

TECHNICAL BULLETIN

**FACILITY SANITATION CONTROLS AND  
INSPECTIONS**

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HEADQUARTERS, DEPARTMENT OF THE ARMY

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DEPARTMENT OF THE ARMY  
WASHINGTON, DC, 1 March 2019

## **FACILITY SANITATION CONTROLS AND INSPECTIONS**

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## CHAPTER 1

### INTRODUCTION

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**1–1. Purpose**

The purpose of this publication is to establish sanitary control criteria for facility managers to mitigate the risk for communicable disease transmission and to provide guidance for Environmental Health personnel when conducting sanitation inspections.

**1–2. References**

See appendix A.

**1–3. Abbreviations and terms**

See the glossary.

**1–4. Applicability**

This publication applies to—

- a.* The Active Army, Army Reserve, and Army National Guard.
- b.* Joint military installations, field training sites, and contingency operation sites where Army assets are responsible for providing preventive medicine support.
- c.* Privatized facilities operated on behalf of the Army to provide services to Army or DOD personnel, in accordance with leasing and contractual agreements.

**1–5. Guidance for using this publication**

*a.* The term “preventive medicine,” as used in this publication, is synonymous with “environmental health” and “public health” and refers to those individuals responsible for providing environmental health service support as specified in Department of the Army Pamphlet (DA Pam) 40–11.

*b.* Critical requirements are identified by a bold asterisk (\*). Critical requirements are terminal controls that are applied to prevent or significantly reduce the potential for disease transmission.

(1) An asterisk immediately following the paragraph title indicates the entire paragraph contents are critical requirements. For example, in chapter 2, paragraph 2–3 is marked with an asterisk following the title “Restricted practices and instruments.” Thus, all content in paragraphs 2–3*a* through 2–3*e* are critical.

(2) An asterisk located immediately following a subordinate paragraph header or at the end of the paragraph indicates that only that paragraph and its associated subordinate paragraphs are critical. For example, in chapter 2, subparagraph 2–4*c*(1) is marked with an asterisk following the paragraph header “Water,” which indicates all of the contents of paragraph (1) and the subordinate paragraphs (1)(*a*) and (1)(*b*) are critical. In the second example, subparagraph 2–4*c*(2), *Sinks*, has four subordinate paragraphs. Only subparagraphs (2)(*a*) and (2)(*e*) are marked with an asterisk; therefore, subparagraphs (2)(*b*) through (d) are not critical.

*c.* Hazards and controls not addressed.

(1) If necessary to protect against public health hazards or nuisances, the medical authority or designated Preventive Medicine representative, or Command Surgeon, as applicable, may impose specific requirements or restrictions in addition to the controls contained in this publication.

(2) Additional requirements are formally documented and published in local policy specifying the conditions and underlying public health threat being controlled. A copy of the policy letter should be provided to all applicable facility managers within the regulatory authority’s inspection jurisdiction.

**1–6. Timeframe to correct violations**

*a.* All violations found during an inspection are expected to be corrected at the time of inspection. Some situations may require submission of a work order or other action to resolve the condition that contributed to the

violation. Public health inspectors work with the facility manager and apply the following guidelines for violations that remain uncorrected at the time of inspection:

(1) The facility manager (or person in charge) takes immediate action at the time of inspection to mitigate the risk associated with a critical violation. Actions to reduce the risk may include—

(a) Temporarily discontinuing the specific service or practice associated with the violation until the hazard condition is resolved;

(b) Modifying the service to exclude activities that result in a critical violation; or

(c) Applying a temporary administrative or physical control to reduce the hazard severity until a more permanent solution is achieved.

(2) The facility manager takes formal actions to correct the conditions that resulted in the critical violation and to establish operational procedures for administering controls to prevent a similar violation from occurring in the future. Formal actions are initiated immediately following the inspection and, when possible, are completed within 5 business days. Actions requiring more time to complete should be achieved within a maximum period of 30 days.

(a) The temporary controls specified in subparagraph *a*(1), above, to mitigate a critical condition remain in place until the underlying factor or factors that contributed to the critical violation are resolved.

(b) Underlying factors contributing to a critical violation may require repair to physical facilities or equipment; development of a sanitation standard operating procedure (SOP); additional employee training; or other action to improve active managerial controls within the operation. The maximum time allotted for correcting a critical violation is determined jointly by Preventive Medicine and the person in charge and is based on the feasibility to resolve the condition in the time allotted.

(c) The Preventive Medicine inspector conducts a follow-up inspection within 5 business days to verify the corrective action was achieved for all critical violations that were not corrected at the time of inspection. The date for the follow-up inspection is determined at the conclusion of the original inspection and annotated on the inspection report provided to the person in charge.

(d) The Preventive Medicine inspector conducts weekly, unannounced walk-through inspections to ensure temporary, agreed-upon controls remain in place when a permanent corrective action cannot be achieved within 30 days. Formal documentation using the inspection forms prescribed in paragraph 1–9 is not required for walk-through inspections. If the walk-through inspection reveals a critical violation due to a breakdown in the temporary control(s), the inspector reports the finding as specified in paragraph 1–10e. As a result of the reoccurring critical violation, additional operational restrictions, to include facility closure, may be imposed until the underlying factors contributing to the critical violation have been resolved.

(3) Corrective actions for noncritical violations should be achieved within 30 days.

(a) A follow-up inspection to assess completion of the corrective action is not required.

(b) One or more walk-through inspections should be conducted if the timeframe between scheduled routine inspections is greater than 90 days.

(c) Consistent failure to correct noncritical violations may result in accrual of detrimental conditions that, when combined with poor managerial controls, could increase the risk to public health and safety. The Preventive Medicine inspector reports, as specified in paragraph 1–10e, when a steady decline in the physical condition of a facility or the application of active managerial controls is noted over time.

*b.* Preventive Medicine applies an intervention to resolve the chronic occurrence of critical or noncritical violations. Interventions may include, but are not limited to, the following:

(1) Assisting the person in charge (or facility manager) in the development of sanitation SOPs to improve active managerial controls and employee practices.

(2) Assisting the person in charge (or facility manager) in the development of training materials to reinforce proper sanitation and hygienic practices by employees.

(3) Facilitating work order resolution for damaged physical facilities or equipment. This intervention requires contact with the Directorate of Public Works (DPW) or Engineers to help influence the priority level assigned to the work order. Some cases may require preparing a risk assessment and elevating the issue to the installation commander to raise the action priority.

(4) Incentivizing inspection performance through public notification. Examples include—

(a) Posting inspection reports or grades for public view at the inspected facility.

- (b) Reporting top-performing and under-performing facilities in the post newspaper or other media.
- (c) Creating competition between similar facilities by recognizing the “Star” performer. A trophy or placard is presented to a facility for public display and is rotated quarterly. A permanent award may be presented for facilities that achieve four consecutive Star awards.

#### **1–7. Sources used to develop the sanitation standards**

Unlike the Food and Drug Administration’s (FDA) *Model Food Code* or the Environmental Protection Agency’s (EPA) *Model Aquatic Health Code*, a national model has not been developed to standardize sanitary controls associated with the various types of operations identified in this publication. Accordingly, the standards presented in this bulletin were derived following an extensive review of infection prevention and control guidelines from the Centers for Disease Control and Prevention and the public health standards applied by health departments throughout the United States, United Kingdom, and Canada. The resulting collection of standards presented in this bulletin identifies prudent practices to protect public health.

#### **1–8. Facilities requiring inspection**

*a.* Periodic sanitation and health inspections are conducted to assess conformance to prescribed public health controls. Frequencies for conducting inspections are either directed by Army facilities management policy, other governing regulations, or are recommended in this publication based on the facility’s inherent risk for disease transmission if the risk is left uncontrolled. Table 1–1 identifies facilities requiring periodic sanitation and health inspections.

*b.* The interval between *prescribed* inspections may be reduced (conducted more frequently) based on identified risks but may not be conducted less frequently without approval from the medical authority, Command Surgeon, or designated Preventive Medicine representative.

*c.* Inspections of facilities that lack a directed inspection frequency are conducted based on the risk for contributing to an adverse health effect if sanitary controls are not applied. The *recommended* inspection frequencies depicted in table 1–1 were derived from representative baseline assessments of expected services and practices associated with each operation. Variables such as operation size, the types of services offered, and actual employee practices will further impact the risk potential and may necessitate increasing the inspection frequency for some operations.

*d.* A baseline and periodic facility risk assessment surveys are recommended where noted in table 1–1 to better align inspection frequencies with the operational risk. See appendix C for risk assessment procedures and calculations.

(1) Risk assessment for barber and beauty facilities is conducted using Department of the Army (DA) Form 7847 (Beauty Operations Risk Assessment Worksheet).

(2) Risk assessment for gymnasiums and fitness centers is conducted using DA Form 7851 (Fitness Facility Risk Assessment Worksheet).

(3) Risk assessment guidance for food establishments is provided in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP.

**Table 1–1. Required minimum inspection frequencies**

Facility Type and Supporting Publication	Prescribed Inspection Frequency	Recommended Frequency <sup>1</sup>
Army Correction System Facilities (AR 190–47)	Monthly	–
– Detention Facilities (D-cell)	Monthly	–
– Field expedient D-cells	Weekly	–
Barber Shop (DA Pam 40–11)	Risk-based	Annual
Beauty Shop/Hair Salon (DA Pam 40–11)	Risk-based	Annual
– Day Spa/Beauty Shop with multiple services	Risk-based	Semiannual
– Nail Salon ( <i>no other services provided</i> )	Risk-based	Annual
Child, Youth, and School Services (CYSS) Facilities	Varies <sup>2</sup>	–
– Child care facilities; <i>includes child development centers (CDC) and school-age care (SAC)</i> (AR 608–10)	Monthly <sup>3</sup>	Monthly <sup>3</sup>
– Family Child Care (FCC) Homes (AR 608–10)	Annual <sup>4</sup>	–
– Youth Program facilities (DODI 6060.4)	Annual	Quarterly <sup>5</sup>
Ear piercing (DA Pam 40–11)	–	Annual
Food Establishments (TB MED 530/NAVMED P-5010-1/AFMAN 48-147 IP)	Risk-based	Varies
Gyms & Fitness Centers (DA Pam 40–11)	Risk-based	Annual
Laundry Operations ( <i>garrison</i> ) (DA Pam 40–11)	–	situational
– Hospital	–	situational
– Field laundry; deployment (ATP 4–42)	Monthly	–
Manufactured Home Parks (DA Pam 40–11)	–	2 years
Massage Operations ( <i>nonmedical</i> ) (DA Pam 40–11)	–	Annual
Recreational Areas (DA Pam 40–11)	–	Annual
Recreational Water Facilities (TB MED 575)	Varies	–
– Pools, spas, spray grounds, activity parks, natural bathing	Weekly	–
– Medical facility therapy pools	–	Monthly
– Sanitary survey of natural bathing areas	Annual	–
Unaccompanied Troop Housing (AR 420–1)	–	Annual
– Substandard conditions exist	Monthly	–
ATP=Army Techniques Publication <sup>1</sup> The absence of a “recommended frequency” for the specified facility requires inspections to be conducted according to the “prescribed” frequency. <sup>2</sup> Required inspections to maintain certification of the CYSS Program are conducted annually according to DODI 6060.02. Routine “periodic” inspections are conducted according to AR 608–10. <sup>3</sup> All kitchens supporting programmed meal service are inspected monthly. The general facility sanitation inspection is conducted monthly for CDCs and quarterly for SAC. <sup>4</sup> The FCC Program Coordinator may direct more frequent inspections, which are conducted by FCC staff members who have been trained by Preventive Medicine. See AR 608–10, subparagraph 6–40a(1). <sup>5</sup> The kitchen supporting programmed meal service at a youth/teen facility is inspected monthly. A general facility sanitation inspection is conducted quarterly at youth/teen facilities.		

## 1–9. Inspection documentation

*a. Requirement.* Inspections are documented using prescribed DA forms or the corresponding survey record available in the Defense Occupational and Environmental Health Readiness System–Industrial Hygiene (DOEHRS-IH), Environmental Health business area (hereafter referred to as “DOEHRS”).

(1) DOEHRS general sanitation survey tools are available from the U.S. Army Public Health Center (APHC) Web site at [https://phc.amedd.army.mil/topics/envirohealth/hrasm/Pages/DOEHRS\\_Resources.aspx](https://phc.amedd.army.mil/topics/envirohealth/hrasm/Pages/DOEHRS_Resources.aspx).

(2) DA forms are available through the Army Publishing Directorate (APD) Web site at <https://armypubs.army.mil/>.

(3) Direct data entry in the DOEHRS, General Sanitation folder, at <https://doehrs-ih.csd.disa.mil/>, is required for all facilities in which a DOEHRS survey has been established. Data is entered in DOEHRS within 10 days following the facility inspection.

*b. Barber and beauty.* Barber and beauty operations are inspected according to the criteria provided in chapter 2 and documented on DA Form 5402 (Barber/Beauty Shop Inspection Report) or the DOEHRS survey record, *Beauty/Barber Shop Sanitation Survey*. Inspection findings for massage services performed by a day spa facility are also documented on these forms. Sanitation criteria for massage operations are provided in chapter 4.

*c. Gyms and fitness centers.* Gyms and fitness centers are inspected according to the criteria provided in chapter 3 and documented on DA Form 7850 (Gym/Fitness Facility Inspection Report) or the DOEHRS survey record, *Gym and Fitness Center Survey*.

(1) Massage facilities that are operated as a component of a fitness center are documented with the fitness center inspection. See chapter 4 for massage operation criteria.

(2) Recreational water facilities that are operated within a fitness center are inspected and documented separately in accordance with (IAW) TB MED 575.

(3) Food concessions operated within a fitness center are inspected and documented separately IAW TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP.

*d. Massage.* Massage operations are inspected according to the criteria provided in chapter 4.

(1) Inspections of independently operated massage operations are documented on the gym and fitness operation inspection forms specified in paragraph 1–9c.

(2) Inspections of massage services performed within a day spa or beauty operation are documented as specified in paragraph 1–9b.

*e. Housing.* Troop housing inspections are conducted according to the criteria provided in chapter 5. Because there is no DA form available for documenting housing inspections, these inspection findings may be summarized in a memorandum or captured on the DOEHRS survey record, Habitability Survey Report.

*f. Manufactured home parks.* Manufactured home parks operated on installations are a component of family housing (see chapter 5) and operated according to AR 420–1. Health and safety inspections are generally conducted when requested by the installation commander. The criteria for ensuring safe and sanitary manufactured home parks are provided in chapter 6.

(1) Because there is no DA form available for documenting manufactured home park inspections, these findings may be summarized in a memorandum or captured on the DOEHRS survey record, Mobile Home/RV Park Sanitation Report.

(2) Inspection findings associated with the recreational area (playground) affiliated with a manufactured home park are documented separately, as specified in subparagraph 1–9g.

*g. Recreational areas.* Recreational area inspections are conducted according to the criteria provided in chapter 7. Inspection findings may be summarized in a memorandum or on the DOEHRS survey record, as specified below.

(1) Except as specified in subparagraphs (2) through (4) of this section, a recreational area comprised of playgrounds, picnic areas, and camping grounds with tents or cabins is inspected as a single site when these areas share a common parking lot or support facilities (shower or toilet facilities). The DOEHRS survey record, Public Facility Sanitation Report, is used to document recreational area inspections. The DOEHRS survey may also be used to document assessments of other recreational areas such as athletic fields, indoor recreation centers, horse stables, and archery ranges.

(2) Camping areas containing a recreational vehicle (RV) park are inspected as independent sites and documented on the DOEHRS survey record, Mobile Home/RV Park Sanitation Report.

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(3) Natural bathing beaches, which include the recreational water, beach area, and bathhouse, are inspected as specified in paragraph 1–9*m*.

(4) Food concessions operated in a recreational area are inspected independently IAW TB MED 530/NAVMED P-5010-1/AFMAN 48-147 IP.

*h. Child, Youth, and School Services.* Requirements for conducting health and sanitation inspections at CYSS program facilities are specified in Department of Defense Instruction (DODI) 6060.02, DODI 6060.4, and AR 608–10. The health and wellness or “medical” aspects of child care and youth program operations are typically evaluated by a public health nursing representative. Environmental Health personnel conduct the sanitation component of the inspection, which examines general facility sanitation, food safety, and other environmental factors that impact health. The contents of this bulletin focus on the environmental health sanitation aspects of inspection. Health/medical inspection components are specified in the referenced publications, above.

(1) Chapter 8 of this bulletin provides the Environmental Health criteria for CYSS operations.

(2) Food sanitation and general sanitation components of child care centers (such as CDC and SAC), youth or teen centers, schools, and other facilities used to provide child and youth program activities are documented on DA Form 7848 (Child, Youth, and School Facility Sanitation and Food Safety Inspection); FCC home inspections are documented on DA Form 7849 (FCC Home Environmental Health Sanitation Inspection).

(a) The food safety allowances and procedures specified in chapter 8 are approved exceptions to TB MED 530/NAVMED P-5010-1/AFMAN 48-147 IP.

(b) At the time of this bulletin’s publishing, DOEHRs data entry was not available for CYSS program inspections. This capability is expected in the future.

(3) DODI 6060.02 and DODI 6060.4 require annual program-level inspections of key child care and youth program components, in addition to the periodic sanitation and hygiene inspections conducted by Preventive Medicine. A Comprehensive Health and Sanitation Inspection and a Multidisciplinary Team Inspection, which includes a health and sanitation component, are conducted unannounced once each year and are coordinated by the senior commander or designated representative using local public health representatives—both a Public Health Nurse and an Environmental Health professional. An Annual Higher Headquarters Inspection is also conducted once each year as part of the DOD Certification to Operate.

(a) Program-level inspections are performed according to standardized DOD guidelines and other forms or checklists prescribed by Installation Management Command or the Assistant Chief of Staff for Installation Management (ACSIM). The environmental health criteria presented in the CYSS program inspection checklist is written at the macro-level and outlines essential controls necessary to protect the health of children and staff.

(b) The sanitation inspection forms specified in subparagraph 1–9*h*(2) provide the micro-level assessment of the facility and are recommended for use, as applicable, in conjunction with other prescribed forms/checklists when annual program-level inspections are conducted.

(c) The Army Public Health Nurse and Environmental Health professional should assist the Garrison Commander in overseeing corrective actions and ongoing compliance with health and sanitation standards from all inspections.

(d) The food safety and sanitation components of the annual program-level inspections should be performed by a qualified subject matter expert such as an Environmental Science and Engineering Officer, Civilian Sanitarian, or a noncommissioned officer in the grade of E-6 or above with military occupational specialty 68S. Applying this level of scrutiny in the program-level inspections serves to validate the quality of the periodic inspections conducted by junior Environmental Health personnel.

*i. Confinement and detention facilities.* AR 190–47 specifies the requirements for medical inspection of Army confinement and detention facilities.

(1) Inspection criteria and procedures are provided in chapter 9 of this publication.

(2) Inspection findings are documented on DA Form 1594 (Daily Staff Journal or Duty Officer’s Log) at the facility and are summarized in a memorandum for record (MFR) for retention at the Environmental Health office.

(3) The DOEHRs does not support survey data entry for garrison confinement and detention facilities. The DOEHRs EPW Detention Facility Sanitation Report is only used to evaluate enemy prisoner of war (EPW) facilities during combat or contingency operations.

*j.* Laundry operations. Laundry and dry cleaning operations are governed under AR 210–130, which does not address hygiene and sanitation controls. ATP 4–42 addresses field laundry. Chapter 10 of this publication provides the sanitary requirements for water-based (traditional laundry) and chemical-based (dry cleaning) laundry operations.

(1) Laundry operations should follow commercial laundry processes. Hot water and heated mechanical drying are the primary mechanisms used to destroy harmful microorganisms deposited on fabrics.

(2) Application of an antimicrobial agent is recommended for laundry with high potential levels of microorganisms, such as gym towels and athletic clothing, and linens from transient quarters, hospitals, refugee camps, disaster relief operations, prisons, and field operations.

(3) Garrison laundry operations that support medical facility linens, linen issue at troop barracks, or clothing issue through a central issue facility should be inspected at least once every 2 years. Tactical laundry systems are inspected at least once each month when in operation. Inspections of these types of laundry operations are documented on the DOEHRs survey tool, *Laundry Dry Cleaning Report*.

(4) Laundry rooms operated in other inspected facilities such as gyms, beauty shops, and troop barracks are evaluated at the time the facility is inspected; the findings are documented on the applicable facility inspection report.

*k.* Body art operations. Ear piercing is the only authorized body art operation on Army installations. Chapter 11 provides the recommended sanitary controls and discusses the hazards associated with other types of body art.

(1) Ear piercing operations that use disposable applicators are inspected at least once annually. More frequent inspections are required for facilities that are approved to use reusable applicators or sterile needles.

(2) DOEHRs does not support survey data entry for ear piercing operations. Operations occurring within a day spa or beauty shop are documented as specified in paragraph 1–9*b*. Inspection findings for independently-operated ear piercing concessions are summarized in an MFR, and a courtesy copy is provided to the concession manager and as specified in paragraph 1–10*e*.

*l.* Recreational waters. DA Pam 40–11 and TB MED 575 provide the sanitation controls and inspection requirements for recreational water facilities.

*m.* Food service operations. TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP provides the sanitation controls and inspection requirements for food establishments.

## **1–10. Report administration and distribution**

*a.* The person who conducts the inspection signs the inspection forms. His or her signature signifies that a formal inspection was conducted and affirms that he or she discussed the findings and recommended corrective actions with the person in charge of the facility or the designated representative at the time of the inspection.

(1) Handwritten inspection forms are signed at the time of inspection by the inspector and the person in charge of the facility.

(2) At the conclusion of the inspection, the inspector digitally signs any electronic forms completed on a tablet or notebook during the inspection. A digital or capture signature on the form should also be obtained from the person in charge. Creating a capture signature on military electronic devices may require assistance from the installation or command information technology representative.

(3) When a Web-based DOEHRs survey is completed in real time during the inspection, the survey is stamped “complete” by the inspector at the conclusion of the inspection and prior to his/her departing the facility. Stamping the report “complete” prevents further alteration of inspection findings and serves as the inspector’s formal signature.

(a) A capture signature from the person in charge should be obtained in the DOEHRs survey before the report is stamped “complete.” This digital feature requires the use of specific hardware and software tools that have been programmed to support DOEHRs. For additional information or questions regarding DOEHRs, contact the APHC at commercial 410-436-4375; DSN 584-4375; or toll free at 1-800-222-9698, or visit the APHC Web site at <http://phc.amedd.army.mil/Pages/Contact.aspx>.

(b) In the absence of DOEHRs capture signature capability, the inspector may use an electronic or handwritten copy of the DOEHRs Sanitation – Signature/Receipt Form (for DOEHRs mobile). The signed document is scanned and uploaded to the inspected facility’s DOEHRs survey file.

*b.* A copy of the completed inspection report is provided to the person in charge of the facility at the conclusion of the inspection. If the inspection document cannot be reproduced onsite at the time of the inspection, a hard copy or electronic portable document format (.pdf) file is provided within 36 hours.

*c.* Inspections documented in a memorandum do not require a signature from the person in charge. A copy of the completed memorandum should be provided to the inspected facility's manager within 72 hours following completion of the inspection.

*d.* All handwritten and electronic inspection forms, and the memorandums that document inspections, are scanned as a .pdf file and uploaded to the appropriate DOEHS survey file to complete the archived record.

*e.* Report distribution protocols are established locally. At a minimum, reports from facilities receiving a "Noncompliant/Unsatisfactory" inspection rating, to include all associated follow-up inspection reports, are forwarded to the facility manager if different from the person in charge. Additional distribution includes the following, as appropriate:

(1) The next higher level manager having facility management oversight. This individual may be an installation-level coordinator, general manager, or commander.

(2) The Army and Air Force Exchange Service (AAFES) Headquarters Staff Veterinarian, via organizational e-mail account at [food-drug.safety@aafes.com](mailto:food-drug.safety@aafes.com).

(3) The Morale, Welfare, and Recreation (MWR) facility's general manager, or the installation's Director of Family Morale, Welfare, and Recreation.

(4) The applicable Contracting Officer's Representative (COR).

### **1-11. Privatized operations**

*a.* Privatized facilities located on Army installations and providing services to DOD beneficiaries comply with state and local laws and the sanitation standards presented in this publication.

*b.* In general, inspection responsibility rests with the installation medical authority and Preventive Medicine. In accordance with the lease agreement, either the installation has exclusive Federal jurisdiction for regulatory compliance, or there is concurrent jurisdiction between the installation Preventive Medicine and the state or local health department.

(1) Privatized operators maintain an appropriate state or local license to operate, as required by law.

(2) Lease agreements generally specify notification is required at least 24 hours in advance prior to conducting a facility inspection. An exception applies to public health and safety inspections, which may occur at any time without prior notice or coordination with the inspected facility. Unannounced public health assessments are permitted if the purpose/effectiveness of the assessment would be adversely affected by advance notice. Consult with the installation contracting officer and legal representative, as needed, in cases where there are conflicting interpretations of jurisdiction or authorization to conduct inspections at privatized facilities. Questions may also be directed to the ACSIM, Privatized Housing and Lodging Programs points of contact, at commercial 703-545-2537 or 703-697-3832.

(3) Public health inspections conducted by an agent of the privatized facility or contracted by the privatized facility through an external inspection agency may not be substituted for official sanitation and health inspections conducted by Preventive Medicine or a local health department.

*c.* Preventive Medicine inspection personnel collaborate with the local health department when there is concurrent jurisdiction. Collaboration is essential to maintain situational awareness and continuity of public health services.

(1) Establish a memorandum of understanding (MOU) among the medical authority, Preventive Medicine, and the local health department if the health department relinquishes its inspection responsibility to the installation medical authority. The MOU should—

(a) Include signatures from the installation commander, the medical authority or designated representative, and the State or local health department director or designated representative.

(b) Emphasize the authorization for inspection personnel to access facilities unannounced during normal business hours to conduct public health inspections.

(c) Outline the privatized facility manager's responsibility to apply recommendations following an inspection to correct deficiencies that present a risk to public health. Violations are corrected at the time of

inspection, or immediate actions are applied to reduce the risk associated with a critical violation when corrective action to resolve the critical condition cannot be achieved at the time of inspection. Corrective actions for all critical and noncritical violations should be achieved within 30 days.

(d) Provide guidance for formal actions, as described in subparagraph 1–6a(2), that should be taken to prevent recurrence of critical violations.

(2) Sanitation inspections conducted by the local health department are included as part of the official military record and are entered in DOEHRs as specified in paragraph 1–9a.

(3) Separate inspections conducted by Preventive Medicine are not required if the local health department conducts a sufficient number of inspections.

(a) Inspection records are shared between the state/local health department and Preventive Medicine.

(b) Preventive Medicine may participate in the inspection process by conducting independent or joint inspections when needed.

(c) Additional sanitation inspections conducted by the installation public health authority are recommended when the interval between health department inspections is deemed too lengthy. For example, food operations should be inspected at a frequency prescribed in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP or commensurate with the operation's Facility Risk Assessment Survey rating. Public swimming pools operated in privatized housing should be inspected weekly during peak season. **Note:** Swimming pools located at guest lodging facilities may be inspected monthly or less frequently if (1) an annual risk assessment is performed which indicates there are no critical water quality violations and (2) the facility manager or designee is conducting appropriate water quality monitoring.

d. When a rating of "Noncompliant" or "Unsatisfactory" is awarded, a follow-up inspection is scheduled and is documented on the original inspection report that was provided to the person in charge. Follow-up inspections are conducted to confirm that actions have been taken to correct critical violations.

