III. 32 WOUND CARE GUIDELINES

I. Purpose: To promote healing and prevent infection and minimize scarring of abrasions, puncture, lacerations, and avulsions.

II. Relevant Occupational Medical Service (OMS) Procedure Manual Sections

A. Anaphylaxis. Chapter II Section 2
B. Hydrofluoric Acid Burn. Chapter II Section 7
C. Phenol Burn. Chapter II Section 9
D. Occupational Injury and Illness. Chapter III Section 18
E. Human Body Fluid Exposure. Chapter III Section 5
F. Nonhuman Primate Body Fluid Exposure. Chapter III Section 17
G. Hepatitis B Immunization. Chapter III Section 4
H. Tetanus, Diphtheria, Pertussis Immunization. Chapter III Section 27
I. Retrovirus Exposure. Chapter III Section 24

III. General

A. Each worker who reports an injury to the OMS is asked by an OMS clinician to describe the first aid, if any, which was performed prior to arrival in the clinic.
   1. First aid should be administered at the work site, if microbial contamination of the wound is a possibility or if the injury involves a chemical exposure.
   2. If the clinician is not confident that the first aid was consistent with the approach described below, wound care is provided in OMS. If the worker may have been exposed to a particularly hazardous biological agent (e.g., hepatitis B, human immunodeficiency virus, rabies, B virus, etc.) or chemical agent (e.g. hydrogen fluoride) and the worker presents to OMS in a timely fashion, first aid is provided in OMS regardless of whether it was initiated in the workplace.

B. If clinically indicated, workers with significant eye injuries may be referred to the National Eye Institute (NEI) clinic for further evaluation and treatment.
   1. Prior to referring the worker, the OMS clinician consults with the NEI clinic receptionist (301-496-5847) to confirm that the worker can be seen immediately.
   2. If the worker can be evaluated promptly, the OMS clinician:
      a. Enters the request into the CRIS system; and
      b. Asks the worker to return to OMS with the completed consultation report.
   3. OMS healthcare providers in satellite clinics consult with an OMS medical provider, as needed. If clinically indicated, the injured worker is referred to a healthcare provider in the community for further evaluation.

C. The OMS clinician provides the worker with information, verbally and in writing, regarding care for the wound and the earliest evidence of infection.
   1. Written instructions are located on the back of the worker's copy of the 2558 form.

2. The worker is instructed to call the clinic as soon as possible if any of the following signs or symptoms increase:
    a. Redness,
    b. Swelling,
    c. Pain,
    d. Heat, or
    e. Drainage.

D. The worker is given a booster dose of tetanus-diphtheria toxoids or tetanus-diphtheria-pertussis (Tdap), if clinically indicated.

E. The worker is given an appointment for reevaluation.

F. The injury and associated wound care information is recorded in the worker's clinical record.

G. Injuries involving a potential exposure to either human or nonhuman primate body fluids and to a human pathogen in a laboratory are recorded in the OMS computer application.

IV. Wounds with Potential Microbial Contamination

A. Skin wounds are scrubbed vigorously with a povidone iodine solution (e.g. Betadine) and irrigated for 15 minutes. If the worker is allergic to iodine, a chlorhexidine solution (e.g. Hibiclens) is used in a similar fashion.

B. Mucous membrane and non-penetrating eye wounds are irrigated with sterile normal saline for 15 minutes. Antimicrobial soaps are not used and the wound is not scrubbed.

C. Additional evaluation, treatment and monitoring are provided as clinically indicated. For example:
    1. If the injury involves a possible exposure to B virus, the the Nonhuman Primate Body Fluid Exposures procedure is followed.
    2. If the injury involves a possible exposure to hepatitis B or HIV, the Human Body Fluid Exposure procedure is followed.
    3. If the injury involves a possible exposure to a primate retrovirus (e.g. HIV-1 or -2, HTLV I/II, SIV, SRV, SHIV) or some lentiviral vectors, the the OMS Retrovirus Exposure procedure is followed.
    4. If the injury involves exposure to other potential human pathogens, the OMS clinician develops an appropriate treatment plan. The OMS clinician consults with infectious disease specialists and subject matter experts, as needed.

D. Lacerations and avulsion injuries:
    1. If less than six hours old and unlikely to be contaminated with a human pathogen, may be repaired with surgical adhesive or sutures.
    2. If more than six hours old, the margins are loosely approximated with steri-strips™.

E. Some clean wounds may be closed up to twelve hours after the injury occurred. Delayed closure of potentially contaminated wounds will be considered on a case-by-case basis.

F. Lacerations and avulsion injuries which may be contaminated with human

pathogens are allowed to heal secondarily.

Additional counseling is provided as clinically indicated, particularly in instances of exposure or significant risk of exposure to specific pathogens.

V. Chemical Burns

A. The chemical(s) are identified and their toxic effects are reviewed. Resources for this information include online MSDS references, and the Occupational Desk Reference.

B. Skin wounds and ocular exposures receive similar treatment.
   1. Contaminated clothing or contact lenses are removed.
   2. The contaminated area is irrigated for at least 15 minutes.
      a. The OMS clinic shower is used for widespread skin exposures.
      b. Ocular injuries are irrigated as described above in Section III.B. and IV.B.
   3. Cold compresses are used to limit the extent of the injury and to control pain for first and second degree burns, except in the case of liquid nitrogen burns when warm compresses should be used.
   4. An OMS medical staff member evaluates the wound and recommends additional treatment as clinically warranted. The clinician:
      a. Performs a slit lamp exam for eye injuries;
      b. Debrides skin wounds, if needed;
      c. Removes foreign bodies; and
      d. Recommends topical (e.g. Silvadene cream) and systemic treatment (e.g. nonsteroidal medications for pain control).
   5. OMS healthcare providers in satellite clinics consult with an OMS medical provider, as needed. If clinically indicated, the injured worker is referred to a healthcare provider in the community for further evaluation.

VI. References

A. Reeder, et al. Emergency Wound Management in Emergency Medicine Sixth Edition, Tintinalli, et al, eds. McGraw Hill 2004 pp 81-119.

B. Holmes GP, Chapman LE, Steward JA, et al. Guidelines for the Prevention and Treatment of B-virus Infections in Exposed Persons. Clin Infec Dis 1995; 20:421-39.

C. Pavan-Langston D, "Burns and Trauma" in Manual of Ocular Diagnosis and Treatment, 6th ed. Pavan-Langston D, ed, Little Brown 2007 chap. 2. Pp 36-51.

D. Spector J, Fernandez, WG. Chemical, Thermal and Biological Ocular Exposures. Emerg Med Clin N Am 26(2008): 125-36

E. Hanson JJ, Azeemuddin A. Emergent Management of Bite Wounds. Emerg Med 42(2010):6-11.

F. Weber DJ, et al. Lessons learned: Protection of healthcare workers from infectious disease risks. Crit Care Med 38(2010): S306-314