.edu/

OSAP — the Organization for Safety and Asepsis Procedures
Numerous infection control and safety resources, publications, and educational materials for dental healthcare professionals
www.osap.org

OSAP Traveler's Guide to Safe Dental Care
Advice on obtaining safe dental care when traveling to developing parts of the world
www.osap.org/patients/articles/travelguide.htm

U.S. Department of State
Travel warnings and information on political climates around the world
http://travel.state.gov/travel/warnings_currrent.html

List of foreign consular offices in the United States
www.state.gov/s/cpr/rls/fco/

World Health Organization
World health information
www.who.int/en/

Health information for travelers
www.who.int/ith/

Notes

Acknowledgments

Nearly three years ago, OSAP and the U.S. Centers for Disease Control and Prevention (CDC) supported a Global Summit to identify how OSAP can best serve dental workers and patients worldwide. Participants suggested that a guide be developed to ensure infection control and safety during humanitarian missions. Over the following two years, a group of dedicated experts worked to create a manual that would share current infection control and safety knowledge with mission teams in a manner that was both relevant and practical. The group's major messages: As healthcare workers, we have an obligation to apply modern infection control principles to keep our patients safe. With appropriate knowledge, resources, and planning, safe dental care may be delivered in settings that have little resemblance to the modern dental office.

Although this guide is the result of the efforts of many people beyond those recognized on this page, OSAP extends its special thanks to the following individuals for their contributions to this *Guide for Safety and Infection Control for Oral Healthcare Missions.*

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OSAP Guide to Infection Control on Dental Health Care Missions

Survey

Please take a moment to complete this survey after using the guide. Your assistance will help us ensure that we provide the most useful information possible in future publications. Thank you!

Please rate the following statements by circling the number that best describes your experience:

1 = Strongly Agree 2 = Agree 3 = Disagree

1. Overall, the guide provided me with valuable and practical information useful on my trip.

Strongly Agree 1 2 3 Disagree

2. The style and format were easy to understand and use.

Strongly Agree 1 2 3 Disagree

3. The forms provided in the appendices were useful in planning for the trip.

Strongly Agree 1 2 3 Disagree

4. The forms on the CD were easy to use and provided the necessary information.

Strongly Agree 1 2 3 Disagree

5. The guide was understandable to all team members.

Strongly Agree 1 2 3 Disagree

6. Use of this guide resulted in improved infection control and/or safety procedures on the trip.

Strongly Agree 1 2 3 Disagree

7. I would recommend this guide to a colleague.

Strongly Agree 1 2 3 Disagree

8. I would recommend OSAP as a resource for dental infection control and safety information.

Strongly Agree 1 2 3 Disagree

Fax completed survey to OSAP at 410-571-0028 or mail to: OSAP, PO Box 6297, Annapolis, MD 21401

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