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## CHAPTER 2

### BARBER AND BEAUTY OPERATIONS

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#### Section I – GENERAL INFORMATION

##### 2–1. Professional services

Disciplines within the beauty profession include Barbering, Cosmetology, Esthetics (skin care), Manicuring (nail care; includes pedicure), and Electrology (hair removal using galvanic current or thermolysis, that is, shortwave/radio frequency [RF]).

*a. Licensing.\** Barber and beauty professional services are performed by an employee possessing a valid license and specialty certificate, where applicable (see table 2–1). Licensing is required for each of the disciplines specified above and is renewed IAW the licensing state’s provisions, typically every 2 years. Licensure and renewal requirements for each state are available online at <http://www.beautyschool.com/guide/licensing>.

(1) A certification in Barbering limits the barber’s activity to hair cutting and shaving and does not allow the performance of chemical hair treatments or other beauty services.

(2) A certification in Cosmetology encompasses hair cutting, styling, and chemical treatments; hair removal by waxing or tweezing; and may include basic nail services, such as trimming and polishing.

(3) Specialty branches within Cosmetology include Manicurist, Nail Technologist, Esthetician, and Electrologist. Each of these specialties requires specific licensing to perform the associated services.

(4) The threading technique for hair removal is not a standard Cosmetology procedure regulated through licensing. Threading is commonly practiced in Eastern countries, such as Egypt and India, and is typically passed down through the generations; formal training is not common. The sanitary controls presented in this chapter for threading operations are evaluated by Preventive Medicine when the service is provided on Army installations.

(5) Barber and beauty shops may not operate an apprenticeship program except as specified in paragraph 2–19*b* for deployment settings. Unlicensed individuals in a training status may not perform barbering or cosmetology services, regardless of whether the individuals are under the direct supervision of a licensed employee.

*b. Preoperational inspection.* A request to operate a barber or beauty service or to expand the scope of services at an existing facility is submitted at least 30 days prior to the intended start date.

(1) Submit requests to Preventive Medicine. Approval to begin requested services is contingent upon passing a preoperational inspection conducted by Preventive Medicine.

(2) Include the following information when submitting a request to operate or to add professional services:

(a) Name and location of the operation.

(b) Manager’s contact information: email (if available), business address, and work phone.

(c) List of services (as characterized in table 2–1).

(d) List of employees and job title. Identify all of the specialty services conducted by each employee.

(e) Employee licensure information. A copy of each employee’s license and applicable certificate(s) is not required as part of the service request process but must be available for review at the facility during the preoperational inspection. Employee licensing data includes the license type, the licensing source (the institution name and State or country), the date licensed, and the license expiration date. The organization sponsoring (or contracting) the beauty operation is responsible for the initial validation of employee licensure, which is conducted prior to the preoperational inspection. A valid, unexpired license for each employee is retained at each facility where the employee works.

*c. Request to increase services.* Increasing the scope of services at an existing facility requires the facility manager to submit a new service approval request through the Preventive Medicine (Environmental Health) office having inspection jurisdiction. The service request should identify the new category or service(s) being added to the

operation, as well as the new and existing employees who are qualified to perform the service(s). The service request should also include a copy of the appropriate licensure or certification data for the identified employees.

d. Special services approval. The facility sponsor (for example, AAFES) or manager requests approval from Preventive Medicine to provide services that are not addressed in this chapter.

(1) The sponsor or facility manager is responsible for providing to the supporting Preventive Medicine office all relevant technical information regarding the device, treatment process, and its associated cosmetics or products.

(2) Before approving specialty services, Preventive Medicine assesses its ability to provide adequate public health oversight for the operation. A beauty operation risk assessment is conducted to determine if an adjustment to the inspection frequency is required due to the added service(s).

**Table 2–1. Beauty services**

Category <sup>†</sup>	Service	Description	Licensing Requirement
A	Hair cutting	Cut, shave, shampoo, dry (heat application)	Barber or Cosmetology license
B	Hair removal	Tweeze, pluck, wax, threading <i>Note: Threading is not a licensed activity.</i>	Cosmetology license
C	Hair treatment	Chemical hair treatments: straightening, braiding, weaving, coloring, permanents	Cosmetology license
D	Nail treatment	Manicure/pedicure, hand/foot baths, polish, trim, color, nail extensions, nail jewelry application	Cosmetology license and certification as a Nail Technician or Manicurist
E	Skin treatment	Facials; skin wraps; makeup application; head, neck, shoulder, hand/foot massage; mud bath; hand/foot paraffin wax	Cosmetology license and certification as an Esthetician or Skin Care Specialist
F	Spray tanning	Application of a skin-coloring chemical	Cosmetology license and certification to perform spray tanning
G	Massage	Therapeutic/relax treatments involving whole body or select regions (arms, legs, shoulders, or back)	Massage Therapist license
H	Ear piercing	Piercing the fleshy portion of the earlobe	Operator training certificate
I	Water or heat spa	Facility contains a hot tub (spa), sauna room, or steam room for whole body treatment. <i>Does not include foot baths and foot spas (see nail treatment).</i>	The water spa operator must have a pool/spa operator training certificate IAW TB MED 575 for recreational water.
<sup>†</sup> Beauty services are grouped into nine categories for the purpose of conducting a facility risk assessment. Refer to appendix C.			

## 2–2. Beauty operation hazards

Barbering and beauty services present a wide variety of biological, chemical, and physical hazards. Although all hazards are considered during a public health inspection, greater emphasis is placed on the control of biological threats. Table 2–2 presents the hazards commonly associated with barbering and cosmetology services, collectively referred to as “beauty operations.”

Table 2–2. Beauty operation hazards

Description	Hazards <sup>1</sup> (to patrons and/or employees)	Risk Level <sup>2</sup>	Residual Risk Controls Applied
HAIR WASHING	<b>BH1.</b> Physical: hot water (scalding) <b>BH2.</b> Biological: Communicable diseases: respiratory (tuberculosis); parasites (lice); bacterial (impetigo, staphylococci); and fungal ( <i>Tinea capitis</i> , scalp ringworm; <i>Tinea barbae</i> , face/neck ringworm)	Low (E-II)	Low
HAIR CUTTING: Trim/cut; shave	<b>BH3.</b> Physical: minor skin abrasions (nicks, cuts) <b>BH4.</b> Biological: bloodborne viruses (Hepatitis B, HIV) <b>BH5.</b> Communicable diseases: See <b>BH2.</b> <b>BH6.</b> Chemical: minor skin irritations from unauthorized skin antiseptics or improper use of disinfectants	Moderate (D-III)	Low
HAIR TREATMENTS: Coloring; permanents; weaving; extensions; straightening	<b>BH7.</b> Biological: See <b>BH2</b> and <b>BH4.</b> <b>BH8.</b> Physical: Skin burns due to improper use of beauty supplies and heating elements <b>BH9.</b> Eye injury from improper application and control of beauty supplies (product dripping or spraying into eyes) <b>BH10.</b> Inhalation of noxious vapors from beauty supplies and disinfectants	High (C-II)	Low
HAIR REMOVAL: Tweeze; pluck; threading	<b>BH11.</b> Biological: communicable respiratory disease transmission; bloodborne viruses <b>BH12.</b> Physical: cutaneous abrasions (skin irritation; skin infections; rashes; follicle irritation or damage; ingrown hairs)	Moderate (C-III)	Low
HAIR REMOVAL: Waxing	<b>BH13.</b> Biological and physical: See <b>BH11</b> and <b>BH12</b> ; includes skin infection, pitting, scarring, and rashes <b>BH14.</b> Burns from excessively hot wax <b>BH15.</b> Skin tearing from improper waxing procedures; cutaneous abrasions and bruising derived from the ripping or removal of the outer skin layer	Moderate (C-III)	Low
INVASIVE PROCEDURES: Treatment of ingrown hairs; electrolysis; laser hair removal	<b>BH16.</b> Bacterial, viral, and fungal infections; bloodborne viruses <b>BH17.</b> Severe burns and damage to dermal tissue layer	Extremely High (B-I)	Prohibited practice

Description	Hazards <sup>1</sup> (to patrons and/or employees)	Risk Level <sup>2</sup>	Residual Risk Controls Applied
NAIL TREATMENTS: Manicure and pedicure (includes paraffin wax treatments, foot bath, cuticle treatment, and callus treatment)	<b>BH18.</b> Communicable respiratory disease transmission <b>BH19.</b> Fungal and bacterial infections (improper equipment or linen cleaning/disinfection) <b>BH20.</b> Cutting into dermal layer of the skin (See <b>BH4.</b> ) <b>BH21.</b> Burns from excessively hot wax <b>BH22.</b> Skin tearing from improper waxing procedures <b>BH23.</b> Cutaneous abrasions and bruising (susceptible persons) derived from the ripping or removal of the outer skin layer; includes infection, pitting, scarring, and rashes	High (C-II)	Low
NAIL TREATMENTS: Nail coloring, polishing, and extensions	<b>BH24.</b> Communicable respiratory disease transmission <b>BH25.</b> Fungal and bacterial infections (improperly disinfected implements and applicators) <b>BH26.</b> Noxious odors (acetone and other solvents; glues, adhesives, and polishes). <b>BH27.</b> Dust irritants (grinding or sanding natural or artificial nails)	Moderate (C-III)	Low
NAIL TREATMENT: Nail jewelry application	<b>BH28.</b> See <b>BH18</b> and <b>BH19.</b> <b>BH29.</b> Bloodborne viruses (nail bed is penetrated to living tissue layer) <b>BH30.</b> Noxious odors (See <b>BH26.</b> )	High (C-II)	Low
BODY ART: Ear piercings	<b>BH31.</b> Communicable diseases (respiratory) <b>BH32.</b> Skin disease: ringworm, impetigo, staph infection <b>BH33.</b> Bloodborne viruses: HIV, Hepatitis B and C <b>BH34.</b> Susceptible persons: heart disease and some medications increase potential for endocarditis (bacterial infection of heart valve). <b>BH35.</b> Permanent injury to nerve tissue and muscle tissue	High (B-II)	Low
BODY ART: Tattoo, Henna, scarification, body piercing	<b>BH36.</b> See <b>BH31–BH35.</b> <b>BH37.</b> Henna: exposure to toxic chemicals [solvents, p-phenylenediamine (PPD)], chemicals enter bloodstream, dizziness, tight chest, nausea, dermatitis/skin irritation, reddening, blistering	Extremely High (A-II)	Prohibited practice
SKIN TREATMENTS: Facials, body wraps, mud baths, makeup application	<b>BH38.</b> Communicable diseases: respiratory infections and gastrointestinal infections <b>BH39.</b> Fungal, bacterial, and viral (Norovirus) infections <b>BH40.</b> Allergic reactions to beauty supplies: rash, dermatitis <b>BH41.</b> Toxic absorption of chemical through skin, resulting in illness <b>BH42.</b> Skin discoloration <b>BH43.</b> Inhalation and ingestion of chemical vapors or skin products applied to the face <b>BH44.</b> Skin abrasions or burns	High (C-II)	Low

Description	Hazards <sup>1</sup> (to patrons and/or employees)	Risk Level <sup>2</sup>	Residual Risk <i>Controls Applied</i>
SKIN TREATMENT: Spray tanning	<b>BH45.</b> Fungal, bacterial, and viral infections <b>BH46.</b> Skin and eye irritation <b>BH47.</b> Inhalation of harmful vapors such as Dihydroxyacetone (DHA) <b>BH48.</b> Mucous membrane irritation <b>BH49.</b> Ingestion of chemicals	Extremely High (B-I)	Moderate
MASSAGE: whole body, relaxing, therapeutic/sports	<b>BH50.</b> Communicable diseases: respiratory infections and gastrointestinal infections <b>BH51.</b> Fungal, bacterial, and viral (Norovirus, herpes cold sores) infections from open or unhealed wounds, skin abrasions/infections, or hand hygiene <b>BH52.</b> Injury to muscles and nerve damage: deep tissue therapy <b>BH53.</b> Susceptible persons: bleeding disorders or low blood platelet count; individuals taking blood-thinning medications such as warfarin; pregnant women; arthritis and weakened bones; release of blood clots <b>BH54.</b> Allergic reaction to massage oils or applications: rash, dermatitis <b>BH55.</b> Toxic exposure to chemicals (detergents, disinfectants) <b>BH56.</b> Burns from hot stone therapy	Extremely High (B-I)	Low
WATER SPA (hot tub/spa)	<b>BH57.</b> Persons with open sores, scratches, or scrapes are susceptible to non-fecal-derived viruses, bacteria, protozoa, and fungi. <b>BH58.</b> Infection or illness from ingestion, inhalation or contact with pathogens in fecal-contaminated water <b>BH59.</b> Legionnaires' disease: inhalation of mists/sprays from the pools <b>BH53.</b> See BH79. Fungal/yeast infection: <i>Candida albicans</i> <b>BH60.</b> Drowning <b>BH61.</b> Chemical burns or skin, eye, and respiratory irritation from chlorine and other pool chemicals <b>BH62.</b> See BH70. Exposure to high-temperature pools may cause overheating and dehydration; heat injuries; injuries to pregnant women <b>BH63.</b> Slips and falls from wet floors	Extremely High (B-I)	High

Description	Hazards <sup>1</sup> (to patrons and/or employees)	Risk Level <sup>2</sup>	Residual Risk Controls Applied
HEAT SPA (sauna or steam room)	<b>BH64.</b> Bacterial, fungal, and viral infections as specified for “hygiene facilities:” <i>Klebsiella</i> ; human papillomavirus (HPV); <i>Candida</i> . <b>BH65.</b> Skin irritations or noxious vapors from cleaners and disinfection chemicals <b>BH66.</b> Slips and falls from wet surfaces <b>BH67.</b> Electric shock from lighting fixtures <b>BH68.</b> Overheating and dehydration: dizziness, nausea, fainting, heat stroke, death <b>BH69.</b> Increased heart rate, chest pains, or shortness of breath: persons with cardiovascular condition or high blood pressure <b>BH70.</b> Pregnant women: low blood pressure due to high humidity and high temperature combination results in low oxygen and nutrient intake by fetus; birth defects <b>BH71.</b> Excessive exposure to UVB radiation can cause the skin to burn and directly damages DNA <b>BH72.</b> Excessive exposure to high heat condition may affect male and female future fertility <b>BH73.</b> Burns from contact with heating element <b>BH74.</b> Splinters from damaged wood seating surfaces	Extremely High (A-I)	High
LINENS & FOOTWEAR: towel, robe, slippers or shower shoes	<b>BH75.</b> Biological (bacteria, fungus, virus) from contaminated shower shoes and linens: skin infection ( <i>Staph</i> ); <i>Klebsiella</i> bacteria may cause urinary tract infection, pneumonia, blood infections; Norovirus <b>BH76.</b> Parasite infestation on robes/linens: lice	Moderate (D-II)	Low
HYGIENE FACILITIES: Shower room	<b>BH77.</b> Bacterial, fungal, and viral infections from walking barefoot: <i>Klebsiella</i> ; HPV can cause warts in throat, mouth, and feet (plantar warts) and can lead to cervical, penile, and anal cancer. <b>BH78.</b> Viral and bacterial infections from contaminated surfaces (sinks, toilets, benches) <b>BH79.</b> Mold and mildew from poor ventilation that allows excessive moisture to remain for extended periods: can produce <i>Candida</i> , a yeast-fungus that can lead to athlete’s foot, jock itch, ringworm, and, in women, yeast infection <b>BH80.</b> <i>Legionella</i> aerosolized in shower head <b>BH81.</b> Skin irritations or noxious vapors from cleaners and disinfection chemicals <b>BH82.</b> Slips and falls from wet surfaces <b>BH83.</b> Electric shock from use of hair dryers or other electrical devices	Extremely High (A-II)	Moderate

Description	Hazards <sup>1</sup> (to patrons and/or employees)	Risk Level <sup>2</sup>	Residual Risk Controls Applied
ONSITE LAUNDRY	<b>BH84.</b> Infectious biological agents: Norovirus, methicillin-resistant <i>Staphylococcus aureus</i> (MRSA) <b>BH85.</b> Skin and eye irritation from detergents and other cleaning agents <b>BH86.</b> Respiratory distress: Ethanol, benzyl alcohol, and linalool are strong chemicals used in creating the scents of laundry detergents and household cleaners. Inhalation in large quantities causes respiratory distress in some individuals, especially those with asthma or other respiratory diseases. <b>BH87.</b> Slips, trips and falls from wet floors or cluttered spaces <b>BH88.</b> Fire from improper storage/management of soiled and clean linens/clothing/towels <b>BH89.</b> Electric shock from frayed power cords <b>BH90.</b> Muscle strains from lifting, bending, or twisting during laundry management <b>BH91.</b> Heat stress: Exposure to excessive heat can result in heat exhaustion and heatstroke.	Moderate (C-III)	Low
FOOD CONCESSION: juice bar, nutrition bar	<b>BH92.</b> Foodborne illness: infection or intoxication <b>BH93.</b> Physical hazards may exist from use of knives and/or cooking equipment. <b>BH94.</b> Chemical hazards from cleaners and sanitizers	Moderate (C-II)	Low
<sup>1</sup> Beauty operation hazards (BH) <sup>2</sup> Estimated risk levels were derived using step 2 of the hazard assessment process presented in ATP 5–19. See appendix C. DNA = deoxyribonucleic acid; UVB = ultraviolet B			

## 2–3. Restricted practices and instruments\*

a. Beauty services or practices that are assessed as extremely high risk are prohibited on Army installations. This decision is primarily based on the absence of national standards as well as on the disparate licensing renewal requirements that exist among the states. Although core requirements for licensure are relatively consistent across the U.S., requirements for licensing renewal vary widely from state to state. Some states require certified employees to submit proof of continuing education credits; other states simply require employees to pay a renewal fee without further demonstrating their knowledge or competencies. The absence of standardized licensing and renewal mechanisms within the DOD further justifies restricting certain practices on Army installations. The disciplines and techniques within the beauty industry are rapidly-evolving, making it difficult for installation public health professionals to remain informed regarding the risks and controls associated with each practice. Prohibited services include—

- (1) Applying eyelash extensions.
- (2) Ear candling or removal of wax from the ears using a heated implement or vacuum procedure.
- (3) Sunless tanning using ultraviolet (UV) radiation (refer to paragraph 3–2).
- (4) Therapeutic practices such as treating infected hairs, sores, or lesions; removing ingrown hairs; and squeezing pimples.
- (5) Fish spas and fish pedicures.

b. Except for practices executed by a licensed medical practitioner under the military health care system, beauty services involving invasive procedures are prohibited. Invasive procedures are those acts which affect the structure

or function of living tissue of the face or body. Examples of procedures or practices that may become invasive include, but are not limited to—

- (1) Applying electricity which contracts the muscle. For example, electrolysis for hair removal uses a direct (galvanic) current which penetrates into the dermal (living tissue) layer of the skin.
  - (2) Use of a laser or laser-like device for skin treatment or performance of body art.
  - (3) Penetration of the skin by metal objects (needles, razor blades, lancets). Ear piercing operations are exempt from this prohibition; refer to chapter 11. Prohibited practices include—
    - (a) Comedone extraction (whitehead removal).
    - (b) Treatment of ingrown hairs.
    - (c) Cosmetic tattooing (for example, eyebrows).
  - (4) Abrasion of the skin below the nonliving (epidermal) layer. Examples include—
    - (a) Using electrical instruments or automated applicators such as microdermabrasion devices or facial machines to abrade the skin for the purpose of exfoliation or other skin conditioning. This provision does not apply to handheld electrical instruments that use a nonabrasive pad or soft brush to apply topical exfoliating products.
    - (b) Using a metal rasp for callus treatment.
    - (c) Skin exfoliation, microdermabrasion, and treatment of blackheads. These are authorized only when creams and other emulsions are manually applied without the use of an abrasive applicator.
  - (5) Removal of skin by means of razor-edged instruments or clippers, such as cutting cuticles and shaving calluses.
- c. Instruments commonly associated with prohibited practices are not authorized in a barber or beauty facility. Prohibited instruments include—
- (1) Credo knives and similar razor-edged tools designed to remove or treat calluses.
  - (2) Metal rasps.
  - (3) Needle-like instruments and lancets typically used for the purpose of extracting skin blemishes, injecting inks or dyes, and for other procedures involving penetration of the skin. Needles used for hair weaving are authorized.
  - (4) Straight razors used for shaving. Single-use (disposable) razors are authorized.
- d. Cosmetics containing ingredients prohibited or restricted under FDA regulations are prohibited from use.
- e. Beauty supplies that present an increased risk for bacterial growth or the transmission of harmful microorganisms to patrons may not be used. Restricted supplies include—
- (1) Styptic pencils to stop bleeding.
  - (2) Multiuse powder puffs.
  - (3) Natural-fiber neck dusters and brushes.
  - (5) Glucose (water soluble) wax.
  - (6) Sugar-based pastes.

## **Section II – FACILITY REQUIREMENTS AND APPROVED SUPPLIES**

### **2–4. Physical facilities**

- a. Location. Do not perform barber and beauty services in food service, food storage, or sleeping areas. Separate entrances and ventilation systems and physical separation of the operation by walls extending from floor to ceiling are required when barber and beauty services are performed in the same building as a food operation or sleeping area.
- b. Ventilation. Provide adequate ventilation to keep work areas free of the obnoxious odors generally associated with hair, nail, or skin treatment chemicals. Provide ventilation in shower rooms, water spas, and laundry facilities to control condensation, odors, and mold growth.
- c. Plumbing fixtures.

(1) *Water.\** Provide hot water that is at least 120°F (49°C) at point of use; cold running water; proper plumbing fixtures; and adequate sewage and solid waste disposal.

(a) Supply all handwashing sinks with hot and cold water.

(b) Install and maintain plumbing fixtures to prevent a cross-connection with the potable water system.

(2) *Sinks.*

(a) Provide at least one hand wash sink located within the service area of the facility.\*

(b) Provide an additional sink for every seven patron chairs or work stations. Sinks may include a combination of shampoo sinks and general purpose (hand wash) sinks that are located outside of the toilet room. For example, two sinks located in the service area are required for a facility configured with seven work stations.

(c) Locate sinks in areas that are convenient and readily accessible to employees. A shampoo sink may be used as a hand wash sink.

(d) Supply all sinks used for handwashing with hand soap and disposable paper towels at all times.

(e) Equip toilet rooms located inside the beauty facility with a hand wash sink.\*

(3) *Fixtures.* Installation of hands-free faucets such as wrist-blade or knee-operated fixtures or other hands-free activated faucets for employee hand wash sinks and employee/patron bathrooms are recommended for new or renovated facilities. Use of these fixtures will minimize recontamination of employees' hands during daily operations. Wrist-blade faucets are not recommended at shampoo stations because they may pose a safety hazard and interfere with proper hair care.

*d. Lighting.* Provide a minimum light intensity of 50 foot candles (540 lux) at hair cutting/styling and nail treatment stations, and inside shower, toilet, and laundry rooms.

*e. Waste receptacles.* Provide covered sanitary receptacles for waste materials and soiled linens.

(1) Locate a waste receptacle at hand wash sinks.

(2) Clearly label containers used to hold soiled linens.

*f. Industrial hygiene support.* Industrial hygiene services should include periodic assessments of barber and beauty shops, day spas, and nail care facilities. Industrial hygiene evaluates facility illumination, the efficacy of local exhaust and ventilation systems, and potential exposures to toxic chemicals, including nail glues and hair treatment chemicals.

## **2–5. Approved beauty products and antimicrobials\***

*a. Cosmetics.* Except as specified in subparagraph 2–5*e*, use only those beauty products (cosmetics) that are regulated by the FDA and safe for application to the body. Exercise caution in the use of cosmetics as some preparations have been implicated in skin and eye irritation and hair loss.

(1) Cosmetics manufactured in the U.S., and foreign-brand products applied to the hair, nails, or skin must not be “adulterated” or “misbranded.” Products must be properly labeled and safe for consumers when used according to the directions on the label and applied using customary or expected methods.

(2) Refer to the FDA Web site at <https://www.fda.gov/Cosmetics/default.htm> for restricted, prohibited, or recalled cosmetic ingredients. Assistance from the Army Office of the Surgeon General, Dermatology consultant, may be required to assess foreign-brand products.

(3) Determine patron sensitivity to skin products by applying a small amount of the product to the patron's back or forearm before the product is administered.

*b. Antimicrobials.* Provide appropriate antimicrobial products for use on equipment, instruments, and physical facilities. Antimicrobial products for barbering and cosmetology instruments, applicators, and equipment are EPA-registered, hospital-grade disinfectants or similar products that are specifically formulated (and EPA-registered) for barbering tools (for example, Barbicide®). Use table 2–3 as a guide for selecting an appropriate antimicrobial product when barbering products are not available. Additional guidance regarding antimicrobial agents and preparing chlorine bleach solutions is provided at appendix B.

*c. Antiseptics.* Provide antiseptics that are FDA-approved or otherwise authorized by the medical authority for use on patrons' skin.

d. Ultraviolet lamps. Use of UV lamps as the only means of disinfecting instruments and equipment is prohibited. Preventive Medicine must evaluate and approve other methods for disinfecting instruments and equipment, such as ozone use, before they are implemented.

e. Foreign brands. Foreign brands, for example, brands that meet European Union (EU) standards for beauty products and disinfection, may be used overseas when approved by Preventive Medicine or the Command Surgeon. Disinfectants should be specifically formulated for barbering tools and should have bactericidal, fungicidal, and virucidal properties. Germicides should be formulated with mycobactericidal properties because mycobacteria are one of the most resistant groups of microorganisms.

**Table 2–3. Antimicrobial agents for beauty equipment and implements**

Antimicrobial Agent	Application	Additional Guidance
Quaternary ammonium (quats)	Combing and setting implements	Mix IAW manufacturer’s recommendation. Mixing 2/3 ounce (20 milliliters) of quats with 1 gallon of water (3.8 liters) produces a 1,000-parts per million (ppm) solution, which will kill Herpes simplex virus, Influenza A, Adenovirus type 3, Staph bacteria, and fungus. For safety, the solution should not be mixed stronger than 1000 ppm. Follow the manufacturer’s instruction for recommended contact time.
Alcohol: Ethanol or Isopropyl at 70% strength	Metal implements: blow-comb attachments manicure tools, scissors	All nonelectrical implements or devices are cleaned and then completely immersed in the disinfecting solution for 10 minutes or as specified on the manufacturer’s label. <i>Do not dilute the alcohol before use.</i>
	Electrical instruments: curling irons, electric clippers and shapers	Electrical devices are wiped or brushed clean to remove oils, chemical residues, and hair debris before alcohol is applied. Alcohol is swabbed or sprayed onto surfaces and allowed to air dry before next use. <i>Do not dilute the alcohol before use.</i>
Phenolic environmental disinfectants or diluted forms of ammonium	Physical facilities, equipment, and fixtures: shampoo bowls, foot baths, sinks	Use IAW label. For specialty equipment, follow the recommended disinfecting procedures provided in the equipment’s user manual.
Chlorine bleach: 200 ppm	Nonelectrical and nonporous implements: combs, brushes, scissors, manicure tools	<b>Note:</b> <i>Chlorine solution may corrode metal implements.</i> Allow items to soak for 10 minutes. Rinse instruments under running water and then dry with a clean towel before storing or using them.
Chlorine bleach: 500 ppm	Disinfect: Foot bath (pedicure spa), sinks, toilets	Foot bath: Allow 10-minute contact time before rinsing with clean water. Sinks/toilets: Allow 1-minute wet contact; then rinse with clean water to remove residual.

## Section III – GENERAL SANITATION REQUIREMENTS

### 2–6. Management controls

#### a. Policy and procedures.

(1) *Posting of regulation.* Allow customer access to the sanitary rules and regulations governing salons or shops by posting or maintaining a copy of this chapter in an open area in the facility (such as in a folder on a magazine rack).

(2) *Standard operating procedures.* Develop local SOPs for the following actions, as applicable:

(a) Assembly and disassembly of equipment, as required, for conducting cleaning and disinfection. Equipment user manuals may be used to supplement the SOP and must be readily available at the facility.

(b) Cleaning, disinfecting, and storing electrical and nonelectrical equipment, devices, and implements.

(c) Storing and handling bulk supplies of disposable items, waxes, lotions, tonics, emulsions, linens, and other supplies used with patrons.

(d) Preparing disinfection solutions from a concentrate (for example, chlorine solution, Barbicide); and verifying solution concentrations.

(e) Evaluating patrons for skin infections, hair infestation, and medical conditions that require a restriction of services. Include specific guidelines and procedures regarding refusal of service.

b. *Employee health and hygiene.*

(1) *Health assessment.* The installation medical authority determines the need for establishing formal requirements and confirms it in a written policy regarding the following:

(a) Employee pre-employment medical evaluations to ensure freedom from communicable disease.

(b) Examinations of employees before their return to work after an illness.

(c) Special examinations, such as tuberculosis testing.

(2) *Illness.\** Employees may not work when ill with communicable disease, diarrhea, vomiting, sore throat with fever, exposed skin sores, burns, infections, or other health conditions that may transfer disease agents to a patron.

(3) *Clothing.* Employees wear a clean smock or uniform when attending patrons. Smocks and uniforms are changed daily and when they become heavily soiled (for example, due to spilled products) during the course of the business day.

(4) *Hygienic practices.*

(a) Eating or drinking. Employees and patrons may not eat or drink at hair, nail, or skin treatment work stations. Confine eating and drinking to designated break areas and other locations that are separated from the service area by a wall or a partition of suitable size to prevent hair or chemical contaminants from entering the break area. Refer to TB MED 530/NAVMED P-5010-1/AFMAN 48-147 IP for food operation compliance requirements.

(b) Handwashing.\* Employees wash their hands after attending each patron; performing custodial duties such as handling trash, handling soiled linens, sweeping floors, and cleaning equipment; eating or drinking; smoking or tobacco use; and using the restroom. The use of hand sanitizers may not be substituted for proper handwashing except when a temporary authorization is provided by the installation public health authority.

(c) Tobacco use. Enforce tobacco use restrictions (including electronic/vapor cigarette use) according to DOD and installation policy for use outside of the facility.

c. *Patron skin infections and lice.\** Examine patrons prior to providing a service to ensure there is no evidence of disease, infection, or sores; restrict services as appropriate.

(1) Prior to cutting hair or conducting hair treatments, examine the patron's scalp and back of the neck.

(2) Do not serve patrons whose face, neck, or scalp is inflamed or exhibits sores, pimples, or erupted boils unless the patron provides written consent from a medical practitioner.

(3) Immediately refer patrons with evidence of lice or nits to seek medical treatment.

(4) Prior to conducting skin or nail treatments, examine the patron's face, hands, and feet, as applicable.

## 2-7. Operational controls

a. *Area cleanliness.*

(1) Maintain sanitary conditions throughout the facility at all times. Remove cut hair from floors frequently, at least hourly during high-volume service periods. Clean floors using a push broom or vacuum, and then wet mop with an appropriate floor cleaning product.

(2) Mop floors at least once daily.

- (3) Clean and disinfect toilet rooms, sinks, and treatment chairs daily.\*

*b. Contamination barriers.*

(1) *Headrests.* Cover barber chair headrests with a new disposable paper towel or clean towel for each patron. The patron's hair and skin may not come into direct contact with the headrest.

(2) *Haircloths.* Reusable haircloths (capes) may not come into direct contact with the patron's skin (neck). Use freshly laundered towels or individual, disposable sanitary neck strips for each patron. Change (launder) reusable haircloths/capes whenever they become soiled, or at least daily.

*c. Bleeding.\**

(1) Use disposable tissue to stop bleeding that results from shaving or a hair removal procedure.

(2) Styptic pencils are prohibited for use, as specified in subparagraph 2–3e(1). Use only powdered or liquid astringents (antiseptics), applied with a clean disposable applicator, paper neckband, or paper towel.

(3) Immediately discard disposable items contaminated with blood. Refer to subparagraph 2–8d for management of contaminated disposable razors.

## 2–8. Instrument and equipment controls

*a. Natural fiber and common-use brushes.\** Natural-fiber and common-use brushes (that is, neck dusters and shaving brushes) and multiuse sponges and powder puffs may not be used, as specified in paragraph 2–3e. Use synthetic hairbrushes that are specifically designed to allow adequate cleaning and disinfection between patrons. To dispense and apply shave cream, use automatic dispensers and brushless application methods.

*b. Disinfecting solutions.*

(1) Prepare instrument disinfecting solution fresh each day or more frequently when it becomes visibly cloudy, dirty, or diluted.

(2) Provide covered containers that are appropriately sized (for example, Barbicide jars) to accommodate all instruments during disinfection. Ensure a sufficient volume of disinfecting solution is provided to allow complete immersion of implements during the disinfection process.

(3) For concentrated disinfecting products that require dilution with water prior to use, verify the final concentration each time a new solution is prepared.

(a) Product concentration is verified using chemical test strips or kits, or a color chart provided by the product manufacturer. Maintain the appropriate color chart or testing materials at the facility at all times.

(b) Refer to appendix B for chlorine bleach mixing formulas.

*c. Instrument cleaning and disinfection.\**

(1) Clean and disinfect multiuse barbering and cosmetology implements and equipment after use on each patron and at the close of each day's operation. Multiuse tools include, but are not limited to, combs, brushes, scissors, tweezers, clippers, curling irons, and cosmetic applicators.

(2) Use all disinfectants according to label instructions or as specified in table 2–3.

(3) Apply the following procedures for cleaning and disinfecting implements and equipment:

(a) Except when immediate cleaning and disinfection are required as specified in subparagraphs (3)(c) and (d), below, those implements that are not cleaned and disinfected immediately following their use with a patron are placed in a container labeled to indicate the contents are "soiled" or "used" and are cleaned and disinfected no later than the end of the current business day.

(b) Clean and disinfect implements immediately after use if, during the course of a patron's service, it is suspected that the patron has a communicable disease or infection.

(c) Immediately clean and disinfect implements that are not intended to penetrate the skin but become contaminated with blood during a patron service.

(d) Thoroughly wash nonelectrical instruments such as scissors, combs, applicators, and other plastic or metal implements with soap and hot water to remove all film, oil, and debris. Dry the instruments with a clean towel or disposable tissue before placing the items in the disinfecting agent. **Note:** *Failure to dry implements before disinfection treatment will dilute the disinfectant and reduce the effectiveness of the disinfection process.*

(e) Completely immerse cleaned (nonelectrical) items in an approved disinfecting solution for the minimum prescribed contact time identified on the product label, or as specified in table 2–3. **Note:** *Open the scissors during disinfection to allow maximum surface contact.*

(f) Rinse nonelectrical instruments with potable running water to remove chemical residues if the implement was disinfected by immersion in a chemical solution.

(g) Remove hair debris and residues from the exterior surface of electrical instruments prior to their disinfection. A stiff bristle brush designated for cleaning use only may be used for hair clippers and electric shavers. Use a clean towel or disposable wipe to remove residues from blow-combs, curling irons, and similar devices.

(h) Disinfect the hair- or skin-contact portion of electrical instruments by swabbing or spraying with an approved disinfectant.

(i) Air dry disinfected instruments, or use a clean cloth or paper towel prior to storage or reuse. Ultraviolet light cabinets are acceptable for storing clean and disinfected implements but may not be used as the sole method for disinfecting or drying implements.

(j) Store cleaned and disinfected implements in a clean and covered container or drawer.

(k) Maintain correct wet disinfection and dry storage standards at all times.

*d. Razors.*

(1) Multiuse razors, sling blades, or Kaiser Blades may not be used.\*

(2) Discard disposable razors immediately after their use on a single patron.\* Used razors should be placed in a rigid container with a large enough opening at the top to allow razors to drop in easily without having to be bent or broken.

(a) Plastic containers should have a tight-fitting cap, and cardboard containers should have a closeable lid or flap that can be secured with tape prior to disposal. Filled containers may be disposed as general waste.

(b) Additional treatment (that is, disinfection) of disposable razors prior to disposal is not required.

(3) Use of electric shavers is discouraged because they are difficult to clean and disinfect between patrons. If used, electric shavers should be designed with a removable blade guard to allow proper cleaning and disinfection between patrons as specified in subparagraph 2–8c(3).

*e. Other equipment and supplies.* Electrical equipment and devices, to include electric/automated massage chairs, manicure/pedicure equipment, and facial vaporizers, are cleaned and disinfected IAW the manufacturer's written instructions. Retain a copy of the equipment operator's manual in the facility for employee use and inspector review as specified in subparagraph 2–6a(2)(a).

(1) Empty, clean, and disinfect facial vaporizer reservoirs daily. Clean or replace facial vaporizer filters IAW the manufacturer's instructions.

(2) After their use on a single patron, discard all implements and supplies which come into direct contact with a patron and which cannot be cleaned and disinfected properly due to their porous properties. Disposable items may not be retained for use with another patron. Items constructed of porous or absorbent materials, such as paper, cardboard, open-celled foam pads, and threading fibers, cannot be adequately cleaned and disinfected. Generally, only metal or plastic implements are multiuse. Examples of porous implements that may not be retained for multiple use include, but are not limited to, sanding blocks, pumice stones, cardboard emery boards, and toe separators. Wash, sanitize and fully dry multiuse chamois and felt buffing/polishing burrs before using them with another patron.

(3) Store single-use items such as cotton pads, emery boards, applicators, threading fibers, and paper neckbands in clean and covered containers or drawers.

*f. Linens.* Cloth coverings for massage tables and skin treatment tables; towels; and robes are removed for laundering after use by a single patron.

(1) Launder linens in hot water with a minimum wash temperature of 140 degrees Fahrenheit (°F) (60 degrees Celsius (°C)).

(2) Thoroughly dry linens using a mechanical dryer with heat.

(3) Protect clean linens from contamination by storing them separately from soiled linens. Label containers as specified in subparagraph 2–4e(2).

## **2–9. Beauty product controls\***

Protect cosmetics (liquids, creams, emulsions, waxes, and other skin applications) from becoming contaminated and transferring contaminants to patrons by—

*a.* Storing them in clean and closed containers when not in use. The inside of containers, to include the inside of the lid and inner container threads, may not have evidence of contamination such as hair particles or other debris.

*b.* Dispensing products using a multiuse pump or spray dispenser, or by removing from the original bulk container only the amount of a cosmetic preparation that is needed for a single patron service.

(1) Pump dispenser heads on product containers that are used continuously during a single patron service, such as the application of oils during a massage or other skin treatment, are wiped clean with an antimicrobial agent between each patron service.

(2) Unused portions of extracted products from a bulk container are disposed; they are not returned to the bulk container or used with another patron.

*c.* Sharpening pencil cosmetics before each use.

*d.* Using separate disposable applicators to extract a product from the bulk container and to apply the product to the patron. Multiuse applicators are washed using an appropriate detergent and disinfected between each patron, as specified in paragraph 2–8*c*.

## **2–10. Foot baths and pedicure spas\***

*a.* Cleaning frequency. Clean and disinfect all hand bowls, foot baths, and nonelectrical equipment, to include basins, tubs, sinks, or bowls that hold water for a patron’s feet during a pedicure service, between each patron as specified in paragraph 2–10*b*. Additional foot bath requirements include—

(1) Cleaning and disinfecting the basins at the end of each day and after the last client.

(2) Applying an extended disinfection procedure for each basin at least once each week using the procedure specified in subparagraph *b*(3), below.

*b.* Cleaning procedures. Apply the cleaning and disinfecting procedure specified by the equipment manufacturer, or use the EPA-recommended procedures outlined in this section.

(1) Clean all sinks, bowls, and basins with detergent and then disinfect as specified in subparagraph (2)(*d*), below.

(2) Clean and disinfect pedicure spas (foot baths with circulating water) such as whirlpool foot spas and air-jet basins, and pipeless foot spas as follows:

(*a*) Drain all water from the basin; remove the footplate or other removable components from pipeless foot spas.

(*b*) Scrub and clean the inside walls of the basin, the footplate, and all components using a clean brush or wiping cloth and detergent to remove all visible residue.

(*c*) Rinse the basin and components, reassemble the foot spa, and then refill it with clean water.

(*d*) Using an EPA-registered disinfectant, a 500-ppm chlorine solution, or other approved disinfecting product that is formulated as a bactericide, fungicide, and virucide, add a sufficient amount to the basin and circulate for at least 10 minutes or as specified by the foot spa manufacturer.

(*e*) Drain and rinse the basin with clean water and wipe dry with a clean paper towel or cloth.

(*f*) Record all cleaning and disinfecting procedures in a pedicure cleaning log as specified in subparagraph *c*, below.

(3) Conduct an extended disinfecting application once each week for pedicure spas, pipeless foot spas, whirlpool spas, and air-jet basins at the end of a cleaning and disinfecting cycle.

(*a*) After completing the disinfection step specified in subparagraph (2)(*d*), above, do not drain the disinfecting solution. Leave the disinfectant in the basin for a period of 6 to 10 hours (for example, overnight) and then drain and rinse the basin with clean water.

(*b*) For whirlpool foot spas and air-jet basins: Following the 6-to-10-hour disinfection period, refill the basin with clean water and flush the system. Wipe dry with a clean cloth or paper towel.

(*c*) For pipeless foot spas (with footplates and impeller/propeller assemblies): Following the 6-to-10-hour disinfection period, drain and rinse the basin with clean water, then wipe dry with a clean cloth or paper towel.

*c.* Cleaning log. Maintain a pedicure-cleaning log for each foot spa and basin present in the facility.

(1) Record the following information in the log:

(*a*) A unique identification code or number for each pedicure spa and basin. The facility may maintain either a consolidated cleaning log or a separate cleaning log for each individual spa.

(b) The date and time each cleaning was conducted, and the type of cleaning performed: *after client, end of day, or weekly.*

(c) The initials of the person who completed the cleaning and disinfection procedure.

(2) Retain the log on file at the premises for a period of at least 1 year.

(3) Present the log to the Preventive Medicine inspector upon request.

## 2–11. Hair removal

Superfluous facial and body hair is removed through a variety of techniques (for example, tweezing, waxing, or threading) that result in complete extraction of the hair from the follicle. Minor bleeding and skin irritation may occur as a result of treatment. Hair removal by waxing and tweezing is permitted, provided customers are screened for and advised of potential health risks; adequate facilities and equipment are in place; employees are licensed and trained for the procedure; and employees comply with the requirements presented in this section.

*a. Susceptible persons and health effects.\** The cosmetologist informs each patron requesting waxing or tweezing of the potential health risk for individuals with the following medical conditions: diabetes, circulatory problems, high susceptibility to infections, or unusual sensitivity to waxing or tweezing.

(1) Advise patrons who use topical or oral retinoids such as tretinoin (Retin-A<sup>®</sup>, Renova<sup>®</sup>), adapalene (Differin<sup>®</sup>), tazarotene (Tazorac<sup>®</sup>), isotretinoin (for example, Accutane<sup>®</sup>), acitretin (Soriatane<sup>®</sup>), and other similar products, not to have hair waxing performed on the face, as these products tend to weaken the skin, and tearing of the skin may occur when the wax is removed.

(2) Inform patrons regarding their increased susceptibility to irritation or infection for up to 48 hours after a waxing procedure, and instruct them not to engage in the following practices or activities during this timeframe:

- (a) Swimming or using a water spa or whirlpool bath.
- (b) Wearing tight clothing that could cause excessive sweating.
- (c) Sunbathing, either naturally or artificially (to include spray tanning).
- (d) Applying a deodorant on the waxed areas.

(3) Do not apply waxes—

- (a) Over varicose veins, moles, or warts.
- (b) On eyelashes or inside the nose or ears.
- (c) On the nipples or genital areas.
- (d) On irritated, chapped, sunburned, cut, or abraded skin.

(4) Check for patron sensitivity to waxing prior to beginning a waxing procedure. Apply a small amount of wax to the patron's skin (cover ½ inch (in.) or less). If any excessive redness or irritation appears, discontinue the treatment.

(5) Inform patrons to seek medical attention if there is any excessive reddening of the skin or other signs of skin sensitivity or infection.

*b. Hygienic practices and sanitation controls during hair removal procedures.*

(1) *Hand hygiene.\** Wear disposable gloves to perform waxing or tweezing procedures. Employees must wash their hands, as specified in subparagraph 2–6b(4), both before and after conducting each threading, waxing, or tweezing treatment, regardless of whether or not disposable gloves are worn.

(a) Disposable gloves are recommended for performing a threading procedure. When gloves are not used, the employee uses a hand sanitizer (containing a minimum of 60% ethyl alcohol) and applies the hand sanitizer after washing and drying his or her hands properly, both before and after the patron treatment.

(b) Gloves are disposed as general solid waste after use with a single patron.

(2) *Headrests, armrests, and tables.* Cover the skin-contact surface of tables, as well as the headrest and armrests of chairs that are used for threading, waxing, or tweezing procedures.

(a) Disinfect surfaces after the patron procedure if there is inadvertent contact with the patron's skin and also at the end of each business day. Use an approved product and procedure as specified in paragraph 2–5b and table 2–3.\*

(b) Replace disposable paper and cloth covers between each patron service.

(3) *Hair removal tools.\** Clean and disinfect tweezers and multiuse threading tools (spring threader), as specified in paragraphs 2–5b, 2–8c, and table 2–3, between each patron service. Discard threading fibers immediately after use as these are intended for single use only.

(4) *Antiseptic treatment.\** Threading, waxing, and tweezing may leave the skin sore and open to infection. Both before and after the procedure, apply an FDA-approved broad-spectrum antibacterial agent, as specified in paragraph 2–5c, to all areas of the body being treated.

(a) Apply the antibacterial agent using a clean dry towel or disposable applicator (for example, cotton ball or gauze) to avoid getting the antibacterial agent into the patron’s eyes.

(b) Control bleeding as specified in paragraph 2–7c. Use a clean paper towel or gauze to blot any blood resulting from threading, waxing, or tweezing. Blotting materials are disposed as general solid waste. Refer the patron to an appropriate supporting medical facility if bleeding cannot be stopped by direct pressure.

c. *Wax selection and disinfection.\** Use of glucose (water-soluble) wax, including water-based strip wax, is prohibited, as specified in paragraph 2–3e. Apply the following sanitary controls when managing waxes used for hair removal. **CAUTION:** *The temperatures specified in this section are intended to destroy microbes or control microbial growth. Follow the manufacturer’s specification regarding safe temperatures when applying wax to the patron’s skin.*

(1) *Hot (hard) wax.* Heat hard wax to a minimum temperature of 257°F (125°C) to destroy harmful microorganisms. Maintaining this temperature also allows good pouring consistency and easier straining of visible debris from the wax. As an added measure to protect against microbial contamination, heated wax should remain at the prescribed temperature between uses.

(2) *Strip wax.* Oil-based strip (soft) wax is permitted for hair removal. Oil-based strip waxes may not be reused.

(3) *Roll-on wax.* Roll-on wax applicators may be used if the applicator can be dismantled and thoroughly cleaned and disinfected between patron services. Roll-on applicators may be disinfected with the wax cartridge intact between patrons if the applicator is placed in an enclosed heating unit that is capable of heating the wax cartridge and roller head to a temperature between 158 and 176°F (70–80°C) for a minimum of 15 minutes.

(4) *Wax pots.* Clean and disinfect wax pots using a hospital-grade, approved disinfecting solution.

(a) Empty, clean, and disinfect oil-based strip wax pots weekly or before refilling, whichever comes first.

(b) Clean and disinfect pots used for hard wax before refilling them and whenever they become visibly soiled or contaminated. Partially full hard wax pots may not be “topped off” with fresh wax.

d. *Sanitary practices for waxing.\**

(1) Extract hot wax from the pot using a new (clean) applicator for each patron.

(a) Do not leave applicators in the wax pot at any time.

(b) Do not return a used applicator to the wax pot during a patron procedure. A new, disposable, single-use applicator should be used each time wax is extracted from the wax pot.

(2) Remove a portion of the wax from the wax pot and place it in a separate container for use with the patron to ensure the bulk wax pot is not contaminated by repeated extractions using the same applicator.

(3) Use a clean applicator to apply wax to the patron’s skin. Single-use (disposable) applicators are preferred. Multiple-use applicators are authorized and must be designed to facilitate complete removal of the wax from the applicator, as well as durable, to allow proper cleaning and disinfection between patrons.

(4) Clean and disinfect multiuse applicators, as specified in paragraphs 2–5b and 2–8c, and table 2–3, between each patron.

(5) Do not reuse hot waxes applied to the skin or any unused wax that was removed from the pot. When hot wax is removed from the pot, it is considered to have been used; it may not be returned to the pot under any circumstances.

## 2–12. Hand and foot wax treatments\*

Paraffin wax treatments are conducted during manicures and pedicures and involve the immersion of the patron’s hands or feet directly into the heated wax, which can serve as a vehicle for transmitting harmful microorganisms

from one patron to another. Adherence to the following criteria significantly reduces the risk for illness or injury as a result of the treatment.

- a. Conduct the paraffin wax treatment before—not after—a manicure or pedicure.
- b. Ensure the client is free of broken skin, burns, or any skin disorder on the area to be treated.
- c. Wash and sanitize the client's hands and feet before dipping them into the paraffin wax.
  - (1) Ensure all jewelry is removed from hands and feet before the wax treatment begins.
  - (2) Wash the client's hands/feet with warm soapy water to remove surface debris and residues.
  - (3) Rinse and dry the client's hands/feet. Use a clean towel or disposable paper towel with each patron.
  - (4) Apply an antiseptic product to the client's hands/feet, and allow the product to air dry before dipping the hands/feet into the paraffin wax.
- d. Use separate wax basins for hand and foot treatments. Do not interchange in-use wax basins or use hand/foot wax for other applications.
- e. Maintain sanitary controls for paraffin wax. **CAUTION:** *The temperatures specified in this section are intended to destroy microbes or control microbial growth. Follow the manufacturer's specification regarding safe temperatures when applying wax to the patron's skin.*
  - (1) Heat the paraffin wax to a temperature between 158 and 176°F (70–80°C) for a minimum of 15 minutes before use between patrons. Viruses such as HIV are expected to be inactivated at this temperature.
    - (a) Only use a paraffin wax heater to heat the wax. A microwave oven and other types of heating devices that were not specifically designed for the purpose of heating paraffin wax may not be used.
    - (b) Maintain a temperature monitoring log. Document the date, time, and temperature at the beginning of the day, and document at least two additional temperature measurements during the course of an 8- or 10-hour work day. Include the initials of the person who recorded the temperature.
  - (2) Protect the paraffin wax basin and bulk products from contamination. Keep the heated wax free from debris, and store the products as specified in paragraph 2–9a.
  - (3) Empty, clean, and disinfect paraffin wax pots at least weekly, or when they become visibly contaminated with dust or other debris.
  - (4) Do not return paraffin wax that was removed from a client's hands or feet to the wax pot for reuse; immediately discard used wax.

## 2–13. Hair weaving

- a. Apply the controls and sanitary requirements specified in paragraphs 2–1 through 2–9, as applicable, to hair weaving and hair extension services and salons that exclusively perform these functions.
- b. Store hair extensions, extension tracks, hair weaving needles, and threads in a bag or covered container until ready for use. Do not store unrelated items in the same bag or container.

## 2–14. Nail treatments

- a. Controls and sanitation practices. Apply the controls and sanitary requirements specified in paragraphs 2–1 through 2–9, as applicable, to nail treatment services and nail salons that perform these functions exclusively.
- b. Disease agents.
  - (1) Cutting cuticles and cutting into the nail bed to mount nail adornments are prohibited invasive practices as specified in paragraph 2–3b.\*
  - (2) Nail technicians may not work on nails that are abnormal in appearance or have any evidence of infection (redness, pus, tenderness, or swelling).
- c. Harmful vapors. Ensure premises are well ventilated, as specified in paragraph 2–4b, to reduce employee and patron exposure to harmful vapors from glues, alcohol-based products, and other nail care products. Vapor exposure can be minimized by—
  - (1) Using drop-on or brush-on products rather than aerosol products.
  - (2) Securing lids on containers between patron services when the container holds volatilizing compounds such as alcohol, acetone, alcohol-soaked pads, or other similar products.
- c. Nail treatment tools and supplies.\*

(1) Items intended for single use, such as chamois buffers, emery boards, pumice stones, sanding blocks, cuticle sticks (wooden), and toe separators, are used with a single patron then disposed as specified in paragraph 2–8e.

(2) Reusable items, to include buffing burrs and nail brushes, are cleaned and disinfected after each patron as specified in paragraph 2–8c.

### **2–15. Mud treatments and baths\***

Hazards generally associated with mud treatments include exposure to toxic substances from the use of inappropriate products, and skin disease (folliculitis) caused by staphylococcus or pseudomonas bacteria. Pseudomonas is of primary concern in heated mud baths as these bacteria survive in high-temperature environments.

a. Approved products. Use mud treatment products that are approved as specified in paragraph 2–5. The term “mud” refers to a wide variety of products that are coated onto the skin. Therapeutic mud is typically soil composed of seaweed/algae, volcanic ash, clay, and other rich minerals which are mixed with drinking water or natural spring water. For example, Dead Sea mud has a high concentration of salt and minerals. The application of ordinary garden soil is prohibited as it may contain high levels of toxins such as lead and bacteria.

b. Treatment restrictions. Mud treatments are either applied manually to the patron’s face or body as wraps, or by immersion of the patron in a mud bath.

(1) Use immersion tubs that accommodate a single patron at one time. Use of group-shared thermal mud spas, other than a naturally-occurring mud bath associated with a hot spring, is prohibited.

(2) Mud wraps used on a patron are discarded immediately after the treatment and may not be reconditioned for use with another patron.

(3) Do not perform mud treatments on areas of the body that have unhealed cuts, abrasions, or burns.

(4) Restrict individuals from using a mud bath if they have unhealed skin injuries as specified in subparagraph b(3), above, regardless of whether or not the injury is covered with an impermeable bandage.

c. Mud bath requirements.

(1) Connect immersion tubs to a potable water system supplied with hot water and connected to the sanitary sewer IAW plumbing code requirements to prevent a cross-connection as specified in subparagraph 2–4c(1).

(2) Equip each immersion bath with a temperature monitoring device. Do not allow the mud temperature to exceed 120°F (49°C) during client use.

d. Mud bath sanitation.

(1) Apply the sanitary controls specified in paragraphs 2–8 and 2–9 for treatment tables, linens, mud applicators, and the use of products from bulk stocks.

(2) After each patron service, sanitize the immersion bath mud with hot water that has a minimum temperature of 212°F (100°C). Pump the water into the mud for a period of at least 15 minutes.

(3) Rake/sift the mud during the sanitizing treatment to remove hair and other physical debris.

(4) Following a mud-sanitizing process, verify the temperature of the mud before the bath is used by a patron. Do not allow patrons to enter the mud bath until the temperature is below 120°F (49°C).

### **2–16. Spray tanning\***

a. Employee certification. Ensure technicians who administer spray tanning possess a valid license or proof of training certification to conduct spray tanning.

b. Sunless tanning products. Many sunless tanning products that contain *dihydroxyacetone* (DHA) as the active ingredient are FDA-approved for cosmetic use. These products are considered nontoxic and noncarcinogenic when applied to the skin. Products containing DHA, however, are not approved for inhalation and should not be ingested or in contact with mucous membranes.

c. Application precautions. Apply the following precautions to minimize hazardous patron exposures during product application:

(1) Ensure adequate ventilation is provided in the designated treatment area at the facility, as specified in paragraph 2–4b, to remove excessive vapors from the room. Ventilation may include a combination of local exhaust and fans.

- (2) Provide patrons with protective eyewear. Use of nose plugs is also recommended.
  - (a) Single-use protective equipment is recommended.
  - (b) Clean and disinfect reusable items between each patron service, as specified in paragraph 2–8c.
- (3) Apply sunless tanning products externally to the body, avoiding areas around the eyes, lips, and any other mucous membrane area. The application of barrier cream or petroleum jelly is recommended for areas that should not be in contact with the DHA chemical.
- (4) Apply the chemical tanning product manually using an air gun. Use of automated spray tanner booths is prohibited because they are enclosed, provide poor ventilation, and do not control the chemical streams during the application. Manual application of the spray tanner product in an enclosed booth is also not authorized.

## **2–17. Laundry**

- a. Supply on-premises laundry facilities with hot water and a mechanical dryer.
  - (1) Provide a minimum hot water temperature of 140°F (60°C) at point of use, and use a hot water cycle to launder all items.
  - (2) Ensure laundered articles are thoroughly dried prior to storage or reissue.
- b. Use a commercial laundry service or military field laundry, as appropriate, when the facility is not equipped with a laundry room.

## **2–18. Other services and facilities**

Refer to—

- a. Chapter 3 for sanitary control of shower facilities and saunas/steam rooms.
- b. Chapter 4 for sanitary controls associated with whole-body massage services.
- c. TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP for food concessions.
- d. TB MED 575 for spas/hot tubs.

# **Section IV – FIELD AND CONTINGENCY OPERATION ENVIRONMENTS**

The information presented in section IV applies only to field environments and deployment settings for combat, contingency, or humanitarian support operations; these are hereafter referred to as “field settings.”

## **2–19. Authorized operations**

- a. Approval to operate. The Command Surgeon or designated representative determines the appropriate controls and restrictions that must be applied to the field setting.
  - (1) The criteria specified in sections II and III of this chapter are applied when independent guidance or policies are not established. The Command Surgeon or designated Preventive Medicine representative should evaluate the local field or deployment situation and adjust this guidance when appropriate.
  - (2) Limit services to shampooing, hair cutting, and basic fingernail and cuticle care when barber/beauty shops are incapable of meeting the sanitation controls presented in section III of this chapter.
    - (a) Restricted activities include chemical hair treatments; hair removal by waxing, tweezing or threading; specialty skin treatments; and specialty nail treatments, such as pedicures and gluing on artificial nails or jewelry.
    - (b) Restricted services apply to military-operated and U.S.-contracted barber and beauty operations.
- b. Licensure and apprenticeship.\* Persons hired to provide barber or beauty services must possess a valid license for the rendered services. Apprenticeship is authorized and requires direct supervision by a licensed individual. The licensed person must be present at all times when the apprentice is providing a patron service. Apprentices are not considered licensed until they meet appropriate State or national licensing criteria and produce proof of licensure.

## **2-20. Employee health and hygiene\***

*a.* Apply employee health and hygiene criteria as specified in paragraph 2-6*b*.

(1) The Command Surgeon determines if barbers, beauticians, and other personnel providing barbering or cosmetology-related services require a pre-employment health screening. This is particularly important when local-national and third-country-national barbers and beauticians are employed. Minimum health screenings should include tuberculosis, HIV, and Hepatitis B and C.

(2) Utilize a contracted (commercial) laundry facility or military field laundry to clean employee uniforms, smocks, and linens.

(3) Ensure employees' hands, cuticles, and fingernails are clean before starting work each day.

*b.* Ensure handwashing facilities are located within the barber or beauty shop for easy access. Reliance on hand wash fixtures located outside of the barber/beauty shop is not appropriate; examples include such fixtures positioned near portable toilets, sinks located inside a field toilet facility, or sinks located in other adjacent buildings.

(1) Ensure sinks are supplied with water, soap, and paper towels at all times.

(2) Use of a field-expedient hand wash device is acceptable when it is constructed to allow clean water to flow during handwashing. Soiled water from previous hand washes (for example, water retained in a basin) may not be reused for subsequent handwashing.

*c.* In situations where neither fixed nor field-expedient hand wash fixtures can be provided, the Command Surgeon may, but is not required to, authorize the use of alternative hand cleaning procedures.

(1) Authorization to use a modified handwashing procedure should be considered only when beauty services are limited to barbering and basic hair care (cutting and shampooing).

(2) The alternative method includes using a hand cleaning wet disposable towel, followed by proper application of a waterless hand sanitizer (containing a minimum 60% ethanol).

(3) Sanitized hands are thoroughly air dried before a new patron service is begun.

## **2-21. Facility controls**

*a.* Location. Barber and beauty services may not be performed in any area used for sleeping or food service. This does not prohibit conducting temporary (less than 1 day) barber and beauty services in dayrooms or recreational areas, provided the requirements for facility cleanliness, equipment sanitation, and personal hygiene specified in this chapter are met, and the barber and beauty operation does not present a health hazard to other users of the facility.

*b.* Customer complaints. In a conspicuous location near the entrance or cash register at each barber and beauty shop, post the contact information of the immediate U.S. Government supervisor or COR, and the Preventive Medicine unit or representative responsible for conducting inspections. The purpose of this requirement is to ensure customer complaints regarding unsafe or unsanitary practices/conditions are reported to the appropriate agents.

*c.* Patron health.\* Prior to providing services, barbers and beauticians examine each patron for signs of skin disease or head lice, as specified in paragraph 2-6*c*, and restrict services, as appropriate. The Command Surgeon or Preventive Medicine may require barber and beauty shop employees to report the names and contact information of patrons who are refused service due to skin disease or insect infestation.

## **2-22. Sanitary practices**

*a.* Implements.

(1) Provide at least two sets of each instrument used (combs, brushes, scissors, and manicure equipment) for each employee. This will allow time to conduct proper cleaning and disinfection between patron services without delaying service.

(2) Clean and disinfect all implements, to include contents from the military field barber kit (NSN 3590-00-058-1837), as specified in paragraph 2-8*c*, after use on a single patron.\*

*b.* Instrument disinfection using chlorine.\* Apply a chlorine solution when an EPA-registered Barbicide or similar approved commercial disinfecting compound for barbering implements is not available.

(1) Prepare chlorine solutions fresh each day or more frequently, as needed, if the solution becomes soiled/cloudy with debris or the concentration falls below the minimum standard.

(2) Maintain a minimum chlorine concentration of 200-ppm free available chlorine (FAC). Refer to appendix B for the mixing guidance applicable to preparing chlorine bleach solutions. **Note:** *Chlorine bleach is a corrosive chemical and will damage metal implements if the concentration of the prepared solution is too high.*

(3) Each time a solution is prepared, test the chlorine FAC concentration using a chlorine test kit or test strips that are appropriately scaled to detect within and above the desired concentration. Refer to table B-2 for a list of chlorine test strip products with appropriate detection ranges.

(4) Wash, rinse, and dry all nonelectrical implements, as specified in subparagraph 2-8c(3), before placing them in a disinfecting solution.

(5) Completely immerse the implements in the disinfecting solution (with scissors opened) for a minimum of 10 minutes.

(6) Rinse the disinfected implements with potable water, and then dry them with a clean paper towel or cloth before either storing them or using them for a patron service.

(7) Store clean implements in a clean drawer or covered container to protect them from contamination.

c. Hair cloths. Manage hair cloths (capes) and towels as specified in paragraphs 2-7b and 2-8f.

d. Shaving. Use only single-use, disposable razors, and manage them as specified in paragraph 2-8d.\*

e. Bleeding. Apply the approved controls specified in paragraph 2-7c if bleeding occurs as the result of a barbering or beauty procedure.\*

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## CHAPTER 3

### GYM AND FITNESS CENTER OPERATIONS

#### 3–1. Fitness operation characteristics

*a.* Fitness operations are located inside facilities that promote physical wellness through aerobic and anaerobic activities, such as strength and cardiovascular training, and may include muscle manipulation and relaxation services. The types of facilities and services categorized as fitness operations include gymnasiums, sports and fitness centers, weight rooms, cardio rooms, aerobics studios, indoor athletic courts (for example, racquetball and basketball), and massage concessions.

*b.* Outdoor facilities such as athletic fields, basketball courts, and tennis courts are assessed with recreational areas (refer to chapter 7).

*c.* Environmental health considerations for Army sports facilities and fitness operations include prevention of disease transmission from contaminated equipment, towels, clothing, and other common use items; and provisions for adequate facilities and housekeeping practices. Refer to table 3–1 for fitness facility hazards.

*d.* Routine inspections are not conducted at physical therapy facilities operated or contracted by the medical treatment facility. However, sanitation criteria presented in this chapter and in chapter 4, Massage Services, may be used when evaluation of physical therapy operations is required.

**Table 3–1. Fitness facility hazards**

Description	Hazards <sup>1</sup> ( <i>to patrons and/or employees</i> )	Risk Level <sup>2</sup>	Residual Risk <i>Controls Applied</i>
GYM: Fitness room; athletic court; weight room; cardio room	<p><b>FH1.</b> Respiratory infections: small or enclosed spaces; overcrowded rooms; poor ventilation.</p> <p><b>FH2.</b> Biological (bacteria, fungus, virus) from contact with contaminated surfaces: Hepatitis B; <i>Klebsiella</i> bacteria may cause urinary tract infection, pneumonia, blood infections, or meningitis; MRSA bacteria are commonly associated with sports/wrestling mats; <i>Streptococcal</i> bacteria; Norovirus.</p> <p><b>FH3.</b> Allergic reactions to latex material sometimes used in fitness mats.</p> <p><b>FH4.</b> Skin irritation and inhalation of harmful vapors from improper use of unapproved cleaners and disinfectants.</p> <p><b>FH5.</b> Physical injuries: Muscle strains/sprains; Pinching or crushing of fingers/hands/feet from improper use of mechanical equipment; Tripping from improperly stored weights; Falling from electronically-operated cardio machines; Electric shock (frayed equipment cords); Eye injury from flying projectiles (racquetball); Noise (high impact from falling weights or cardio equipment).</p>	High (B-II)	Low

Description	Hazards <sup>1</sup> (to patrons and/or employees)	Risk Level <sup>2</sup>	Residual Risk Controls Applied
PERSONAL ITEM ISSUE: Protective eyewear; athletic clothing; towels	<b>FH6.</b> Biological (see <b>FH2</b> ). <b>FH7.</b> Parasite infestation (lice) of clothing/towels. <b>FH8.</b> Skin irritation from detergent residues in laundered clothing.	Moderate (D-II)	Low
BULK EQUIPMENT MANAGEMENT: Storage & issue of fitness tools or sports equipment	<b>FH9.</b> Reaching or falling from equipment stored too high or improperly stored on shelves. <b>FH10.</b> Biological (see <b>FH2</b> ).	Low (E-III)	Low
HYGIENE FACILITIES: Shower room	Refer to table 2–2, <b>BH77–BH83</b> .	Extremely High (A-II)	Moderate
MASSAGE: whole body, relaxing, therapeutic/sports	Refer to table 2–2, <b>BH50–BH56</b> .	Extremely High (B-I)	Low
WATER SPA (hot tub/spa)	Refer to table 2–2, <b>BH57–BH63</b> .	Extremely High (B-I)	High
POOLS: Swimming pool; whirlpool	In addition to <b>BH57, BH58, BH60, BH61, &amp; BH63</b> for Water Spas— <b>FH11.</b> Exposure to low temperature pools may cause low blood pressure, hypothermia, and muscle cramps.	Extremely High (B-I)	Moderate
HEAT SPA (sauna or steam room)	Refer to table 2–2, <b>BH64–BH74</b>	Extremely High (A-I)	High
ON-SITE LAUNDRY	Refer to table 2–2, <b>BH84–BH91</b>	Moderate (C-III)	Low
FOOD CONCESSION: juice bar, nutrition bar	Refer to table 2–2, <b>BH92–BH94</b>	Moderate (C-II)	Low
<sup>1</sup> Hazard abbreviations: <b>FH</b> = fitness facility hazard; <b>BH</b> = beauty operation hazard (identified in chapter 2, table 2–2). <sup>2</sup> Estimated risk levels were derived using Step 2 of the hazard assessment process presented in ATP 5–19. See appendix C.			

**3–2. Prohibited services\***

*a.* UV tanning. UV radiation systems (booths, tables, and sunlamps) used for the purpose of tanning are prohibited outside of a medical facility. Application of UV therapy is authorized in a medical setting if prescribed and under the supervision of a medical practitioner.

(1) UV systems with wavelengths ranging from 200 to 400 nanometers cause both immediate and delayed cumulative effects at the molecular and cellular level.

(2) Associated hazards include skin irritation, skin burns, skin cancer, premature skin aging, and eye damage (both short- and long-term).

*b.* Cryotherapy. Whole-body cryotherapy is a therapeutic practice in which the user's entire body (excluding the head) is enclosed in a chamber and exposed to air at –200°F to –250°F for 2 to 4 minutes. Although this practice is touted by professional athletes as an effective treatment for pain relief, there is little scientific evidence supporting its long-term benefits. Cryotherapy is authorized in a medical setting if prescribed and under the supervision of a medical professional. Based on the following information, nonmedical cryotherapy services are not authorized:

(1) The FDA disavows any truth to the medical claims that whole-body cryotherapy treats diseases or conditions such as chronic pain, osteoarthritis, depression, and Alzheimer's. The FDA has not approved any whole-body cryotherapy device in support of these and other claims.

(2) There are no regulatory requirements regarding operator credentials to perform cryotherapy treatments or to operate cryotherapy booths/systems.

(3) Potential hazards associated with an improperly managed cryotherapy operation include asphyxiation (from nitrogen vapors used for cooling), frostbite, burns, eye injury, and hypothermia (from extreme temperatures), and death.

**3–3. Physical facilities**

*a.* Maintain physical facilities free of structural defects that may present a safety risk or promote unsanitary conditions.

*b.* Provide basic safety features such as adequate illumination, fire/smoke detection and alarm, fire extinguisher, and first aid kit as specified in Army regulations.

(1) Maintain a light intensity of at least 20 foot-candles (215 lux) during hours of operation in each locker room and fitness room, and in other areas when fully illuminated for cleaning.

(2) Maintain a light intensity of at least 50 foot-candles (540 lux) during hours of operation in shower rooms, toilet rooms, and laundry rooms.

(3) Safety violations found during a Preventive Medicine inspection are reported to the installation Safety office.

*c.* Provide sufficient ventilation in areas where high moisture conditions persist, such as laundry rooms and shower facilities, to control indoor mold growth; and throughout the facility to prevent the occurrence of objectionable odors.

*d.* Ensure lockers, when provided, are vented.

*e.* Maintain athletic equipment and fitness machines in good repair.

*f.* Provide sufficient areas and racks for storing loose weights and equipment.

*g.* Athletic fields adjacent to and maintained by the fitness center should be provided with convenient access to drinking water and toilet facilities. Inspections of athletic fields that are not collocated with the fitness center are evaluated as Recreational Areas (see chapter 7).

**3–4. Disinfectants\***

*a.* Provide appropriate antimicrobial products for use on equipment, physical facilities, footwear, and linens/clothing, as applicable. Refer to appendix B for additional information regarding antimicrobial products.

(1) Use EPA-registered disinfection products that are effective against the greatest spectrum of fungi, viruses, and bacteria, including MRSA. Refer to the EPA's List H for products registered as effective against MRSA, available at <https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants>.

(2) Foreign brands that meet EU or other nationally-recognized standards for disinfection and contain bactericidal, fungicidal, and virucidal properties may be used overseas when approved by the medical authority, Preventive Medicine, or Command Surgeon.

*b.* Use disinfection products according to the manufacturers' instructions regarding dilution, application on appropriate surfaces, contact time for disinfection, and clear water rinse to remove residual.

(1) Provide a test kit to verify the final concentration of a prepared solution if the original product required dilution prior to application.

(2) Allow the disinfectant to remain wet on the treated surface for the longest duration specified on the label to kill the full spectrum of listed bacteria, virus, or fungus.

(3) When required according to the product label, apply a clear water rinse or wipe the surface using a clean wet cloth after the disinfection contact time has been met.

*c.* Requirements for chlorine bleach solutions prepared on premises from a concentrated product include—

(1) Preparing the bleach solution fresh each day, or more frequently, to ensure the disinfecting concentration specified in subparagraph *c*(2), below, is maintained.

(2) Maintaining a 500-ppm FAC solution for disinfection. This concentration is effective against MRSA when properly applied.

(3) Verifying the concentration of the solution when it is prepared and periodically throughout the day to ensure the appropriate concentration is maintained.

(4) Applying a 1-minute minimum wet contact time to achieve disinfection.

(5) Rinsing the disinfected surface as specified in subparagraph *b*(3), above.

### **3–5. General facility sanitation**

*a.* Maintain premises free from litter.

*b.* Empty waste receptacles at a frequency that prevents overflow of refuse. Cover outdoor waste receptacles to prevent attracting pests.

*c.* Clean and disinfect drinking fountains daily. Prevent mold/mildew and mineral scale buildup on the dispensing nozzle.

*d.* Empty and clean mop buckets and mops after use each day and before storing them.

(1) Disinfect mop heads at least once each week by laundering with detergent and hot water in a washing machine, or, after rinsing the mop clean, soaking it in a 500-ppm chlorine bleach or other disinfecting solution for 10 minutes.

(2) Replace mop heads when heavily soiled or frayed (for example, deteriorating mop strings).

*e.* Provide hand sanitizers containing a minimum of 60-percent alcohol for customer and employee use.

### **3–6. Equipment sanitation**

*a.* Surfaces that come into contact with patrons' skin are cleaned and disinfected daily by a facility employee at the close of each business day, or once every 12 hours for facilities that remain open for 24 hours.\*

(1) Surfaces include grip areas on weights bars, dumbbells and machines; wall padding and fitness mats; lifting benches; stationary bike seats; and weight machine seats and padding.

(2) Replace torn or cracked grips and pads when tears or cracks occur.

(a) This applies to grip areas on weights bars, dumbbells, and machines, and other padded areas, such as seats, weight benches, and floor mats.

(b) Inspect equipment regularly to identify heavily worn surfaces before they become torn, and initiate a repair/replacement action. Applying tape to "repair" torn or cracked surfaces is not acceptable because it inhibits proper cleaning and disinfection of the surface.

*b.* Throughout the facility, provide access to cleaning agents (for example, spray bottles or wipes) and disposable or reusable towels, as appropriate, for customer use. Patrons should be encouraged to wipe down the equipment after they use it. Specific areas to be cleaned include weight benches, seats, hand grips, bars, handles, and fitness mats.

*c.* Clean and disinfect whirlpool baths, steam cabinets (not saunas or rooms), and other therapy-type equipment between users.\*

*d.* Clean and disinfect the skin-contact surface of issued sports equipment and personal protective equipment (PPE) after each use. These actions include, but are not limited to, eyewear, face shields, batting helmets, and racquet hand grips.\*

*e.* Launder previously issued athletic clothing and towels before they are reissued to another patron.\*

*f.* Provide labeled containers for soiled equipment, towels, and athletic clothing, when applicable. Protect clean items from becoming soiled during storage.

*g.* Disinfect athletic shoes with an approved fungicide spray, and allow the shoes to dry thoroughly before being reissued.\*

*h.* Clean and disinfect multiple-use shower shoes (when issued) after each use.\*

(1) Completely immerse nonfabric footwear in the disinfecting solution, rinse, and then air dry.

(2) Discard single-use/disposable shower shoes or footwear after use by a single patron.

### **3–7. Sauna and steam rooms**

#### *a.* Structure.

(1) Construct and install wet, dry, and infrared (IR) saunas according to industry standards and as specified in this section. To ensure compliance, consult with Preventive Medicine prior to the purchase or construction of saunas. Approved IR saunas bear a manufacturer’s mark which indicates conformance with appropriate safety and performance standards. These marks include Underwriters Laboratories Incorporated (UL); Canadian Standards Association (CSA); Intertek Testing Services (ETL) [formerly ETL Testing Laboratories]; and Conformance European (CE).

(a) The ETL mark is used in North America and indicates conformance with all U.S. and Canadian safety standards. Saunas bearing the ETL mark meet national standards such as those of the American National Standards Institute (ANSI), CSA, National Sanitation Foundation International (NSF), and UL for electrical, medical devices, and other products.

(b) The CSA mark is a Nationally Recognized Testing Laboratory certification issued in North America.

(c) The CE mark represents European and Australia Safety Standards.

(d) The UL mark on IR saunas indicates the sauna heater has been certified for electrical safety.

Equipment bearing the mark “UL Listed EPH” is certified for electrical safety and sanitation. “EPH” is the abbreviation for environmental public health. Equipment bearing the mark “UL Sanitation” is certified against NSF standards.

(2) Shield steam outlets, piping, and heaters to prevent burns.

(3) Design sauna and steam room doors with a window that allows observation of the entire room. Ensure doors are—

(a) Unobstructed.

(b) Easily opened from inside the room (if equipped with a lock or latch mechanism).

(4) Do not install carpeting or other absorbent floor coverings.

(5) Construct dry saunas with—

(a) Rot-resistant wood.

(b) Duckboards that are easily removed from floors for cleaning.

(c) Smooth-surface benches that are free from splintering, protruding nails, or other fasteners that may cause injury.

(6) Completely line the interior of steam rooms/wet saunas with impervious material such as ceramic tile. Maintain walls, floors, and ceilings in good repair, free of cracked, broken, or missing tiles.

(7) Provide adequate lighting inside each sauna. Ensure lighting fixtures in wet saunas are suitable for damp locations.

(8) Equip saunas and steam rooms with a thermostatic control device, and apply the following temperature parameters as recommended by the American College of Sports Medicine (see appendix A).\*

(a) Ensure control switches and valves are secured and are accessible to facility employees only.

(b) Do not exceed a temperature of 170°F (76.7°C) at any time in dry saunas.

(c) Do not exceed a temperature of 110°F (43.3°C) at any time in wet saunas (steam rooms).

- (9) Provide a mechanism to monitor sauna use and control the amount of time spent in the sauna.
  - (a) Install an automatic timing system for each sauna, or place a clock inside the sauna for patrons to monitor, to comply with posted time-occupancy requirements.\*
  - (b) Routinely monitor patron activity in saunas (for example, hourly) to verify temperature settings and to watch for occupants experiencing adverse health effects.
  - (c) Equip saunas that are not under constant control of a facility employee, such as those in remote locations away from pedestrian traffic, with an emergency audible alarm for patrons to signal if help is needed.
- (10) Post a sign outside each sauna and steam room to inform patrons of hazards and health restrictions, proper procedures for use, and time limitations.
  - b. Sanitation.*
    - (1) Clean and disinfect duckboards, floor, and benches each day.\*
    - (2) Maintain the sauna interior in a clean condition, free of debris, mold or mildew, foul odors, or other unsanitary conditions.
    - (3) Do not allow consumption of food and beverages (other than water) inside saunas.
  - c. Operation and use.*
    - (1) Incorporate the manufacturer's recommended procedures for safe sauna use and operation into a local SOP.
    - (2) Do not allow children under the age of 16 to use saunas unless accompanied at all times by a parent or guardian.

### **3–8. Showers, locker rooms, and toilet facilities**

- a.* Clean and disinfect floors, fixtures, and benches in shower rooms, locker rooms, and toilet facilities at least once each day.\*
- b.* Maintain shower stalls and plumbing fixtures free from soap scum, mineral buildup, and mildew/mold.
- c.* Clean and maintain floor and shower drains to prevent accumulation of debris, standing water, or sewage backup.
- d.* Maintain supplies of hand soap, paper towels or a forced-air hand-drying device, and toilet paper at all times in toilet rooms and at hand wash sinks.
- e.* Provide only single-use bar soap, or a bulk liquid or powdered soap supplied from a mounted dispenser.
- f.* Maintain mop heads and buckets for cleaning toilet rooms, locker rooms, and showers separately from those used to clean administrative areas and other program areas within the facility.

### **3–9. Laundry**

- a.* Supply on-premises laundry facilities with hot water and a mechanical dryer.
  - (1) Provide a minimum hot water temperature of 140°F (60°C) at point of use, and launder all items using a hot water cycle.
  - (2) Ensure laundered articles are thoroughly dried prior to storage or reissue.
- b.* Use a commercial laundry service or military field laundry, as appropriate, when the facility is not equipped with a laundry room.

### **3–10. Massage services**

Refer to chapter 4 for sanitary controls associated with massage services.

## CHAPTER 4

### MASSAGE OPERATIONS

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#### Section I – GENERAL

##### 4–1. Massage operation characteristics

Nonmedical therapeutic massage services are offered in a wide range of styles, each with its own defining characteristics. Although this chapter does not outline the characteristics of all massage styles, it does identify common practices, which warrant regulatory oversight. General characteristics include—

- a.* Thai massage. No oils are used; customer is fully clothed; massage is often performed using a mat on the floor. Thai massage may involve walking on the patron's back.
- b.* Swedish massage. Oils are used; customer is unclothed and covered by a sheet; massage is performed on customer who is lying down on a table.
- c.* Shiatsu, Amma, or sports massage. Oils are generally not used; customer is fully clothed; massage is performed on customer who is sitting up in a chair or lying down on a table.

##### 4–2. Physical facilities

- a.* Location.
  - (1) Do not locate massage operations in food service or sleeping areas.
  - (2) Provide separate entrances and ventilation systems when the massage operation is located in the same building where food service or sleeping areas are located.
- b.* Plumbing system. Provide facilities with the following accommodations when massage services require direct contact with the patron's skin or the application of oils or other products to the skin:
  - (1) An adequate supply of hot and cold running water.
  - (2) Proper plumbing fixtures and adequate sewage disposal.
  - (3) A minimum of one hand wash sink that is conveniently located and readily accessible.\*
  - (4) A minimum hot water temperature of 120°F (49°C) at plumbed hand wash sinks.
- c.* Toilet rooms.
  - (1) Equip toilet rooms located inside the massage facility with a hand wash sink.
  - (2) Maintain a supply of hand soap, disposable paper towels, and toilet paper.
  - (3) Provide a waste receptacle with plastic liner.
- d.* Portable hand wash stations.
  - (1) Obtain approval from Preventive Medicine to use a portable hand wash device in lieu of a plumbed hand wash system.
  - (2) A portable hand wash device may not be used in massage facilities when the service requires— \*
    - (a) Patrons to shower before or after receiving a massage treatment.
    - (b) The application of oils or lotions to the patron's skin.
    - (c) The use of therapy stones or other instruments or devices that require cleaning and disinfection between patrons.
  - (d) On-premise laundering of linens.
  - (3) Maintain an adequate supply of water, hand soap, and disposable paper towels at all times.
  - (4) Develop a written SOP that specifies how and when the hand wash device will be filled and emptied, the location and mechanism for retrieving potable water, the person who is responsible for managing the hand wash station, and actions that will be taken to limit or halt massage services when there is no available supply of potable water in the hand wash device.

*e. Facility condition.* Maintain physical facilities free of structural defects that may present a safety risk or promote unsanitary conditions.

*f. Ventilation.* Provide sufficient ventilation in areas where high moisture conditions persist, such as laundry rooms and shower facilities, to control indoor mold growth; and throughout the facility to prevent the occurrence of objectionable odors.

*g. Laundry room.* When located on premises, equip and supply the laundry room with—

- (1) A mechanical washer and dryer.
- (2) A minimum hot water temperature of 140°F (60°C) at point of use.

*h. Safety.* Provide basic safety features such as adequate illumination, fire/smoke detection and alarm, fire extinguishers, and first aid kit as specified in Army regulations.

(1) Maintain a light intensity of at least 20 foot-candles (215 lux) during hours of operation in each changing room and treatment room; and in other areas when fully illuminated for cleaning.

(2) Maintain a light intensity of at least 50 foot-candles (540 lux) during hours of operation in shower rooms, toilet rooms, and laundry rooms.

(3) Safety violations found during Preventive Medicine inspections are reported to the installation safety office.

## **Section II –SANITATION REQUIREMENTS**

### **4–3. Management controls**

*a. Ensure employees administering therapeutic or whole-body massages possess a valid and unexpired state or national license to operate as a massage therapist. An exception is provided, as stated in chapter 2, for licensed estheticians, cosmetologists, and skin care specialists when massage is limited to the scalp, face, neck, shoulder area, hands, and feet.\**

*b. Employee health and hygiene.*

(1) *Health assessment.* The medical authority or Command Surgeon determines the need for establishing formal requirements and confirms these in a written policy regarding—

- (a) Employee pre-employment medical evaluations to ensure freedom from communicable disease.
- (b) Employee examinations before returning to work after illness.
- (c) Special examinations, such as Tuberculosis testing.

(2) *Illness.\** Employees may not work when ill with communicable disease, diarrhea, vomiting, sore throat with fever, exposed skin sores, burns, or infections, or other health condition that might be transferred to a patron.

(3) *Clothing.* Employees wear a clean smock or uniform when attending patrons. Smocks and uniforms are changed daily and when they become heavily soiled (for example, due to spilled products) during the course of the business day.

(4) *Handwashing.\** Employees wash their hands after each patron service and after performing custodial duties such as handling trash, handling soiled linens, sweeping floors, and cleaning equipment; eating; using the restroom; smoking or tobacco use; and other personal breaks.

(a) The therapist's feet are washed and sanitized immediately prior to performing a treatment involving walking on the patron's back.

(b) Except when a temporary authorization is provided by Preventive Medicine, use of hand sanitizers may not be substituted for proper hand washing.

(c) When waterless hand cleaning is authorized by the public health authority, a wet disposable towel is used to remove residues from hands (or feet), after which an alcohol-based hand sanitizer containing at least 60-percent ethyl alcohol is applied. Allow the sanitizer to air dry on the skin; wiping the sanitizer from the skin using a cloth or paper towel will render the sanitization process ineffective and is not authorized.

(5) *Eating, drinking, and tobacco use.*

- (a) Employees and patrons may not eat or drink in massage treatment areas.

(b) Smoking (tobacco and nontobacco products such as electronic/vapor cigarettes) and using smokeless tobacco products are prohibited inside the facility.

c. Patrons with the following conditions may not receive a massage treatment unless written consent from a medical practitioner is provided:\*

- (1) Exposed skin is inflamed, broken, or scabbed (for example, unhealed sores, cuts, abrasions, or burns).
- (2) A skin infection is present (to include erupted boils or pimples).

#### **4–4. Disinfectants\***

a. Except as specified in paragraph *b*, below, use only EPA-registered disinfection products. Refer to appendix B for additional guidance.

(1) Use disinfection products according to the manufacturers' instructions regarding dilution, application on appropriate surfaces, contact time, and clear water rinse to remove residual.

(a) Allow the disinfectant to remain wet on the treated surface for the longest duration specified on the label to kill the full spectrum of listed bacteria, virus, or fungus.

(b) When required according to the product label, apply a clear water rinse, or wipe the surface using a clean wet cloth after the disinfection contact time has been met.

(2) Requirements for chlorine bleach solutions prepared on premises from a concentrated product include—

(a) Maintaining a chlorine test kit or test paper in the facility to measure the FAC concentration of prepared bleach solutions.

(b) Preparing the bleach solution fresh each day, or more frequently, to ensure the disinfecting concentration specified in subparagraph (2)(c), below, is maintained.

(c) Maintaining a 500-ppm FAC solution for disinfection.

(d) Verifying the concentration of the solution when first prepared and periodically throughout the day to ensure the appropriate concentration is maintained.

(e) Applying a 1-minute minimum wet contact time to achieve disinfection.

(f) Rinsing the disinfected surface as specified in subparagraph (1)(b), above.

b. Foreign brands that meet EU or other nationally-recognized standards for disinfection and contain bactericidal, fungicidal, and virucidal properties may be used overseas when approved by the medical authority, Preventive Medicine, or Command Surgeon.

#### **4–5. Massage tables, chairs, face rests, and mattresses**

a. Provide massage tables, chairs, face rests, and mattresses that are constructed of smooth, durable, and easily cleanable material.

(1) Surface material of cushions, pads, and mattresses are impermeable and free of cracks and tears.

(2) Tape is not used to seal damaged areas that require cleaning and disinfection.

b. Provide the following for massage treatments that require the patron to lie on the floor (for example, Thai massage):

(1) A floor constructed of smooth, impermeable material. Treatment rooms used for floor procedures may not be carpeted.

(2) A floor that is free of damage such as missing grout, broken tiles, tears, or gouges.

(3) An impermeable barrier, such as a mattress pad with linen, between the patron and the floor.

c. Remove cloth barriers; clean and disinfect tables, chairs, face rests, mattresses, and floors at the close of each business day.\*

#### **4–6. Linens, barrier paper, and footwear**

a. Prevent direct skin contact between the patron and the table, table heating pad, mattress, face rest, massage chair, and floor, as appropriate, during a massage treatment.

(1) Use a cloth covering or disposable paper as a barrier between the patron's skin and the common-use surface.

(2) Place a linen barrier between the patron's skin and therapist's feet when performing treatments that involve walking on the patron's back. Barrier material is not required if the patron remains fully clothed.

(3) Except for face rests used with massage chairs, barrier material is not required on the chair if the massage treatment does not require patrons to remove their clothing.

*b.* Cloth coverings, towels, bathrobes, and other issued clothing are used by a single patron and then laundered as specified in subparagraph *g*, below, before being reused.\*

*c.* Maintain barrier linens free from tears and holes.

*d.* Discard barrier paper and issued single-use robes or gowns immediately after use by a single patron.

*e.* Ensure patrons use appropriate footwear (shower shoes, sandals, or slippers) when patrons are required to shower at the facility before or after a massage treatment.\*

(1) Clean and disinfect multiuse footwear by immersing it in a disinfecting solution and as specified in paragraph 4–4 after use by a single patron.

(2) Discard footwear designed as single-use after use by a single patron.

(3) Patrons may be allowed to supply their own footwear for shower use, provided the footwear is not shared with other patrons or retained at the facility.

*f.* Protect clean linens and other issued clothing and footwear from contamination.

(1) Place used/soiled sheets, bathrobes, issued clothing, towels, and other reusable cloth coverings and footwear in labeled containers that are covered or segregated from clean items.

(2) Segregate clean and soiled articles using a separate room, or store clean items in a closed cabinet or covered bins.

*g.* Launder all items using detergent and a hot water cycle as specified in subparagraph 4–2g(2).

(1) Ensure laundered articles are thoroughly dried prior to their storage or use.

(2) Use a commercial laundry service or military field laundry, as appropriate, when the facility is not equipped with a laundry room.

#### **4–7. Oils, creams, and lotions**

Products applied to the skin as part of a massage treatment are commonly referred to as “cosmetics” and may include oils, lotions, powders, ointments, creams, or alcohol.

*a.* Ensure antiseptic products applied to skin are approved by the FDA, or a similar foreign regulatory body, for skin application. Foreign-brand products require review and approval by the medical authority, Preventive Medicine, or Command Surgeon prior to use.\*

*b.* Store skin products—

(1) In their original closed (and clean) container with a label identifying the product contents.

(2) Separately from toxic chemicals such as cleaning supplies.

*c.* Dispense and handle skin products in a manner that prevents cross-contamination of the product and preserves the integrity of the unused product.

(1) Wipe product containers clean after each use to prevent accumulation of product residues on the outside surfaces of the container, including the screw thread area around the cap or dispensing nozzle.

(2) Disinfect the outside surface of the dispensing nozzle on product containers (for pump or spray dispensers) using an alcohol or other disinfecting wipe immediately before or after each session if the product is continuously dispensed by the therapist and applied by hand throughout a single therapy session.\*

(3) Transfer products from bulk containers to a smaller, clean container for application during a single therapy session.

(a) Unused portions of a product that were removed from the product's original container may not be returned to the container.\*

(b) Applicators used to remove the product from the bulk container may not be stored inside the bulk container.

(c) The unused portion of the product that was removed from its original container is discarded at the end of the therapy session in which it was prepared.

*d.* Clean and disinfect reusable containers and applicators after use with a single patron and before refilling.\*

**4–8. Therapy stones and equipment**

- a.* Clean and disinfect therapeutic devices and therapy stones after use on a single patron and according to the manufacturer's instruction or as specified in paragraph 4–4.\*
- b.* Only use a heating device designed specifically for heating therapy stones. Crockpots, microwave ovens, and other improvised heating devices may not be used to heat therapy stones.
- c.* Place the therapy stones in water during the heating process to ensure even heating of the stones.
- d.* Provide a thermometer, and monitor the stone temperature prior to application to ensure the temperature does not exceed 130°F (54°C).

**4–9. Shower and toilet facilities**

- a.* Clean and disinfect showers, locker room floors and benches, and toilet facilities at least once each day.\*
- b.* Maintain showers and plumbing fixtures free from soap scum, mineral buildup, and mildew/mold.
- c.* Maintain floors free from standing water.
- d.* Ensure floor drains are clean and are draining properly.
- e.* Maintain an adequate supply of hand soap, paper towels (or provide an air hand-drying device), and toilet paper in toilet rooms and hand wash sinks.
- f.* Provide only single-use bar soap or bulk liquid or powdered soap that is dispensed from a mounted dispenser when supplied to patrons by the facility.

**4–10. Custodial equipment**

- a.* Clean janitorial supplies after each use, and store them in a designated location away from therapy rooms and clean linens.
- b.* Use one of the following methods to disinfect mop heads weekly:
  - (1) Launder using hot water with detergent and chlorine bleach.
  - (2) Rinse mop heads with clear water to remove soil and soap residuals; then, soak them in a disinfecting solution for the length of time specified by the manufacturer, or 10 minutes, whichever is greater.
- c.* Replace mop heads when excessively worn (for example, deteriorating strings) or soiled.
- d.* Hang the mops head-down to promote drying and prevent contamination of the mop handle.

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## CHAPTER 5

### TROOP HOUSING

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#### 5-1. General

*a.* Troop housing encompasses family quarters, unaccompanied personnel housing (UPH) as characterized in AR 420-1, and guest lodging.

*b.* The criteria presented in this chapter apply directly to the following UPH facilities with multiple occupancy sleeping rooms (two or more personnel) and central or shared latrines:

(1) Barracks used for institutional and collective training, such as initial entry training and advanced skills training, and in an Operational Readiness Training Complex.

(2) Barracks used during unit mobilizations and deployment processing for Civilian personnel.

(3) Barracks, dormitories, and transient UPH for permanent party enlisted and officer personnel.

*c.* The contents of this chapter may also be used as a guide to evaluate sanitation controls at accompanied troop housing and guest lodging facilities. Preventive Medicine personnel generally do not conduct inspections of accompanied housing and guest lodging sleeping rooms unless requested by the garrison commander or housing authority.

*d.* Preventive Medicine assists the installation emergency operations in developing standards and procedures for mobilization, to include evaluating and developing mobilization troop housing and provisions for feeding, potable water, personal hygiene, and other activities necessary to support the health of Soldiers.

#### 5-2. Habitability assessment guidelines

*a.* AR 420-1 requires family housing and permanent-party UPH facilities to be inspected (for habitability conditions) annually or between major deployments. The reference to “major deployments” is generally associated with facilities used during mobilization for contingency or combat operations and major training events.

(1) The responsibility for habitability assessment belongs to the garrison commander.

(2) Assessments are comprehensive in nature and require participation from multiple organizations on the installation, such as DPW, fire, safety, and Preventive Medicine.

*b.* In the absence of a comprehensive assessment coordinated by the installation, Preventive Medicine should conduct annual routine sanitation and health assessments for all training barracks specified in subparagraph 5-1b(1).

*c.* Inspection activities of UPH facilities focus on the sanitation and health criteria outlined in paragraph 5-9. Safety violations observed during the sanitation and health assessment must be reported immediately to the installation safety office for action.

*d.* Sanitation and health assessments—

(1) Are not required for family housing units that remain unoccupied for an extended period of time, unless requested by the garrison commander during a comprehensive adequacy and habitability assessment.

(2) Are conducted within 7 days prior to occupancy of a previously unoccupied UPH facility that is activated for use during a surge, mobilization, or emergency event.

(3) Are conducted weekly or monthly, as appropriate, at UPH facilities when substandard housing conditions persist. Substandard conditions include, but are not limited to—

(a) Reduced sleeping space allocation as specified in paragraph 5-4a.

(b) Poorly ventilated facilities with persistent odors or mold accumulation.

(c) Pest-infested facilities.

(d) Facilities suspected or known to have contributed to a disease outbreak such as Norovirus or other infection as specified in paragraph 5-3.

(4) Evaluate sleeping areas and all common areas such as dayrooms, laundry rooms, showers, latrines, kitchens, and recreational rooms.

### 5-3. Disease transmission

Acute respiratory disease is a leading cause of illness and lost duty time in the military. Influenza, rheumatic fever, meningococcal disease, adenovirus infections, and streptococcal infections can spread explosively through military populations (or any population billeted in open bay or tent-like quarters) when conditions exist involving inadequate space allocation, poor handwashing practices, poor heating or air-conditioning, or poor ventilation exchange with outside air.

*a.* Respiratory diseases are transmitted from person to person primarily via large, virus-laden droplets generated when infected persons cough or sneeze. Droplet spread can happen when droplets from the cough or sneeze are propelled a short distance through the air. The Centers for Disease Control and Prevention guidelines for hospital bed spacing recommend at least 3 feet between infectious and susceptible patients when private isolation rooms are not available. Reducing the risk of acute infectious respiratory disease among personnel living in close quarters requires careful planning for adequate sleeping space allocations.

*b.* Improved standards for barracks hygiene can help reduce the spread of infectious diseases such as Norovirus transmitted by contact with fomites. Developing an effective hygiene plan starts with the acceptance that pathogenic and potentially pathogenic bacteria, viruses, fungi, people, food, insects, and (potentially) the air continually and inevitably introduce protozoa into the indoor environment. An effective hygiene procedure must be applied to reduce microorganisms to a level that is not harmful to health. To achieve a hygienically clean (as opposed to visibly clean) surface, the organisms must be removed or killed by a disinfection process. Methods for removing harmful microbes from surfaces include detergent-based cleaning followed by rinsing; and the use of a disinfecting agent.

### 5-4. Sleeping space allowances

Adequate sleeping area space allocations are required to control the spread of respirable diseases. The senior commander, garrison commander, or brigade commander, as appropriate, is responsible for billeting facilities and the welfare of their occupants and accepts the greater risk of respiratory disease and potential impact on Soldier or mission readiness when space allocations are reduced. The information presented in this section identifies the minimum per-person space allocation to protect health; the time limitations in which reduced allocations may be applied; and the approval requirements prior to implementing a reduced allocation.

*a.* Basic allowances. A minimum of 72 square feet (sq ft) of sleeping area floor space per person is required to control the spread of respirable diseases.

(1) Reducing space allocations below 72 sq ft per person constitutes substandard quarters. Personnel may not be involuntarily housed in substandard quarters for more than 45 days and as specified in paragraphs *b* and *c*, below.\*

(2) The minimum prescribed space allowance may not be reduced for persons in initial military training (to include follow-on initial occupational specialty training) as characterized in subparagraph 5-1*b*(1). Physical and emotional fatigue produced by the training environment, coupled with each individual's varying state of health and fitness, make this population more susceptible to disease.\*

(3) The per-person square footage is calculated by measuring the length and width of the sleeping area and is exclusive of door swing areas, stairs, halls, latrines, utility rooms, recreation areas, storage rooms, built-in closets, and other administrative areas as specified in AR 420-1. In open-bay sleeping arrangements, the floor area occupied by the bed, the space between beds, and the walkway between beds are included in the calculation.

(4) All available billeting, including temporary facilities and tents (when necessary), should be used to ensure the minimum space allowance is met. Table 5-1 provides the dimensions (floor space) for standard military tents and their corresponding maximum sleeping occupancy.

(5) Except as specified in paragraphs *b* and *c*, below, the senior commander responsible for providing the billeting accommodations may approve a reduced allocation for up to 30 days without prior consultation with the medical authority.

(a) A review is required every 30 days when a sleeping space allocation remains below 72 sq ft but is above 54 sq ft.

(b) Extension of a substandard sleeping space allocation beyond the first 30 days requires consultation and approval by the medical authority and the senior commander responsible for providing the billeting accommodations.

*b. Surge situations.* When an unexpected and unplanned surge or mobilization occurs, every effort should be made to achieve the minimum prescribed sleeping space as specified in paragraph 5–4*a*. Refer to paragraph 5–5 for planning guidelines.

(1) Commanders may reduce the allocated sleeping space to 54 sq ft per person to meet mission requirements and should take appropriate actions to afford personnel the maximum floor space possible.

(2) Applying a reduced sleeping space allowance of 54 sq ft for more than 7 days requires approval by the senior commander after consultation with the medical authority or designated Preventive Medicine representative.

*c. Emergency situations.* The senior commander responsible for providing the billeting accommodation may approve sleeping area space allocations that are less than 54 sq ft per person during emergencies and temporary peak billeting loads.

(1) Sleeping space allocations less than 40 sq ft per person are not authorized.\*

(2) The maximum length of time in which an emergency allocation (40–53 sq ft per person) may be used is 72 hours.\*

(3) Consultation with the medical authority, as specified in subparagraph 5–4*d*, is required prior to approving the emergency space allocation.

*d.* The medical authority, Preventive Medicine representative, or Command Surgeon, as appropriate, conducts a situation review to assess the impacted facility and population, feasible alternatives for providing temporary housing, and the expected duration in which the emergency condition will be applied.

**Table 5–1. Examples of tent living space and maximum occupancy for sleeping**

Type	Floor Space <sup>1</sup> (sq ft)	Number of occupants for allocated floor space per person		
		72 sq ft	54 sq ft	40 sq ft
Tent, General Purpose (GP)–small	216	3	4	5
Modular General Purpose Tent System (MGPTS)–small	324	4	6	8
GP–medium	512	7	9	12
Temper Tent <sup>2</sup>	640	8	11	16
MGPTS–medium	648	9	12	16
GP–large; MGPTS–large	972	13	18	24
<sup>1</sup> Occupancy rates may be applied to other temporary facilities with equivalent floor space.				
<sup>2</sup> Represents a 4-section temper tent configuration (20 ft x 32 ft).				

## 5–5. Surge and mobilization

*a.* Mobilization and surge planning is a required and deliberate activity conducted by the garrison staff. The billeting standard for Soldiers during surge and mobilization periods (such as those defined by 10 USC 12304) is 72 sq ft per person. Additional guidance regarding space allocations is provided in paragraph 5–4*b*.

*b.* Reserve Officer Training Corps basic and advanced summer camps do not constitute a surge, a mobilization, an emergency, or a very short-term, temporary peak billeting load. The annual training cycle of these cadets on military installations is known and planned in advance of the training.

*c.* Installation commanders should review and update surge and mobilizations plans annually to anticipate requirements and determine availability and suitability of facilities designated to house personnel. Consideration should also be given to identify alternate facilities such as warehouses, gyms, chapels, recreational areas, and other

temporary buildings that may be used to house personnel in emergency situations. The public health aspect of the review includes—

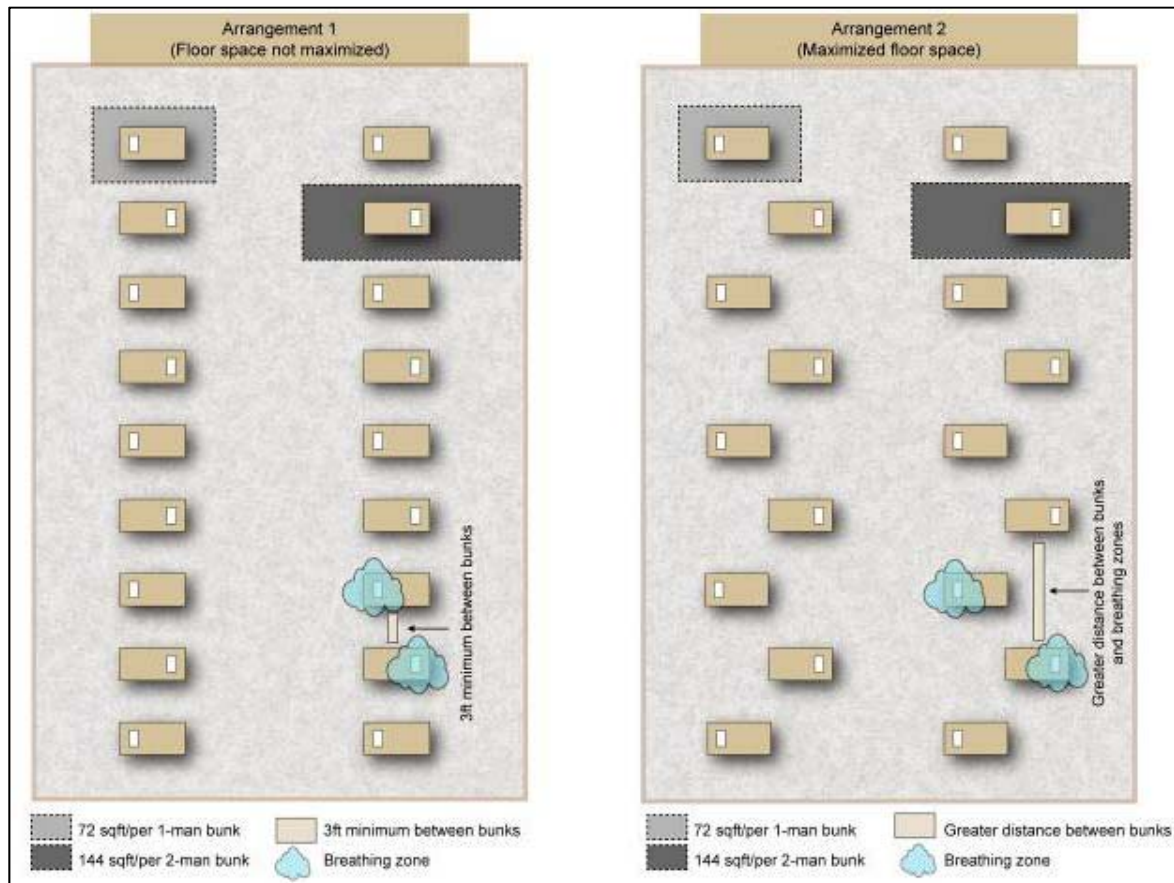
(1) Evaluating the maximum occupancy capacity of each facility based on 72 sq ft, 54 sq ft, and 40 sq ft per person.

(2) Determining the adequacy of toilet facilities, urinals, showers, and laundry based on gender and population size, and identifying requirements for additional facilities. Evaluations for using portable toilets and hand wash facilities include the number of facilities required, placement/location in proximity to sleeping facilities, and servicing frequency.

(3) Emergency plans for manmade or natural disasters or adverse weather events, which require temporary housing of nonmilitary personnel, dependents, civilian employees, and others. These plans should include provisions for housing by Family unit, housing disabled or elderly persons, or housing by gender and/or age when persons are below 12 years of age.

### 5-6. Sleeping configuration

Implement a head-to-toe sleeping pattern in multi-occupant sleeping areas to maximize the distance between breathing zones and further reduce the risk of spreading respiratory diseases (see figure 5-1).



**Figure 5-1. Sleeping Configuration**

- a. A 2-person bunk requires 144 sq ft of floor space if both beds are occupied. The head-to-toe sleeping pattern applies to the top and bottom bunk in addition to the adjacent bunks.
- b. Extra (unoccupied) beds that would extend the bay occupancy and result in a sleeping space that is below the minimum required standard specified in paragraph 5–4a should be removed to allow maximum spacing between the remaining beds.
- c. Provide at least a 3-ft space between beds.
- d. The distance between beds may be reduced if the 72-sq ft per person allocation is met and a barrier such as a privacy curtain or other partitioning device (wall locker, for example) is placed between the beds.

### 5–7. Plumbing fixtures

Design codes, standards, and criteria for plumbing in all DOD facilities are prescribed by Unified Facilities Criteria (UFC) 3–420–01 and U.S. Army Corps of Engineers (USACE) Engineer Manual (EM) 200–1–13 for control of Legionella bacteria in potable water systems. The DPW ensures plumbing design, installation, and maintenance conform to the prescribed publications. Preventive Medicine conducts an adequacy assessment for plumbing fixtures to ensure—

- a. Hot and cold potable running water is available.
  - (1) The hot water temperature measured from the boiler room or hot water heater is a minimum of 140°F (60°C) to control potential growth of Legionella bacteria.\*
  - (2) The minimum hot water temperature at point of use should be 120°F (49°C).
- b. Plumbing fixtures are flushed prior to occupancy when a billeting facility has been vacant for more than 30 days.
- c. There is no buildup of sediment, scale, or biofilm on shower heads and faucets since these conditions will further promote the growth of Legionella bacteria.
- d. There are no cross-connections present. Hoses may not remain connected to sink faucets or outdoor spigots when not in active use.
- e. Plumbing fixtures are free from leaks. Wet or damp conditions combined with other unsanitary conditions may contribute to pest problems by providing suitable conditions for cockroach and rodent occupancy.
- f. The facility is not using an alternate sewage (black and gray water) collection mechanism. Alternate sewage collection mechanisms, such as retention tanks or bladders, are authorized for temporary facilities used during an emergency. Consult with Preventive Medicine to review and approve plans prior to use.
- g. Supplies of hand soap, paper towels or forced-air hand-drying devices, and toilet paper are provided at all times in toilet rooms and at hand wash sinks. Dispense liquid or powdered hand soap from mounted dispensers; bar soap may not be supplied for common use by facility occupants.

### 5–8. Ventilation

The health effects of indoor environments are very complex and not fully understood; there are limited studies to support dilution ventilation as an intervention for the prevention of respiratory disease. However, in the absence of health-based recommendations, dilution ventilation criteria developed by the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) are accepted by industry as an effective means to improve building occupant comfort. Barracks are ventilated to dilute unpleasant odors, airborne microorganisms and dusts, and to reduce temperature and humidity during warm weather.

- a. According to ASHRAE, indoor carbon dioxide measurements greater than 700 ppm above outdoor air concentrations will make building occupants uncomfortable with respect to odors generated.
  - (1) Measuring carbon dioxide levels is a reasonable surrogate for the direct measurement of a building's ventilation.
  - (2) Carbon dioxide levels are effectively controlled by maintaining a minimum dilution ventilation rate of 5 cubic feet of fresh outdoor air per minute per person and 0.06 cubic feet of fresh outdoor air per minute per square foot of floor space.
- b. The use of high-efficiency particulate air (HEPA) filters is not recommended for barracks. Although HEPA filters remove a much larger percentage of bacterial and viral respiratory disease agents than regular filters, there are insufficient population-based studies that examine the ability of HEPA filters or regular filters to reduce disease

rates in a nonhealthcare setting. Additionally, use of HEPA filters is not cost effective; the movement of air through the filter requires a large amount of energy, and the estimated cost of operating HEPA filters is at least 50 percent more than that of non-HEPA filters.

c. Building temperature and humidity are often considered matters of personal comfort. However, studies have demonstrated an association between the temperature and health symptoms and perceived air quality. Lower humidity is sometimes associated with mucous membrane irritation, and higher humidity is sometimes associated with poorly perceived air quality. Higher humidity can support the growth of pathogenic or allergic organisms such as fungi, mycotoxins, and dust mites. Growth is enhanced by the presence of materials with high cellulose content such as fiberboard, dust, skin particles, dander, and lint. An optimum indoor environment is achieved by maintaining—

(1) A temperature range between 68°F (20°C) and 78°F (25.5°C).

(2) Relative humidity between 20 and 60 percent. Maintaining the lower limit at no less than 30 percent is further recommended by ASHRAE as a more effective means to minimize the growth of allergenic and pathogenic organisms.

d. Preventive maintenance measures specified in EM 200–1–13 for cooling towers, evaporative cooling systems, humidifiers, and other similar ventilation systems or components are required to control *Legionella* bacteria.

e. No amount of extra ventilation can compensate for overcrowding. In nonmechanically-ventilated facilities, windows should be partially opened (except during extremely cold weather) when persons are sleeping. Local agreements should be reached between the Facilities Engineer and Preventive Medicine representative to achieve desired ventilation with minimum loss of heating equipment efficiency. UFC 3–410–01 prescribes the design codes, standards, and criteria for the heating, ventilation, and air-conditioning systems for DOD facilities.

f. Proper ventilation is essential to control indoor mold growth in areas where high-moisture conditions persist, such as laundry rooms and shower facilities.

## **5–9. Sanitation and hygiene**

a. Cleaning. The process of cleaning using an appropriate detergent solution, and applying friction by scrubbing or wiping the surface, removes residue and is considered the primary (and effective) means for reducing the amount of germs on a surface. Proper cleaning is also essential to prevent the development of unpleasant odors.

b. Disinfection. Disinfection, which is the process applied to surfaces that are expected to have pathogenic organisms which are easily transmitted to individuals, is the essential step needed to destroy pathogens.

(1) Use only EPA-registered disinfectants or foreign brand disinfecting agents that are approved by the medical authority, Preventive Medicine, or Command Surgeon. Refer to appendix B for additional guidance regarding the selection of antimicrobial products.

(2) Ensure products are used according to the manufacturer’s label.

(3) When using chlorine bleach from a bulk stock—

(a) Prepare a fresh solution each time a disinfection task is performed (once each day, for example).

(b) Dilute the product to a minimum disinfecting concentration of 500 ppm FAC (refer to table B–1 for mixing guidance and concentration verification). Applying bleach with excessively higher concentrations can cause skin and eye irritation and may induce an asthma response in some individuals. Ensure areas are well ventilated when bleach products are in use. Wearing latex or rubber gloves is also recommended when bleach or other disinfecting products are mixed or applied.

(c) To achieve disinfection, apply the chlorine solution to the treated surface for a 1-minute wet contact time.

(d) Rinse or wipe the disinfected surface with clear water to remove the remaining chemical residual.

c. Sanitation practices. The frequency with which items are either cleaned or cleaned and disinfected depends on the type of item. Refer to table 5–2 for recommended cleaning cycles and processes.

**Table 5–2. Recommended cleaning cycles and processes**

Item/Location	Daily	Weekly	Every 3 Weeks	Quarterly	Before use by Different Person	Between Training Cycles
Toilets, urinals, showers, sinks	C <sup>1</sup> + D <sup>2</sup>					
Wall area around toilets and urinals	C + D					
High-touch areas (doorknobs, handles, light switches)	C + D					
Floors, windowsills		C				
Walls, other horizontal surfaces, blinds				C		C
Kitchen area <sup>3</sup>	C	C				
Clothing		C <sup>4</sup>			C	
Linens (sheets)		C <sup>4</sup>			C	
Blankets, cloth mattress covers			C <sup>4</sup>		C	
Pillows			C <sup>4</sup>		C	
Mattress covers (plastic)					C	C
<sup>1</sup> C – clean <sup>2</sup> D – disinfect <sup>3</sup> Cleaning of shared kitchens in troop housing is the occupants' responsibility. <sup>4</sup> Follow the laundry guidance provided in chapter 10.						

(1) *Toilets, urinals, showers, and sinks.* Clean and disinfect toilets, sinks, showers, and urinals daily to prevent the buildup of scale and microbial films (for example, mold, mildew, biofilm), which can harbor pathogens.

(2) *Floors, walls, and other surfaces.* Exposure to pathogens as a result of microbial contamination on floors and furnishings is very low. The transfer of microorganisms from environmental surfaces to individuals is largely via hand contact with the surface.

(a) Conduct daily cleaning and disinfection of high-touch surfaces such as doorknobs, handles, light switches, and the wall areas around toilets.

(b) Conduct weekly cleaning of horizontal surfaces such as windowsills and floors. More frequent cleaning may be necessary to keep these surfaces visibly clean. Extraordinary floor cleaning with disinfection is not recommended.

(c) Clean walls, blinds, and window curtains between training cycles; at least quarterly; or more frequently if visibly soiled.

(3) *Laundry, mattresses, and pillows.*

(a) Launder soiled clothing and linens (for example, sheets and pillow cases) weekly. Chapter 10 provides guidance for appropriate laundry procedures.

(b) Launder blankets, pillows, and mattress pads (cloth) every 3 weeks; when they become soiled; and before use by a different person.

(c) Plastic-covered mattresses are preferred for ease of disinfection. Clean and disinfect plastic mattress covers between training cycles or when a change of personnel occurs. If fabric mattresses are used, keep them dry. Discard mattresses and pillows if they become and remain wet (for example, 24 hours or more); are stained; or become torn or unserviceable.

(d) Protect clean linens from sources of contamination when stored at the facility.

(4) *Kitchens and breakrooms.* If not properly maintained, kitchen facilities and breakrooms equipped with any combination of a stove, microwave oven, refrigerator, or cooking utensils will promote pest harborage and infestation.

(a) Ensure kitchen equipment and utensils are cleaned after each use to prevent accumulation of encrusted food, grease residues, or other food debris.

(b) Clean common-use refrigerators weekly to prevent accumulation of food debris and expired foods.

(c) Clean floors, walls, and other surfaces as specified in subparagraph *c*(2), above.

(d) In common areas, provide waste receptacles with a tight-fitting lid and plastic liner to prevent attracting pests and to facilitate cleaning. Do not reuse plastic liners. Clean waste receptacles when they become soiled from spilled or leaking food and beverages.

(5) *Custodial closets and supplies.* Ensure appropriate cleaning equipment and supplies are readily available for maintenance of common areas.

(a) Keep custodial closets clean and organized.

(b) Remove debris from custodial sinks after each use.

(c) Store cleaning chemicals properly to prevent a health and safety hazard. Do not mix chemicals (ammonia products and bleach, for example).

(d) Clean mops, mop buckets, and sponges after each use and prior to storage. Mops should be hung to prevent the wet mop head from contact with the handle. Replace heavily soiled or frayed mop heads and sponges.

(6) *Personal items.* Individuals are responsible for managing their personal items and equipment. Leaders ensure—

(a) Personal items are properly stored to prevent area clutter.

(b) Personal equipment is cleaned prior to storage.

(c) Soiled clothing is contained in a laundry bag or other suitable closed container and washed at least weekly, or more frequently, to prevent odors.

(7) *Animals.* Personal pets, unit mascots, and military working dogs may not be housed in UPH facilities characterized in paragraph 5–1*b*. According to Office of the Assistant Secretary of the Army Policy, Domestic Animals on Army Installations, only service dogs (as defined by the Americans with Disability Act) are authorized in UPH.

(a) The senior commander has authority over installation access for all animals. Consultation with the supporting medical authority (or Preventive Medicine) is required when considering an animal as a unit mascot. Approved mascots are authorized access to the common areas of the barracks (dayroom and administrative offices).

(b) Unit mascots must have appropriate Veterinary Services documentation of immunizations and health evaluations.

(c) Ensure unit personnel with known pet allergies are identified, and prohibit mascots from entering the common areas within the barracks if personnel have associated allergies.

(d) Military working dogs are authorized in all areas of the facility during official inspections.

(8) *Pest barriers.* Pest infestations occur when unsanitary conditions exist and suitable access is available for pests to enter the facility. Barrier controls include—

(a) Repairing and replacing torn or missing window screens.

(b) Sealing cracks, holes, and gaps in walls and ceilings. This includes the area around windows and outside door frames, gaps under outside doors, and gaps between plumbing and electrical conduits.

*d. Hygienic controls.* Good personal hygiene practices further decrease the potential for disease transmission and individuals' susceptibility to becoming ill. Leaders at all levels should emphasize the following personal hygiene practices for all Soldiers:

(1) Wash hands often, particularly after latrine use, before touching food, and after sneezing or blowing your nose.

- (2) Keep hands away from the eyes, nose, and mouth.
  - (3) Cover your mouth with your sleeve when sneezing or coughing.
  - (4) Drink plenty of liquids to stay hydrated.
  - (5) Follow nutritional guidelines for a balanced diet.
  - (6) Seek medical attention if you have a sudden onset of diarrhea with vomiting.
  - (7) Follow the prescribed head-to-toe sleeping requirement.
- e. Hand sanitizers. Alcohol-based hand sanitizers containing at least 60-percent ethyl alcohol may be used as an added personal protective measure.
- (1) Use of hand sanitizers should not replace proper handwashing.
  - (2) Soldiers should receive training regarding the proper use of hand sanitizers.
  - (3) Leadership should supervise and enforce proper hand sanitizer use.
- f. Information products. Posters for injury and illness prevention are available at the Training and Doctrine Command Surgeon Web site: <http://www.tradoc.army.mil/surgeon/index.htm>; select “Injury Prevention & Human Performance” from the menu. Barracks hygiene and other posters are also available from the U.S. Army Public Health Center Web site: <https://usaphcapps.amedd.army.mil/hioshoppingcart/>.

### **5–10. Inspection criteria**

Table 5–3 is provided as a UPH inspection reference guide. The table summarizes the key items presented in this chapter and their corresponding reference paragraph(s).

**Table 5–3. Troop housing inspection reference**

<b>Inspected Item</b>	<b>Reference Paragraph</b>
Cleanliness of floors, walls, ceilings, and surfaces: <ul style="list-style-type: none"> <li>• Free of spills</li> <li>• No excessive dust, soil, or debris accumulation</li> </ul>	5–9c(1), (2), (4)
Availability and cleanliness of trash receptacles: <ul style="list-style-type: none"> <li>• Properly-fitting lids</li> <li>• Plastic liners</li> <li>• Emptied daily or more frequently to prevent overflow</li> </ul>	5–9c(4)(d)
Cleanliness of common areas: <ul style="list-style-type: none"> <li>• Kitchen: no encrusted food or residues on appliances, equipment, and utensils</li> <li>• Dayrooms and laundry rooms: no clutter, debris, or heavy dust accumulation</li> <li>• Custodial closets: equipment is clean; stored properly</li> </ul>	5–9c(4), (5)
Ventilation adequacy: <ul style="list-style-type: none"> <li>• No objectionable odors</li> <li>• No excessive condensation on walls or ceiling</li> <li>• No musty odors or evidence of mold or mildew accumulation</li> <li>• Adequate temperature and humidity settings</li> </ul>	5–8
Plumbing fixtures: <ul style="list-style-type: none"> <li>• Free of leaks, scale, sediment, and biofilm buildup</li> <li>• No cross-connections</li> <li>• Flushed prior to building occupancy</li> <li>• Adequate hot water temperature to control <i>Legionella</i> bacteria</li> </ul>	5–7
Pest barriers: <ul style="list-style-type: none"> <li>• No evidence of pests</li> <li>• No missing/torn window screens or cracks, holes, or gaps in walls or around doors/windows, plumbing, or electrical conduits</li> </ul>	5–9c(8)
Animal restrictions: No pets/mascots in sleeping and kitchen areas or any common area if barracks occupants have a related pet allergy	5–9c(7)
Bedding and linens: <ul style="list-style-type: none"> <li>• Mattresses and pillows are clean; free from stains and tears</li> <li>• Proper linen exchange</li> <li>• Clean linens protected from contamination during storage</li> <li>• Appropriate laundering practices</li> </ul>	5–9c(3)
Sleeping space: <ul style="list-style-type: none"> <li>• Adequate floor space allocated per person</li> <li>• Approval documentation available for substandard space allocations</li> <li>• Head-to-toe sleeping arrangement</li> </ul>	5–4 5–6
Latrines and shower rooms: <ul style="list-style-type: none"> <li>• Appropriate cleaning supplies on hand</li> <li>• Facilities cleaned and disinfected daily</li> <li>• Hand soap supplied in liquid or powder form with dispenser; no bar soap</li> <li>• Paper towels and toilet paper available</li> </ul>	5–7g 5–9a, b, e
Leadership emphasis for hygienic controls: <ul style="list-style-type: none"> <li>• Personal items: clean; properly stored</li> <li>• Enforcement: handwashing, hand sanitizer, cough/sneeze etiquette</li> <li>• Hygiene and health posters/information products available</li> </ul>	5–3b 5–9c(6) 5–9d, e, f

## CHAPTER 6

### MANUFACTURED HOME PARKS

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#### 6-1. General

*a.* Manufactured homes (or mobile homes) are a component of troop housing. General requirements for manufactured homes are contained in AR 420-1.

*b.* Manufactured home parks include installation areas designated and designed as permanent or temporary sites for residential use. They do not include areas intended for temporary habitation using campers, recreational vehicles, travel trailer homes, or other similar wheeled vehicles (refer to chapter 7).

*c.* The contents of this chapter address the minimum sanitation requirements for operating a manufactured home park. Manufactured home parks are expected to comply with applicable state and local regulations and ordinances.

*d.* The installation public health authority, acting as an agent of the installation commander, has the right of entry, at reasonable times, into any manufactured home park on the installation, whether operated by a private entity or the DOD, for the purpose of inspecting conditions relative to health and sanitation within the park as presented in this bulletin. The installation public health authority may initiate an inspection if presented with a complaint or there is suspicion of unsanitary or unsafe conditions, or upon request by the installation commander or designated representative (AR 420-1).

#### 6-2. Location

*a.* Locate the manufactured home park—

(1) In level, well-drained areas.

(a) Adequate drainage is characterized by the absence of pooling and prolonged presence of standing water after a heavy rain event. For example, pooled water should drain from the surface within 24 hours or less after the rain has stopped.

(b) When constructed, storm drainage systems may not endanger a water supply.

(2) At a sufficient distance from swamps, marshes, breeding sites for insects and rodents, and heavy industrial zones where exposure to health hazards could occur.

*b.* Provide the manufactured home park with walkways, vehicle parking, and all-weather roads, with unimpeded ingress and egress to each site space and within the park, and with surfacing to control dust and mire.

*c.* Ensure recreation areas operated within the manufactured home park—

(1) Are free of traffic hazards.

(2) Accommodate various age groups.

(3) Are provided in numbers or capacity consistent with the park population.

#### 6-3. Manufactured home space

*a.* Provide a minimum space of 45 ft by 70 ft for each manufactured home. Ensure the space is level and well-drained both under and adjacent to the manufactured home.

*b.* Ensure the site space for double-wide or extended-length manufactured homes is at least 25 ft wider and 20 ft longer than the manufactured home.

*c.* Position manufactured homes a minimum of 10 ft from park boundaries and 15 ft from adjacent homes within the park.

#### 6-4. Design criteria

*a.* Design and construct manufactured homes according to National Fire Protection Association (NFPA) Standard 501A and standards for commercial-type trailers. NFPA-501A addresses the installation of manufactured homes and home sites, including accessory buildings, structures, and communities.

*b.* Ensure the home structure provides at least 35 sq ft of floor space per occupant and is designed with a bath or shower, flush toilets, and plumbed kitchen facilities, all of which discharge to the sewer system.

*c.* Closed porches and sunrooms are authorized, provided they meet local building codes and minimum clear space requirements. Ensure open porches, awnings, and original-equipment expandable rooms provide a minimum clear area of 10 ft between the manufactured home and the individual parking area.

*d.* Lean-tos or additional rooms may not be attached to the manufactured home.

*e.* If locally authorized, storage sheds—

- (1) Are provided with a suitable foundation and flooring.
- (2) May not be attached to the manufactured home.
- (3) May not be used for human habitation.

*f.* Provide adequate area illumination so that roads, walkways, and other lighted areas are clearly visible without annoyance to manufactured home occupants.

*g.* Provide electrical power service that complies with applicable electrical codes and ordinances for each manufactured home space. Terminals and outlets should be adequately secured to prevent electric shock hazard and should be located to ensure protection from tampering or breakage.

*h.* Provide fire protection IAW the installation, local, or state fire prevention authority.

### **6–5. Water supply**

Design, construct, and install plumbing and connections as specified in the Uniform Plumbing Code (UPC)<sup>TM</sup> and applicable state or local codes, if more stringent.

*a.* Provide adequate water pressure to each manufactured home space.

*b.* Provide potable water supplied from an approved public system as specified in TB MED 576. This may include a municipal water supply or a well that has been permitted by the local health department.

*c.* Provide water connections that—

- (1) Consist of two, ¾-in.-valved outlets with backflow prevention.
- (2) Extend at least 12 to 18 in. above the ground surface.
- (3) Are located at least 10 ft from the sewer connection.
- (4) Are located to prevent damage by movement of manufactured homes.

*d.* Ensure water connections are—

- (1) Protected from freezing.
- (2) Sealed or capped when not connected to a manufactured home.

### **6–6. Sewage and liquid waste disposal**

*a.* Ensure wastewater and sewage are discharged to a public sewage system or private system (for example, septic tank).

*b.* Provide a vertical drainpipe with a minimum 3-in. connection to the sanitary sewer for each manufactured home space.

(1) Equip the connection with a freeze-proof trap (that is, trap located below the frost line) and a clean-out fitting.

(2) Ensure the connection between the wastewater drainage system of the manufactured home and the vertical drain is designed as self-draining and watertight, prevents odors and leakage, and excludes insects and rodents.

(3) Ensure vertical drains are capped or sealed when not connected to a manufactured home.

*c.* Surround the sewer connection with a protective concrete curb at least 3 in. deep and 12 in. from the connection.

### **6–7. Service buildings**

AR 420–1 does not require installation of a service building to support the manufactured home park. Service buildings that are present within the manufactured home park should—

*a.* Provide adequate indoor and outdoor lighting, window screens, and ventilation.

*b.* Provide heat to maintain a minimum temperature of 65°F (18.3°C) in cold weather.

*c.* Ensure the following are applied to laundry, toilet, and shower rooms—

- (1) Walls, ceilings, and floors are installed using moisture-resistant materials.
- (2) Floors are sloped to drains that connect to the sewage system.

(3) Hot water temperature measured from the boiler room or hot water heater is maintained at a minimum temperature of 120°F (49°C) to control potential growth of *Legionella* bacteria.\*

(4) The minimum hot water temperature at point of use is 100°F (38°C).

(5) Toilet rooms and hand wash sinks are supplied with toilet paper, dispensed liquid or powder soap, and disposable paper towels a or forced-air hand-drying device.

(6) A covered, plastic-lined waste receptacle is provided for each toilet and laundry room.

*d.* Ensure the service building and fixtures are cleaned and disinfected at a frequency that precludes accumulation of debris, development of objectionable odors, accumulation of mold and mildew, and accumulation of mineral deposits (that is, scale) on plumbing fixtures.

#### **6–8. Area sanitation**

*a.* Provide waste receptacles for management of bulk waste generated by park residents.

(1) Ensure receptacles are durable, easily cleanable, rodent-proof, and have tight-fitting lids or doors.

(2) Ensure containers have sufficient capacity for weekly collection.

(3) Ensure containers are clean and serviceable.

(4) Ensure onsite burning of waste is not practiced.

*b.* Maintain the manufactured home park's common areas and individual home sites free from—

(1) Litter.

(2) Unnecessary or damaged equipment or other items that may present a safety hazard or promote pest harborage.

(3) Insect and rodent harborages or breeding areas. Actions include—

(a) Preventing overgrowth of grass and vegetation around play areas, manufactured home units, and service buildings.

(b) Eliminating conditions that allow water to pool for extended periods (for example, more than 24 hours).

*c.* Ensure pets are controlled at all times and have current vaccinations and registration. Ensure park residents—

(1) Promptly remove pet feces from common areas and around their home site.

(2) Do not place excess pet food outside of their home as the food may attract wildlife and pests.

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## CHAPTER 7

### RECREATIONAL AREAS

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#### 7-1. General

*a.* For the purpose of this bulletin, recreational areas include facilities and land areas that are located on an installation or site governed under Army regulations or specified by service contract with DOD to provide recreational use by DOD beneficiaries. Recreational areas include indoor and outdoor facilities such as parks, playgrounds, athletic fields, RV parks, campgrounds, and recreation centers.

(1) A recreation center generally offers indoor leisure activities, such as audio and video entertainment, table games, and board games, and may include a small food concession. A recreation center may operate outdoor facilities such as batting cages, basketball court, miniature golf, or other leisure activities. Recreational centers are typically operated through the United Service Organizations or Family Morale, Welfare, and Recreation but may include facilities located in privatized housing areas.

(2) Food concessions operated in support of a recreational area are assessed separately IAW TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP .

(3) Recreational waters, such as swimming pools, natural bathing areas, and water parks, are evaluated separately from the associated recreational area IAW TB MED 575. Hygiene facilities (bathhouse) that directly support the water venue are inspected as a component of the water venue.

(4) Fitness facilities and gymnasiums are not assessed as recreational areas. Refer to chapter 3 for assessment of fitness operations.

*b.* Guidelines presented in this chapter represent minimum sanitation requirements for the use and operation of recreational areas. Design and construction criteria must comply with applicable state and local regulations and ordinances when a more stringent requirement is presented.

*c.* Recreational areas that sponsor group camps are expected to conform to space and sleeping area configurations established in paragraphs 5-4 and 5-6.

*d.* Requirements of this chapter apply to new construction or renovation of existing recreational areas. Recreational areas constructed prior to the effective date of this publication and that do not comply with established criteria may be considered for an exemption. Preventive Medicine should conduct a facility risk assessment to determine if there is an elevated risk for disease transmission or injury. Recommendations provided by Preventive Medicine for temporary mitigation of high-risk situations are implemented until permanent actions to correct noncompliant conditions are completed.

*e.* Preventive Medicine, acting as an agent of the installation commander, has the right of entry, at reasonable times, into any recreational area on the installation, whether operated by a private entity or the DOD, for the purpose of inspecting conditions relative to health and sanitation as presented in this bulletin.

#### 7-2. Location

*a.* Locate outdoor recreational sites—

(1) In level, well-drained areas.

(a) Adequate drainage is characterized by the absence of both pooling and the prolonged presence of standing water after a heavy rain event. For example, pooled water should drain from the surface within 24 hours or less after the rain has stopped.

(b) Construct storm drainage systems to protect against soil erosion and to protect the watershed.

(2) At a sufficient distance from swamps, marshes, breeding sites for insects and rodents, and heavy industrial zones where exposure to health hazards could occur.

*b.* Provide recreational areas with walkways, vehicle parking, and all-weather roads surfaced to control dust and mire. Ensure ingress and egress to campgrounds, campsites, RV parks, and within the recreational facility area are unimpeded and free of traffic hazards.

*c.* Provide a minimum area of 1,000 sq ft for designated RV parks, and the following minimum distances:

(1) 15 ft on all sides between RVs.

## TB MED 531

- (2) 25 ft between the RV and the area boundary that is adjacent to a public roadway.
- (3) 15 ft between the RV and other area boundaries.
- d.* Maintain picnic areas, playgrounds, athletic fields, and campsites, excluding wilderness areas, free of hazards such as rock outcrops and fallen trees/branches.
- e.* Provide sufficient control of poisonous plants and overgrown vegetation to minimize exposure to disease-carrying arthropods and insects; snakes; and small animal hazards.

### 7-3. Water supply

- a.* Provide a potable water supply at all recreational areas except designated wilderness areas.
  - (1) Ensure potable water and onsite ice production are supplied from an approved public water system as specified in TB MED 576. This system may include a municipal water supply or a well that has been permitted by the local health department or approved by Preventive Medicine.
  - (2) Bulk water for public consumption that is made available from portable containers (for example, a “water buffalo” or large-capacity coolers) is supplied from an approved source as specified in subparagraph *a*(1), above.
    - (a) Ensure bulk water containers are appropriate for storing potable water, are used exclusively for potable water, and are labeled as “drinking water” or “potable water.”
    - (b) Clean and sanitize bulk water containers prior to use, and protect the water from contamination once the containers are filled.
    - (c) Replenish bulk containers having a 5-gallon capacity or less with fresh water every 12 hours if not consumed.
    - (d) Manage bulk containers having a greater than 5-gallon capacity as field water IAW TB MED 577. Maintain at least a trace FAC residual at all times.
    - (e) When supplied, bottled water is purchased from a military-approved source as specified in AR 40-657/NAVSUP 4355.4H/MCO P10110.31H.
- b.* Design, construct, and install plumbing and connections as specified in the current UPC and other applicable state or local codes if more stringent.
  - (1) Ensure adequate water pressure is supplied to all outlet taps and connections. Provide RV parks a minimum of 150 gallons per unit per day.
  - (2) Ensure sanitary potable water connections with the following controls are provided for each RV parking space. These connections—
    - (a) Consist of two, ¾-in.-valved outlets with backflow prevention.
    - (b) Extend at least 12 to 18 in. above the ground surface.
    - (c) Are located at least 10 ft from the sewer connection.
    - (d) Are sealed or capped when not connected to RV vehicle service.
  - (3) Ensure all plumbing and connections are protected from freezing and are located to prevent damage by the movement of vehicles.
  - (4) Locate campground water hydrant stations within 150 ft of campsites and picnic areas, and ensure there is proper drainage to prevent standing water.
- c.* Provide drinking fountains in sufficient numbers, locations, and of a safe and sanitary design according to plumbing codes.
- d.* Provide appropriate signage or markings at all nonpotable plumbed or containerized water sources to warn against human consumption.

### 7-4. Service buildings

- a.* Provide a service building with separate toilets and showers for males and females at all RV parks and campgrounds.
- b.* Locate service buildings or comfort stations within 300 ft (or according to State regulations if more stringent) of all campsites and within 500 ft of individual picnic sites. These distances also apply to the placement of non-water carriage systems.
- c.* Provide a service building containing separate toilets for males and females at athletic fields that are not conveniently located with or supported by an adjacent facility such as a fitness center.

- (1) Ensure toilet facilities located in an adjacent building that is intended to support the athletic field is accessible during all hours in which the athletic field is authorized for use.
- (2) Provide portable toilets when a service building or adjacent facility is not available.
  - (a) Ensure portable toilets have at least one hand wash station available, or supply each toilet with a hand sanitizer containing at least 60-percent ethyl alcohol.
  - (b) Ensure portable hand wash stations are adequately supplied with clean water, are labeled “nonpotable,” and are equipped with a waste water collection tank.
  - (c) Ensure portable toilet facilities are pumped, cleaned, and disinfected at a frequency that prevents noxious odors, attraction of pests, and overflow.
- d. Construct service buildings—
  - (1) As permanent and substantial structures that are capable of serving as an emergency storm shelter and accommodating 110 percent of the area’s occupancy.
  - (2) With adequate indoor and outdoor lighting, window screens, and ventilation.
  - (3) With heat to maintain a minimum temperature of 65°F (18.3°C) in cold weather.
- e. Provide toilet and shower facilities (and laundry facilities, if present) with hot and cold water as directed in the UPC and as follows:
  - (1) The temperature of hot water measured from the boiler room or hot water heater is a minimum of 120°F (49°C) to control potential growth of *Legionella* bacteria.\*
  - (2) The minimum hot water temperature at point of use is 120°F (49°C).
  - (3) Separate toilet and shower facilities are provided for each gender with appropriate gender signage. A permanent floor-to-ceiling barrier separates such facilities located in the same building.
  - (4) Except as specified in table 7–1, a minimum of two toilets for females, one toilet and one urinal for males, and two hand wash sinks for each gender, are provided.
  - (5) Walls, ceilings, and floors are constructed of moisture-resistant materials.
  - (6) Floors are sloped to drains that connect to the sewage system.
  - (7) Exterior doors open outward and are self-closing.

**Table 7–1. Minimum requirements for comfort stations**

RV Parks and Campgrounds					
Number of Sites	Toilets		Hand Wash Sinks		Urinals (Men’s)
	Men’s	Women’s	Men’s	Women’s	
1–20	1	2	1	2	1
21–30	2	3	2	2	2
Picnic Areas					
Car Parking Spaces	Toilets		Hand Wash Sinks		Urinals (Men’s)
	Men’s	Women’s	Men’s	Women’s	
1–40	1	2	1	2	1
41–80	2	4	2	2	2

- f. Supply toilet rooms and hand wash sinks with toilet paper, liquid or powder soap dispensed through a mounted dispenser, and disposable paper towels or forced-air hand-drying devices.
- g. Provide covered, plastic-lined waste receptacles in toilet rooms.
- h. Clean and disinfect service buildings and fixtures at a frequency that precludes accumulation of debris, development of noxious odors, accumulation of mold and mildew, and accumulation of mineral deposits (that is, scale) on plumbing fixtures.

**7-5. Sewage and liquid waste disposal**

a. Discharge all wastewater and sewage to a public sewage system or private onsite system (for example, septic tank, wastewater holding tank).

b. Provide a vertical drainpipe with a minimum 3-in. connection at all RV parking spaces that are plumbed for direct discharge to a sanitary sewer.

(1) Equip the connection with a freeze-proof trap (that is, trap located below the frost line) and a clean-out fitting.

(2) Ensure the connection between the RV wastewater drainage system and the vertical drain is designed as self-draining and watertight, prevents odors and leakage, and precludes insect and rodent entry.

(3) Ensure vertical drains are capped or sealed when not providing service to an RV.

(4) Surround the sewer connection with a protective concrete curb at least 3 in. deep and 12 in. from the connection.

c. Provide a dump station at RV parks for gray water and black water holding tank discharge.

(1) Locate the dumping station at least 100 ft from any water supply well and at least 50 ft from a campsite, RV parking space, or potable water outlet.

(2) Design and construct dump stations with the following:

(a) A sloped concrete apron surrounding the drain that is at least 4 in. in diameter and positioned at the low point near the center of the pad.

(b) A tight-fitting drain cover (to prevent the escape of odors) equipped with a foot operated attachment or similar device to open the drain cover without directly contacting waste material.

(c) An approved water outlet or hydrant adjacent to the dumping station for flushing the drain pad after use. Post a sign at the sanitary dumping station stating the adjacent water outlet is “UNSAFE FOR DRINKING.”

(d) An approved atmospheric vacuum breaker attached to the water outlet to prevent possible back-siphonage into the water supply system. The vacuum breaker must be installed downstream from the shutoff valve and at the highest point.

(e) An adequate length of flexible hose for flushing the concrete apron and drain. Provide a means for retracting the hose when not in use so it does not contact the concrete pad or rest on the ground surface.

d. Provide a sanitary pump-out facility at marinas that allow overnight mooring of boats equipped with toilet and holding tanks.

e. Non-water carriage waste disposal systems may not be used in lieu of a plumbed sewage system unless approved by Preventive Medicine.

(1) Non-water carriage waste disposal systems are considered temporary and are typically applied for short-term use. Acceptable uses include, but are not limited to—

(a) Substituting for an existing service building that is being renovated or repaired.

(b) Augmenting existing toilet facilities when site occupancy is expected to far exceed normal usage, such as during a carnival, concert, or athletic tournament.

(c) Indefinite support for primitive and remote campsites where construction of a service building is not feasible.

(2) Pit or trench latrines, outhouses, or chemical toilets that discharge directly to the soil are prohibited unless designed and constructed as an approved onsite waste disposal system (for example, privy).

(3) Preventive Medicine should collaborate with installation facilities engineering personnel to establish cleaning and emptying schedules of sufficient frequency to preclude excess accumulation of waste, and the development of noxious odors or unsanitary conditions.

(4) When approved for use, provide non-water carriage waste disposal facilities that are vermin-proofed, equipped with self-closing doors, adequately screened, ventilated, and protected from inclement weather.

**7-6. Area sanitation**

a. Provide adequate solid waste disposal as follows:

(1) Bulk waste collection containers and individual waste receptacles are fly-tight, rodent-proof, and anchored or designed to resist overturning and access by animals.

- (2) Bulk waste containers are clean, serviceable, and have sufficient capacity to match the collection schedule.
- (3) Waste receptacles are emptied and cleaned on a schedule that precludes container overflow, development of noxious odors, and the attraction of insects and animals.
- (4) Individual waste receptacles (sized 50 gallons or smaller)—
  - (a) Are located within 150 ft of campsites and picnic areas.
  - (b) Contain a plastic liner and tight-fitting lid. Plastic liners are not to be reused.
- (5) Onsite burning of waste is prohibited.
- b.* Maintain recreational areas free of trash, debris, and discarded food. Ensure—
  - (1) Ash is removed from barbeques regularly.
  - (2) Grills are cleaned with a coarse-bristle wire brush after use.
  - (3) Trash/garbage is removed from campsites and picnic areas daily. Individual waste receptacles are emptied before nightfall and when two-thirds full, and bags are tied before being placed in dumpsters.
- c.* Ensure pets are controlled at all times and have current vaccinations.
  - (1) The installation commander or recreational area manager establishes local policy for registering pets.
  - (2) Maintain park areas free from pet feces and excess pet food or associated food debris.
- d.* Maintain horse/animal stables and corrals to prevent objectionable odors and insect breeding habitat.
  - (1) Ensure stables/corrals are located in areas that have good drainage to prevent pooling of surface water and drainage away from gardens, waterways, or wetlands.
  - (2) Remove manure and soiled bedding material in stable stalls daily, and ensure proper disposal.
  - (3) Construct animal feed storage containers to prevent access by insects and vermin.

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## CHAPTER 8

### CHILD, YOUTH, AND SCHOOL SERVICES FACILITIES

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#### Section I – GENERAL

##### 8–1. Inspection management

*a.* MWR-operated CYSS programs that require health and sanitation inspection include CDCs, FCC homes, SAC, youth program facilities (also called Middle School and Teen Centers; hereafter referred to as Youth Centers or “youth facilities” in this publication), and Continuous Child Care Centers (see AR 215–1).

*b.* Child care programs include CDCs, FCC homes, and SAC.

(1) CDCs are center-based programs that support children from age 6 weeks to 5 years.

(2) FCC homes provide home-based child care that supports children from age 4 weeks to 12 years.

(3) SAC programs serve kindergarten and elementary school children aged 5 to 12 years and include before- and after-school care and full-day school break camps. In some cases where the installation services a small population, the SAC program may be operated within the CDC.

*c.* Youth programs include Youth Centers and Child and Youth Sports and Fitness. Youth Centers serve middle school to high school youth, and Youth Sports and Fitness programs serve children and youths from age 3 to 18 years.

*d.* Continuous child care facilities are designed to support parents on shift work, families of wounded warriors, or emergency/crisis care. These facilities generally support children and youth aged 12 years and younger but may accommodate an older child.

*e.* See subparagraph 1–9*h*(2) and paragraphs 8–1*f* and *g* for documenting inspections.

*f.* The inspection criteria presented in this chapter are applied as follows:

(1) Section II (paragraphs 8–3 through 8–14) applies to the periodic local inspections of CDCs. The criteria also apply to SAC program areas supporting children who are 5 years of age.

(2) Section III (paragraphs 8–15 through 8–19) applies to the periodic local inspections of FCC homes.

(3) Section IV (paragraph 8–20) applies to Youth Centers and SAC (ages 6 years and older) and may be applied to schools operated at DOD sites when Army Preventive Medicine is designated as having inspection responsibility.

(4) The sanitation and health controls presented in Sections II and IV are applied, as appropriate for each supported age group, at continuous child care facilities.

(5) All CYSS facilities that provide programmed meal service receive monthly kitchen and food service inspections. These include facilities that do not operate a kitchen but receive programmed meals through a catered service or delivered from a central kitchen. The catering source must be approved by Army Veterinary Services according to TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provision 3-201.11. A general sanitation inspection is conducted once each quarter for all other program areas within a SAC or youth facility as stated in table 1-1.

*g.* When multiple programs are operated within the same facility and share a common kitchen, inspections are conducted monthly, and a single “facility” inspection report is generated to document all of the supported programs within that facility. Specific sanitation controls unique to each program area are evaluated as specified in this chapter, except when a common space is used by multiple programs. In that case, the most restrictive controls for the specified activity are enforced. When a multiuse facility inspection is conducted, the specific program area in which a violation has been found must be identified in the inspection report.

*h.* Programs operated in privatized Government housing are generally inspected by installation Preventive Medicine. See paragraph 1–11*a* for guidance regarding activities occurring in privatized facilities. Programs operated in schools located on the installation or within an off-post Government housing area are typically not

inspected by Preventive Medicine unless specified in a written agreement. Collaboration with the county/city/State health department is required for Preventive Medicine participation in joint inspections or to obtain copies of inspection findings. Provisions to allow for military public health oversight should be included in contracts or agreements to support DOD child development services programs at off-post facilities, to include private homes.

## 8–2. Facility design and review

Many public health factors must be applied to the design and construction of child and youth program facilities to ensure a healthy environment for all occupants. Engineering and environmental controls such as ventilation, lighting, and water temperature are verified and documented through testing conducted by the installation IH representative or appropriate agency specified in the construction contract. Preventive Medicine should obtain verification that prescribed parameters have been met and should conduct periodic evaluations to ensure sustained compliance.

*a.* Facilities are designed according to the standards presented in the following references and appendix D of this TB MED:

- (1) USACE Standard Design Criteria, Child Development Centers.
- (2) USACE Standard Design Criteria, School Age Centers.
- (3) USACE Standard Design Criteria, Youth Centers.
- (4) UFC 4-740-06, Youth Centers
- (5) UFC 4-740-15, Continuous Child Care Facilities.

*b.* Design review for newly constructed or renovated facilities includes evaluation of the following controls:

(1) Noise. The design and construction of a facility must ensure appropriate attenuation of environmental noise (generated from sources outside of the facility and equipment operating within the facility) and internal program activities to meet the acceptable building interior sound levels as specified in DA Pam 40–11. The following guidance is provided to preclude hearing loss associated with continued exposure to high-decibel noise.

(a) Use sound-absorbing materials, as necessary, in the floors, walls, and ceilings of child activity rooms. Peak noise levels should not exceed 85 decibels, A-weighted (dB(A)) in child activity areas and sustained noise levels must not exceed 45 dB(A) in caregiver rooms during naptime.

(b) Separate the noisy areas from the quiet areas in the child rooms/modules.

(c) Minimize vibration transmission from the mechanical room to further reduce (or limit) noise.

(2) Heating, ventilation, and air conditioning (HVAC). Additional information regarding ventilation and associated health impacts is provided in chapter 5, paragraphs 5–3 and 5–8. Additional controls include—

(a) Providing mechanical ventilation or operable windows in all child activity rooms. Ensure window screens are designed with 16-mesh to 1-in. (16-mesh to 25.4 millimeters) to preclude insect entry.

(b) Adjusting the HVAC system to ensure temperatures are responsive to the needs of children and comfortable at both child height and for children who spend large amounts of time on the floor.

(c) Controlling airborne bacteria and disease according to the guidance from ASHRAE by—

i. Maintaining temperatures in child activity rooms/modules at no lower than 68°F (20°C) and no higher than 78°F (25.5°C). Temperatures in CDCs are assessed at the level of 1 foot above the floor.

ii. Maintaining relative humidity between 35 and 50 percent during the heating season when the facility is occupied.

iii. Maintaining a minimum dilution ventilation rate of 5 cubic feet of outdoor air per minute, per person, and 0.06 cubic feet per minute (cfm) per square foot of floor space.

(d) Providing protective devices for heat-generating appliances (for example, hot water pipes and radiators) that are operating at more than 100°F (38°C) in child-accessible areas.

(e) Restricting the use of urea formaldehyde insulation. An exception may apply if the area is tested and no urea formaldehyde off-gassing is detected.

(3) Lighting. Conduct an illumination survey to ensure safe, effective, and efficient lighting systems are provided according to *Caring for our Children: National Health and Safety Performance Standards; Guidelines for Early Care and Education Programs* (American Academy of Pediatrics, 2011) and the current edition of *The Lighting Handbook* (IES HB-10-11), published by the Illumination Engineering Society.

(a) Provide a combination of natural and artificial light that is adjustable by the staff to accommodate changing outside light levels as well as activities within the building.

i. Artificial lighting includes fluorescent and incandescent bulbs.

ii. Narrow-spectrum fluorescent bulbs may not be used due to their associated link for causing hyperactivity in children.

iii. Provide high-shielding fluorescent lamps where fluorescent fixtures are used.

(b) Maintain indoor illumination as follows:

i. 50 foot-candles (540 lux) of task lighting in all locations requiring perceptual activities (such as reading, drawing, and color and shape discrimination tasks) and staff administrative work.

ii. 30 foot-candles (323 lux) for background lighting and all other activities not requiring close perceptual activities.

iii. 20 foot-candles (215 lux) measured at a distance of 30 in. (75 centimeters) above the floor in toilet rooms and in areas used for hand washing.

iv. Refer to TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP for required lighting in kitchen and food storage areas.

(c) Provide devices (for example, shades, roof overhangs) to control the natural light brightness ratios and lateral differences in illumination.

(d) Orient lighting fixtures (or room activity configurations) so that lighting illuminates from behind most activities and children.

(4) Plumbing and potable water. Plumbing controls are intended to prevent the spread of disease organisms to food and other surfaces, the occurrence of waterborne diseases, cross-contamination of the drinking water supply, and flooding damage from washing machines or clogged toilets and sinks. Ensure—

(a) Potable water is supplied to landscape irrigation systems for all new construction and major renovation projects.

(b) The drinking water supply is from an approved potable water source IAW TB MED 576.\*

(c) Hand wash sinks, food preparation sinks, and the three-compartment kitchen sink are supplied with hot and cold running water.\*

i. Maintain a minimum hot water temperature of 140°F (60°C), measured from the boiler room or hot water heater, to reduce potential growth of *Legionella* bacteria.\*

ii. Maintain a minimum hot water temperature of 120°F (49°C) at point of use.

iii. Install thermostatic mixing valves at child-accessible sinks to further reduce the temperature at the outlet to a lower level in order to minimize scalding hazard. The maximum hot water temperature at child sinks should not exceed 110°F (43°C).\*

(d) The temperature of hot water used to support kitchen operations meets the requirements specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP.

c. An Industrial Hygienist or other Preventive Medicine representative with appropriate training to conduct a design review of child care facilities should participate in the design review process during construction of new facilities or major renovations. Preventive Medicine contributes to the design review process before, during, and after construction to ensure—

(1) Compliance with codes and standards produced by Government agencies (for example, the Occupational Safety and Health Administration) and nationally recognized consensus organizations (for example, ASHRAE and ANSI) as well as guidance provided in UFCs as specified in DA Pam 40-503.

(2) The facility configuration and design features are suitable for maintaining sanitary control and protecting the health and safety of the building occupants.

(3) Materials used for construction are easily cleanable, are resistant to mold and mildew, where appropriate, and do not otherwise present a health risk to building occupants.

d. Asbestos and lead. Ensure child care facilities containing asbestos or lead are included in the installation Asbestos and Lead Management Program.

## Section II – CHILD DEVELOPMENT CENTERS

### 8–3. Food safety

The following guidelines are provided in addition to the criteria specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP for ensuring safe food and maintaining sanitary food operations.

a. Person in charge (PIC). “Food employees” within the child care facility are those individuals whose scope of duties includes inspecting foods during delivery from the vendor/supplier and then storing the food, preparing or cooking food, conducting warewashing, or any combination of these activities. The PIC is a food employee (a cook, for example) who is charged with direct supervision of other food employees and the management of all kitchen activities.

(1) The PIC is required to remain on the premises and directly monitor kitchen activities during periods of food receipt, food preparation/cooking, warewashing, and kitchen cleanup.\*

(2) The PIC ensures—

(a) Food is not removed from temperature control (hot or cold holding) more than 30 minutes prior to its transport to a child activity room.

(b) Food is not delivered to the child activity room more than 30 minutes prior to the scheduled meal or snack service.

(3) Child care staff whose food duties are limited to overseeing child meal service or preparing (mixing) infant formula and cereal are not food employees.

(4) Child care staff ensure—

(a) That potentially hazardous foods requiring time or temperature control for safety according to TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP are served within 30 minutes of receipt from the kitchen or caterer.

(b) Prepared meals that are not maintained under temperature control are rejected (or sent back to the kitchen) if delivered to the activity room more than 30 minutes prior to a scheduled meal or snack service. Instances of this occurrence should be reported to the Center Director or manager to ensure internal procedures are appropriately modified to ensure food safety.

b. Training.

(1) The designated PIC is required to maintain a valid (unexpired) Food Protection Manager Certification as specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provision 2–102.20. Exception to the certification requirement applies when the facility only serves food that does not require time or temperature control for safety as specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP.\*

(2) At least one food employee with Food Protection Manager Certification should be designated as the alternate PIC for each facility.

(3) Food employees are required to complete initial and annual refresher training on basic food safety principles and illness reporting as specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provisions 2–501.11 and 2–201.11(A). Annual refresher training does not apply to the PIC possessing a valid Food Protection Manager Certification. His or her food safety skills and knowledge are reinforced each day by monitoring and directing safe food handling practices.

(4) Facility staff members hold a shared responsibility for ensuring food safety during meal service and snack time. Staff members who participate in meal service should complete annual food safety refresher training. Such training may be provided by the PIC or other qualified trainer as specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provision 2–503.20.

(5) Child care staff and kitchen staff must be aware of children with known food allergies. A list identifying each child and his or her associated food allergy should be posted in a readily accessible location in the kitchen and the appropriate activity room where the child consumes his or her meals and snacks.

c. Food sources.

(1) Ensure foods purchased for meal and snack service are from approved sources.\*

(2) Ensure appropriate controls or restrictions are applied for home-prepared foods.

(a) According to AR 608–10, foods from home are allowed when—

- i. The child has a medically documented dietary restriction or food allergy.
  - ii. The child has a religious exception.
  - iii. The food is breast milk, commercially-prepared baby food, or baby formula.
  - iv. The food is for a special occasion (such as birthdays and holidays) and does not require refrigeration (for example, bakery goods).
- (b) If an exception to policy for home-prepared foods is approved by the Child Development Services Coordinator or Center Director,—
- i. An SOP should be established to address Center staff and parent responsibilities regarding preparation, packaging, storage, and service of home-prepared foods. The parent/guardian should sign a document acknowledging personal liability for food hazards associated with home-prepared foods.
  - ii. Hot foods that are packaged hot by the parent/guardian using insulated containers such as a thermos are not placed in the refrigerator at the child care facility when stored prior to meal service. Hot foods packaged (when hot) in insulated containers are expected to remain hot (based on the insulating properties of the container) until served and will not be reheated by Center staff.
  - iii. Foods that require temperature control and are not packaged using thermal-control packaging (or ice packs) are stored in the refrigerator and held at 41°F (5°C) or below. Chilled, ready-to-eat foods requiring reheating before service are heated to any temperature appropriate for immediate service to the child, IAW TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provision 3–403.10.
  - iv. Home-prepared foods that do not require storage in a food refrigerator must be stored in a location protected from contamination.
  - v. Preventive Medicine inspectors do not monitor the internal temperature of home-prepared foods that are held in insulated packaging (hot or cold).
- (3) Ensure food from home (to include breast milk) that is intended for a specific child is—\*
- (a) Appropriately portioned for use by the child during a single visit (for example, 1 day or a period of uninterrupted stay).
  - (b) Labeled to indicate the child’s full name and the date corresponding to the scheduled visit.
  - (c) Refrigerated, if applicable, and protected from contamination.
  - (d) Not served to other children.
  - (e) Not retained at the facility for future use.
- (4) “Home grown” fruits and vegetables that are planted and harvested by the child care facility as part of a learning experience are permitted and may be consumed by the children.
- (a) Ensure learning/educational garden products are washed in a food preparation sink prior to serving, as specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provision 3–302.15.
  - (b) Apply time and temperature controls as specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provision 3–501.19, for cooked plant foods and raw fruits and vegetables that have been cut.\*
- d. Catered or delivered meals. Centers that do not operate a kitchen but receive their meals fully prepared and ready to serve from a catered service or central kitchen must have a designated PIC remain on premises at the time the food is delivered to and received by the Center and as specified in subparagraph 8–3a(2).\*
- (1) The PIC must possess a valid Food Protection Manager Certification as specified in subparagraph 8–3b(1).
  - (2) The PIC may be a permanent member of the Center staff where the food is being received, or may be the qualified PIC from the catering service or central kitchen.
- e. Kitchen and food storage area maintenance.
- (1) Kitchen staff clean, sanitize, and maintain food-contact surfaces IAW TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP.
  - (2) Food carts are cleaned and sanitized prior to each use.
  - (3) The nonfood-contact surfaces of equipment in the kitchen and food storage areas are cleaned and maintained by trained food workers rather than general housekeeping or custodial personnel. Special cleaning services may be contracted for local exhaust hoods and other “deep cleaning” activities.
- f. Restrictions for kitchen access and food storage areas.

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(1) Facility staff members ensure access to the kitchen and food storage areas is restricted to unauthorized persons as specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provision 6-502.11.

(2) Food and cooking activities involving children are performed in a child activity room or a separate kitchen specifically designated for child/youth educational cooking activities.

(3) Children's projects requiring refrigeration may not be stored in the kitchen or in food refrigerators located in child activity rooms. A separate refrigeration unit is required to store child crafts and associated supplies. These items may be stored in refrigeration units used to store pet food.

### 8-4. Facility general maintenance

Proper maintenance and repair are essential to reduce the risk of injury to children and adults and to eliminate conditions that allow pest access and harborage.

a. Maintain physical facilities and fixtures to ensure—

(1) Missing or torn window screens are repaired or replaced.

(2) Damaged or missing door sweeps, and gaps of 1/8-inch or larger around exterior doors and windows or around pipes or other conduits that traverse through a wall are sealed, repaired, or replaced.

(3) Cracks and openings in walls, floors, and ceilings that result from deterioration, damage, or settling of the building are sealed.

(4) Leaking plumbing fixtures are repaired.

(5) Floors are maintained in good condition, free from protrusions, holes, splinters, and damaged or missing tiles or vinyl.

b. Maintain playgrounds and outdoor areas immediately adjacent to the child care facility to ensure—

(1) Upkeep of ground surfaces to prevent safety hazards and water pooling for more than 24 hours due to deterioration or erosion.

(2) Plantings around the facility and within the outdoor play and learning areas are free from thorns, sharp leaves or branches, and toxic leaves or berries.

(3) Grassy areas within 6 ft of the facility perimeter are mowed, and landscaping plants, shrubs, and encroaching vegetation from adjacent areas are trimmed or removed at a frequency to prevent significant overgrowth (for example, greater than 6 in.) that allows pest harborage or the concealment of harmful animals.

(4) Loose material such as mulch, pea gravel, or sand under playground equipment is replenished or replaced as it becomes diminished.

(5) Sandboxes are maintained with appropriate barriers and covers, and sand is periodically replaced to reduce the risk of feral animal fecal contamination.

(6) Playground equipment is maintained in safe working condition.

(7) Snow and ice are removed from the facility entrance and walkways.

(8) Waste removal and sanitation of bulk waste receptacles (for example, dumpsters) and adjacent areas are conducted at a frequency that precludes objectionable odors and attracting pests.

(9) Pest control operations are conducted IAW the Installation Pest Management Plan.

(a) Consultation with Preventive Medicine is required if pests are found in the child care facility.

(b) Chemical pest control treatments may not be applied in child play areas or adjacent areas when children are in the facility.

(c) AR 608-10 prohibits the use of herbicides in child play areas.

(d) Children are not permitted to re-enter a play area treated with pesticides before the specified time indicated on the pesticide label, or a minimum of 48 hours post-application if not specified on the label.

c. Preventive Medicine must ensure that the active pest surveillance for mosquitos and ticks, as required by DA Pam 40-11, includes locations near CYSS facilities.

### 8-5. Facility sanitation

General facility sanitation is maintained to prevent the transmission of disease through environmental contamination and to prevent insect and rodent infestations. Achieving appropriate facility sanitation is a shared responsibility between program staff and contracted custodial/housekeeping personnel. This paragraph summarizes the general facility sanitation criteria. Paragraphs 8-14d through f of this bulletin outline the daily, weekly, quarterly, and

annual requirements conducted by custodial/housekeeping personnel. Program staff members are responsible for applying sanitary controls throughout the day or at end-of-day, as discussed in paragraphs 8–3 and 8–5 through 8–10.

a. Maintain child care and activity rooms, staff and visitor restrooms, child toilet rooms, common corridors/hallways, outdoor play areas, and the outside area around the building free from litter and clutter such as food wrappers, unused equipment, cardboard boxes, and pallets.

b. Clean and disinfect—\*

(1) Toilet rooms (floors and fixtures) daily.  
 (2) Diapering stations (pads) after each use.  
 (3) High-touch surfaces (door handles, light switches, computer keyboards, electronic game controllers) daily.  
 (4) Drinking fountains daily to prevent mineral scale and mildew buildup in the sink or on the dispensing nozzle.

(5) Hand wash sinks daily.  
 (6) Infant cribs before use by a different child and after an infant who uses the crib is sent home due to illness (fever, vomiting, or diarrhea).

(7) Emergency cribs following a fire drill or emergency evacuation.

c. Clean and sanitize snack/meal tables, transport carts, and highchair trays before and after each meal.\* **Note:** *Infant bottle warmers are considered nonfood-contact surfaces and must be cleaned and sanitized daily only when they are used, and IAW the manufacturer's instructions.*

d. Ensure floors, walls, and ceilings throughout the facility are free from water damage and the evidence of mold or mildew, to include musty odors.

e. Ensure floor drains in the utility/janitorial room, toilet rooms, kitchen, and laundry room are clean and draining properly.

f. Ensure toilets are caulked with a USDA-approved product where the toilet base meets the floor; caulking is replaced when it becomes damaged (for example, is missing/torn or when its seal with the toilet or floor is broken).

g. Ensure horizontal surfaces in the child care and activity rooms, toilet rooms, and laundry room are free from excess buildup of dust and debris. Refer to paragraph 8–14 for additional custodial and housekeeping requirements.

h. Place an impervious barrier material between the floor or carpet and the infant, as specified in paragraph 8–8e, in areas that are used for infant crawling and “tummy time” and also subject to heavy foot traffic from use as a shared play/activity space. An SOP outlining staff (and custodial, where applicable) procedures as specified in subparagraph 8–8f(2) is required for facilities choosing not to use a barrier.

i. Provide plastic liners for all waste receptacles.

(1) Empty and clean all waste receptacles as often as necessary to prevent overflow or development of objectionable odors.

(2) Empty, clean, and disinfect food waste receptacles daily.

(3) Empty diaper waste receptacles at least twice daily (morning and afternoon), or more frequently, to prevent objectionable odors. Clean and disinfect diaper waste receptacles daily, at the end of the day.

(3) Do not retain plastic liners for continued use after the waste receptacle is emptied.

(4) When not in use, cover the receptacles containing food waste or soiled diapers.

j. Supply child and staff hand wash sinks with liquid or powdered soap and paper towels. Hand-sanitizing gels may not be used as a substitute for proper handwashing.\*

k. Ensure appropriate antimicrobial agents are used for disinfecting or sanitizing surfaces and are used according to the product label.\*

(1) Antimicrobial agents are EPA-registered or approved by the medical authority or Preventive Medicine (see appendix B).

(2) Disinfecting agents are applied at diaper-changing stations, toilet rooms, and high-touch surfaces other than small toys.

(a) Apply the disinfecting product only on surfaces specified on the product label, and ensure the appropriate wet contact time is achieved. Ensure a clear water rinse is applied when specified on the label.

(b) Chlorine bleach disinfecting solutions prepared on premises are applied for at least a 1-minute wet contact time and then rinsed (or wiped) with clear water to remove the remaining chemical residual.

(c) Alcohol-based disinfecting wipes that also contain cleaning properties (for example, a quaternary ammonium compound) are appropriate for cleaning and disinfecting high-touch surfaces, activity and sleeping mattresses/pads, diaper changing pads, and wooden toys. When such wipes are used in a CDC or SAC areas where preschool-age children are present, the product label should indicate the disinfecting wipe is safe for use in child care settings.

(3) Sanitizing agents are applied to food contact surfaces, meal/snack tables, highchair tables, mouthed toys, and pacifiers.

(a) Use sanitizers identified as safe for use with food IAW TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provision 4–501.114, and Title 40, Code of Federal Regulations (CFR) Part 180.940 (40 CFR 180.940), paragraph (a).

(b) Chlorine bleach sanitizing solutions prepared on premises are applied for at least a 1-minute wet contact time and then allowed to air dry. A clear water rinse is not required unless the bleach concentration is 200 ppm or higher.

(c) Antimicrobial disposable wipes containing quaternary ammonium compounds may be used on food-contact surfaces if the product is EPA-registered and the product label indicates it is safe for use in food service. A wide variety of quaternary ammonium compounds are approved for use in food manufacturing; not all products are appropriate for application in public eating establishments (or kitchens). Refer to 21 CFR 178.1010 for approved food sanitizing compounds and their associated applications. In general, the required sanitizing concentration of a quaternary ammonium compound used in a food service establishment is 150–200 ppm when measured on the wiping cloth or after application to the treated surface. See paragraph B–6 for information regarding “quat binding.”

(4) Chlorine bleach solutions that are prepared on premises are—

(a) Made fresh each day, or more frequently when the product concentration falls below the minimum required FAC level specified in subparagraph (4)(b), below.

(b) Prepared with a minimum concentration of 500-ppm FAC when used for disinfection, or a concentration of 100-ppm FAC when used to conduct sanitizing tasks. Refer to table B–1 for chlorine bleach mixing formulas.

(c) Tested each time a fresh batch is prepared. Use chlorine test paper or a testing kit designed to measure the FAC residual. Solution testing is required to ensure the product concentration has not been impacted due to decomposition of the active ingredient, sodium hypochlorite. Refer to paragraph B–3b for additional information regarding decomposition.

(d) Held in labeled containers indicating “chlorine sanitizer” or “chlorine disinfectant,” as appropriate, the date prepared, and the concentration at the time of preparation.

*l.* Clean soiled surfaces to remove visible debris and residues prior to sanitizing or disinfection.

*m.* Apply appropriate integrated pest management controls to prevent pest infestations such as rodents, flies, cockroaches, or other insects.

*n.* Maintain plumbing fixtures (for example, sinks, spigots, and drains) free from potential cross-connections.\*

(a) Disconnect hoses from utility sinks and outdoor spigots when not in active use.

(b) Ensure condensation lines or drain lines from drinking fountains, ice machines, and other connections to the drinking water system do not extend into floor drains without an appropriate backflow or backsiphonage prevention device.

*o.* Store cleaning equipment and supplies in designated locations away from child care rooms.

(1) Empty and clean mop buckets and cleaning implements (for example, brooms, mops, dusters, and wiping cloths/sponges) after each use and before storage.

(2) Store wet mops with mop heads hanging freely or away from the mop handle.

(3) Replace mop heads when they become heavily soiled or deteriorated.

## 8-6. Health and hygiene controls

*a.* Chapter 8 does not currently address the specific requirements associated with the “medical” components of child and youth program inspections such as the health-, wellness-, and nutrition-related topics identified below. These areas are typically evaluated by an Army Public Health Nurse. The medical criteria outlined in DODI 6060.02 and AR 608-10 may be detailed in this chapter in the future and include—

- (1) Child and staff immunizations.
- (2) Child and staff periodic health assessments.
- (3) Procedures for informal screening for illness.
- (4) Menu standards and nutrition for meals and snacks.
- (5) Procedures for administering medications.
- (6) Handwashing procedures.
- (7) Diapering procedures.
- (8) First aid supplies maintained at the facility.
- (9) Other items related to health and wellness identified in DODI 6060.02 and AR 608-10.

*b.* Hygienic practices and associated controls present a concern for both the Public Health nurse and the Environmental Health representative. At a minimum, the following health and hygiene controls are evaluated by Environmental Health personnel when conducting periodic inspections:

- (1) Caregivers and children wash their hands using soap and water—
  - (a) Before and after water play and preparing, serving, or eating food.
  - (b) After a diaper change, using the toilet, playing outdoors, handling pets, performing custodial tasks, and other activities during which hands may become soiled or contaminated.
- (2) Caregivers wash their hands before and after administering medications.
- (3) A head-to-toe sleeping pattern is used during naptime, and there is at least a 3-ft space between children when measured face-to-face.
- (4) Children’s toothbrushes are allowed to air dry and are protected from contamination when stored.
- (5) Teething toys are—
  - (a) Cleaned and sanitized as specified in subparagraph 8-7a(1).\*
  - (b) Cleaned and sanitized prior to their placement in the refrigerator.\* Teething toys may be placed in a refrigerator where food is stored, provided the criterion in subparagraph (5)(c), below, is maintained.
  - (c) Placed in a durable container with lid and a label indicating “clean teething toys” when stored in bulk. The container used to store the teething toys is cleaned and sanitized after the last toy is removed (before newly cleaned and sanitized toys are returned to the container).
- (6) Medications requiring refrigeration may be stored in a refrigerator where food is stored, provided the criteria specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provision 7-207.12, are applied as follows:
  - (a) The medicine is contained in an individual sealed container such as a closed bottle, tube, plastic bag with seal, or other sealed packaging. Individual containers of medicine are further placed in a secondary containment container that is rigid, equipped with a lid or other appropriate seal, and leak-proof.
  - (b) The medicine is clearly labeled with the child’s name, the medicine’s dosage and frequency, and the date or dates on which to administer the medicine. The secondary containment container is clearly labeled as “MEDICINE.”
  - (c) The medicine is inaccessible to children.
  - (d) The medicine is not retained at the center beyond the last date of dosage indicated on the package. Unused medication is returned to the child’s parent/guardian.

## 8-7. Toys

The following controls apply to CDCs and are implemented in SAC program areas when preschool-age children (age 5) are present.

- a.* Frequency for cleaning and sanitizing hard, non-porous toys.\*

(1) Toys mouthed by children are cleaned and sanitized before use by different children. Separate the soiled toys from clean toys, and keep the soiled toys out of children's reach until they are cleaned and sanitized properly.

(2) Toys shared or handled by children under the age of 3 years are cleaned and sanitized daily, preferably at the end of the day.

(3) Toys shared or handled by children aged 3 to 5 years are cleaned and sanitized at least weekly, regardless if visibly soiled.

(4) Toys soiled by body fluids, including nasal discharges, are immediately removed from use and are kept out of children's reach until the toys are cleaned and sanitized.

(5) Large toys (activity centers, for example) are cleaned and sanitized weekly; more frequently when soiled.

(6) High-touch components of electronic toys, such as computer keyboards or game controllers, are cleaned and disinfected at the end of each day of use. Refer to subparagraph 8–14d(5)(e) for information about required daily cleaning and disinfection of other high-touch surfaces.

*b. Procedures for cleaning and sanitizing hard, non-porous toys.*

(1) Use a 3-basin system for cleaning and sanitizing small toys.

(a) Fill the wash basin with hot soapy water, and clean the toys using a wiping cloth that is laundered fresh each day and not used for other cleaning tasks during the day.

(b) Provide clear hot water in the rinse basin, and replenish the water when it begins to accumulate soap suds.

(c) Fill the sanitizing basin with warm water; prepare a bleach sanitizing solution as specified in subparagraph 8–5k(4), or prepare a quaternary ammonia sanitizing solution according to the manufacturer's instructions on the label.\*

(2) Completely immerse small toys in the sanitizing solution for a 1-minute contact time. Place sanitized toys on a drying rack, drain board, or clean towel, and allow them to air dry.

(3) The kitchen dishwashing machine may be used for small toys that are dishwasher-safe, provided—

(a) The toys are washed separately from food equipment and utensils.

(b) Very small toys are placed in a mesh bag and secured in the dishwasher.

(c) A complete, uninterrupted dishwasher cycle is used (for example, hot soapy wash, hot rinse, and heat sanitize). Toys that are not compatible with the heat drying cycle of the machine may be air dried in the machine with the door open, or the mesh bag containing the toys may be removed and hung in a clean location until the toys are completely dry.

(4) To clean and sanitize large toys and activity centers, use an appropriate antimicrobial agent as specified in paragraph 8–5k.\*

(a) When using a wiping cloth, wipe the surface clean to remove any residues/soil from the environment or the child's contact. Rinse the wiping cloth to remove soap and dirt residues before placing it in the sanitizing solution, or use a separate cloth for sanitizing. Wipe the entire surface of the toy/activity center. The sanitizer may also be applied using a spray applicator. Ensure the entire surface is wetted with the sanitizer, and allow the surface to air dry.

(b) When using disposable antimicrobial cleaning wipes, ensure a sufficient number of wipes are used to allow the treated surface to remain wet for the minimum contact time specified on the product label.

(5) Toys may not be washed inside the basin of a hand wash sink. Water from the hand wash sink may be extracted and used in a separate 3-basin system as specified in subparagraph 8–7b(1).\*

(6) Sponges may not be used for washing toys.

(7) Wiping cloths used for cleaning toys may not be used for other cleaning tasks during the day, such as cleaning food tables or disinfecting diapering stations. Launder the wiping cloths daily.

(8) Use an alcohol-based antimicrobial wipe to clean and disinfect high-touch electronic toys or electronic components. Antimicrobial disposable wipes may also be used to disinfect the handles and hand grips associated with gaming tables and fitness equipment.

*c. Soft toys.* Soft toys include stuffed toys, costumes, and other play items constructed of fabric or porous materials such as wood, cardboard, or similar types of fiberboard.

(1) Unless it is equipped with a laundry room, the child care facility should not supply and maintain fabric toys (stuffed animals and dolls, for example). Ideally, fabric toys are provided by the child's parent/guardian and taken home with the child each day. When supplied by the center for common use,—

- (a) Provide only those fabric toys that are identified by the manufacturer as machine-washable.
- (b) Launder the toy before use by different children if the toy is mouthed or becomes soiled.\*
- (c) Immediately remove the toy from use when it is soiled by urine, vomit, or fecal matter. Until they are laundered, store the soiled, center-owned toys in a labeled container in an area that is inaccessible to children. Child-owned fabric toys that become soiled should be stored in a plastic bag away from the child and returned to the parent or guardian at the end of the day.\*

(2) Wooden toys that meet the following criteria may be used in child care programs.\*

- (a) The wood is sealed by the manufacturer with paint or other impermeable coating that is lead-free and nonhazardous to children.
- (b) Wooden toys that are mouthed by children are cleaned and sanitized as specified in paragraph 8–7a and subparagraph 8–7b(4) using a wiping method. Soaking wooden toys in a sanitizing solution is not recommended as doing so may result in premature degradation of the wood's sealant properties.
- (c) The toy is discontinued for use and discarded when the surface coating is worn, gouged, splintered, or otherwise damaged to the extent that the surface is no longer impermeable. Paint or other coatings may not be applied to reseal worn or damaged wooden toys.

(3) Cardboard and other fiberboard toys such as puzzles are—

- (a) Treated similarly to books with regard to cleaning. If lightly soiled, the laminated and other coated surfaces that prevent moisture absorption may be cleaned with a wiping cloth.
- (b) Discarded if the fiberboard becomes swollen due to moisture absorption (for example, from water, food spills, or mouthing by children).
- (c) Immediately removed from use and discarded when soiled by urine, feces, or vomit.

d. Procedures for cleaning and sanitizing soft toys.

- (1) Apply baking soda or cornstarch, as appropriate, and use a soft bristle brush to remove heavy soil, food residues, and other debris.
- (2) Pretreat any stains with fabric spray.
- (3) Remove any loose objects, such as clothing and accessories, from the toy. Clean and sanitize nonporous accessories as specified in paragraph 8–7b.
- (4) Place the soft toy and fabric accessories into a clean pillowcase or mesh bag, and close the end securely.
- (5) Set the washing machine for a pre-wash cycle, and wash the items using detergent and hot water as specified in paragraph 8–9.
- (6) Program the washing machine to perform a second or extended rinse cycle. Manually reset the machine for a rinse-only cycle (or wash without detergent) if the machine does not have an extended or second rinse setting. The second rinse ensures detergent residues are adequately removed from the bundled toys.
- (7) Dry the soft toys in a mechanical dryer set at a hot (or “high”) temperature setting. Ensure toys are thoroughly dried before storing them or returning them to children's use.

## 8–8. Mattresses, sleep mats, and other activity pads

- a. Limit the use of a bed, crib, or sleeping pad to one child at a time.
- b. Provide impervious mattresses and sleeping pads for cribs, cots, and beds. Fabric mattresses should not be used unless approved by Preventive Medicine. If fabric mattresses are approved for use, cover each one with a waterproof mattress cover.
- c. Replace mattresses when the impervious material is torn or otherwise damaged. Applying tape to repair torn plastic pads or mattress covers is not permitted as it prevents proper cleaning and disinfection of the pad/cover.\*
- d. When in use by a child, cover bed/crib mattresses with linens. *Note: Use of a linen barrier (sheet) is optional when infants are wrapped in swaddling clothes.* Infant activity pads (made from impervious material) used for “tummy time,” as well as sleeping mats that are placed directly on a cot or the floor, do not require covering with linens.

*e.* Use of an impervious pad or fabric covering between a bare or carpeted floor and the child during active “tummy time” or crawling activities is recommended to facilitate cleaning body fluids (discharges from the nose or mouth, vomit, urine, feces, or blood) during these activities. Change, clean, and sanitize or disinfect pads, fabric coverings, or exposed carpets as specified in subparagraph 8–8f(2).

(a) Areas used for tummy time or infant crawling should not be subjected to heavy foot traffic.

(b) Do not place pads or fabric coverings on the floor until the infant is ready to use them.

*f.* Clean and disinfect—\*

(1) The impervious surface of mattresses, mattress covers, and sleeping pads—

(a) Before use by different children;

(b) Whenever the surface becomes soiled from urine, feces, or vomit; and

(c) At least weekly.

(2) The impervious pads used for tummy time or infant crawling before use by different children when the pads are soiled by body fluids (discharges from the nose or mouth, vomit, urine, feces, or blood) and at least daily (when used).

(a) Fabric barrier mats, if used, are laundered as specified in paragraph 8–9a, before use by different children if mats are soiled by body fluids, and at least daily when used by the same child.

(b) Carpeted areas that are not covered with a barrier material and are soiled by body fluids during tummy time or crawling activities are steam-cleaned or spot-treated before the area may be used by different children. Spot treatments are performed using cleaning and sanitizing agents that are designated as appropriate for use on carpets. Treated areas may not be used until completely dry.

(3) Individual floor mats at the end of each day when used for fitness or other activities.

(4) Impervious cushioned floor coverings designed to remain in active play areas, when such coverings are visibly soiled or become contaminated from urine, feces, vomit, or blood.

*g.* Ensure cleaned and disinfected surfaces are dry before reuse or the placement of linens. Air drying is preferred; using a clean towel or paper towel is also permitted.

*h.* If used, launder the fabric coverings placed as a barrier between a carpeted or bare floor and a child before their use by different children and at least daily.\*

## 8–9. Bedding and linens

*a.* Launder bed covers, linens, and pillows whenever soiled with urine, feces, sputum, nasal discharges, or vomit; before use by different children; and at least weekly. Swaddling clothes are laundered daily after use by a single child.

(1) Use a hot water wash and rinse cycle. A minimum temperature of 140°F (60°C) is effective for destroying microorganisms and does not require the use of a laundry disinfectant such as bleach.

(2) Dry the laundered items in a mechanical dryer set at the highest heat setting.

(3) Thoroughly dry laundered items before storing them or returning them to use. Residual moisture remaining in fabrics for prolonged periods promotes the growth of mold and mildew, as evidenced by a musty odor that is detected when the fabric is subsequently wetted.

*b.* Except as specified below, remove linens from cots and sleeping pads that are stacked when not in use.

(1) Retention of bedding on cots is permitted if the cot has a frame that is designed to allow stacking and provides a sufficient gap between stacked cots to prevent contact between the bedding and the cot placed above it.

(2) Linens removed from stacked cots or sleep mats are stored separately in labeled containers or cubicles for each child.

## 8–10. Water play

*a.* Activity tables. Water play tables and associated accessories are managed similarly to nonporous toys. Drain, clean, and sanitize water play tables, to include other water play features containing a reservoir (such as water mills), and accessories after designated play time (each day) as specified in paragraph 8–7b.\*

*b.* Sprinklers and spray pads. The use of sprinklers and similar water spray devices is authorized for child play.

(1) Move sprinklers, plastic pads (for example, “slip-and-slide”), and other bulk, temporary outdoor water play features on a regular basis, usually every two days, to prevent destroying the grass and eroding the soil.

(2) Ensure there is sufficient drainage around the water play feature to prevent water from pooling for prolonged periods. If water does not drain within a few hours after application of water has stopped, the drainage is deemed inadequate and can promote pests such as birds, rodents, and insects.

(3) Clean and disinfect slip-and-slide pads each day to prevent the growth of mold and mildew.

(4) Ensure hoses and plastic pads do not present a trip hazard.

(5) Use of in-ground landscaping sprinkler heads for water play is not authorized since sprinkler locations cannot be altered to prevent erosion, and the fixed sprinkler heads may present a safety hazard due to their proximity to landscaping features such as pavers, borders, or shrubbery.

c. Portable pools. The use of inflatable or plastic child wading pools is not authorized at child care facilities.\*

d. Hygienic controls. Harmful effects from exposure to unsanitary water occur when children swallow the water during play or have mucous membranes or unhealed skin abrasions that are exposed to the water. The spread of disease-causing microorganisms during water play is controlled by—

(1) Ensuring diapered children are promptly removed from water play when their diaper becomes soiled with urine or feces.

(2) Restricting children presenting with illness, especially diarrhea, from water play regardless of their wearing swimmer-style diapers.\*

(3) Immediately removing children from water play if they develop a skin rash or present with other illness symptoms. Notify the child's parent or guardian for medical follow-up, as appropriate.\*

(4) Providing adequate guidance and supervision to ensure children do not splash water into their mouth or eyes and do not attempt to drink the water.

(5) Ensuring children, staff, and volunteers wash their hands before and after playing with a water table.

(a) More extensive hygienic controls, such as washing the arms, face, legs, and feet, as appropriate, may be required if the child is visibly soiled following whole-body water activities such as use of a sprinkler or sliding pad.

(b) Bathers follow the hygiene guidelines for showering before and after using a public pool as specified in TB MED 575.

## 8–11. Pets

Pets are authorized to provide developmental experiences for children.

a. The following animals present a health or safety hazard to children and are not authorized:\*

(1) Bats

(2) Hermit crabs

(3) Poisonous animals and insects; includes all spiders and snakes

(4) Aggressive animals (for example, wolf-dog hybrids, dogs bred/trained to demonstrate aggression)

(5) Stray animals

(6) Reptiles and amphibians (for example, snakes, turtles, frogs, and toads)

(7) Psittacine birds (for example, parrots, parakeets, budgies, and cockatiels)

(8) Ferrets

(9) Animals less than 4 months (16 weeks) old.

(10) Female dogs and cats in estrus may not be brought into the child care facility.

b. Authorized animals include—

(1) Dogs and cats older than 4 months (16 weeks).

(3) Rabbits

(4) Rodents (for example, mice, rats, hamsters, gerbils, guinea pigs, chinchillas)

(5) Ungulates (for example, cows, sheep, goats, pigs, horses)

(6) Fish

c. The following controls are applied to prevent disease transmission between children and authorized pets/animals:

(1) The animals are examined by the installation veterinarian and must have completed all required vaccination series (including rabies) prior to their placement in the center.

(2) The animals receive year-round internal and external parasite control treatment according to the installation veterinarian's recommendations.

(3) Pets maintained at the center on a permanent basis are inspected monthly by Veterinary Services, as appropriate. Veterinary inspection includes health and welfare of the animal, animal housing, and animal husbandry.

(4) Upon registering their child/children, parents are notified if animals are present in the facility and prior to a new pet being added. Pets are not authorized in the facility if any registered children have known pet allergies that are likely associated with a particular type of animal.

(5) Pet cages, pens, bowls, and holding areas are kept clean. Pet waste and litter containers are inaccessible to children and are changed and cleaned frequently to preclude development of objectionable odors.

(6) Pet food and supplies are kept out of children's reach when not in use and are stored properly to preclude attracting pests. Opened cans of pet food are not stored in the refrigerators used to store children's food or medications.

(7) Pets are not housed immediately adjacent to (less than 5 ft from) food service areas, such as tables where meals and snacks are served in the child care rooms.

(8) Place unattended fish bowls and aquariums in a location that prevents children from playing in the water or spilling the contents.

### **8–12. Toxic plants**

Plants brought into the child care facility or used for landscaping near outdoor child play areas are evaluated to ensure they are free from poisonous leaves or berries.

*a.* A list of authorized and unauthorized plants is provided in AR 608–10. A copy of the list with associated color photos for easy plant identification should be readily available at the child care facility, in either hard copy or electronic copy. All child care staff should be familiar with the contents of this list.

*b.* Toxic plants are not authorized in indoor or outdoor play areas where children may chew, consume, or otherwise handle the plant(s). An exception is allowed for toxic plants (for example, tomato plants) used in gardening or science projects when access to the plants is under the direct supervision of a staff member.\*

*c.* Indoor plants are labeled with the common name of the plant or species as specified on the list of authorized plants. To ensure no harmful plants are present, Preventive Medicine personnel examine indoor plants during Environmental Health inspections.

### **8–13. Outdoor play areas**

The safety criteria presented in this section are general observations that are easily addressed by Preventive Medicine personnel when assessing sanitation and health controls in outdoor play areas during the course of routine inspections. Playground safety inspections are usually conducted through the installation safety office and must be conducted by a Certified Playground Safety Inspector. Playground safety is required by ACSIM to conform to the guidelines published by the U.S. Consumer Product Safety Commission (CPSC) in the *Public Playground Safety Handbook* (refer to table D–1). Any noted deficiencies identified by Preventive Medicine must be brought to the attention of the Center Director or Office of Safety Management for follow-up.

*a.* Outdoor child play areas are adequately fenced to prevent entry of large animals, such as dogs and deer.

*b.* Vegetation outside of the fence perimeter is sufficiently controlled to prevent overgrowth and encroachment of the outside play area.

*c.* Playground fixtures and features are protected and free from damage or deterioration that may present a physical hazard to children.

(1) Signs of damage include cracks, splintering, bending, warping, rusted parts, and broken or missing components.

(2) Protruding nuts and bolts are protected with caps or are recessed in the fixture to prevent injury.

(3) There are no protruding nails.

(4) Metal slides and other metal play equipment are designed, coated, or otherwise protected from direct sun to prevent surfaces from becoming too hot and to prevent hazardous glare.

(5) Swing chains are protected by a plastic coating, or through design, to prevent pinching.

*d.* Play equipment is designed and maintained to prevent water accumulation that may promote pest harborage or breeding. For example, tire swings should either be solid or have drain holes of sufficient size and quantity to allow water to drain.

*e.* Play areas are designed and maintained to prevent water from pooling, which may present a drowning hazard and promote mosquito breeding.

*f.* Landing areas for climbing equipment, swings, and slides that are filled with sand or mulch are free of animal feces. Sandboxes and sand tables are covered when not in use.

*g.* Play areas are free from hazardous insects' nests such as fire ant mounds, bee hives, and wasp nests.

*h.* Play areas are free from hazardous plants. Vegetation adjacent to the play area or located on the opposite side of the fence does not encroach the play area.

*i.* Area sanitation is maintained to preclude attracting insects, rodents, and other pests or animals.

*j.* Play area hard surfaces and playground equipment are cleaned regularly to prevent accumulations of bird feces, soil, and other debris.

#### **8–14. Custodial and housekeeping services**

The following guidance and requirements outline custodial and housekeeping functions that are separate from the sanitary controls performed by program staff. Custodial and housekeeping service contracts should include the contents of this paragraph to ensure safe and appropriate sanitation controls are applied in child care program facilities. Preventive Medicine personnel should review the contents of new and modified service contracts and prior to a contract renewal to ensure contracts remain relevant and up-to-date. Periodic assessment of contract performance is conducted by the COR and at least annually by Preventive Medicine (for example, during the comprehensive health and sanitation inspection required by DODI 6060.02).

*a.* Custodial and housekeeping services are planned and executed according to a schedule that promotes facility sanitation.

*b.* Housekeeping contracts—

(1) Ensure the performance-based work statement for housekeeping clearly states the standards against which contract performance is measured.

(2) Establish and maintain a quality assurance surveillance plan to assess and measure contractor performance.

(3) Ensure all contracted personnel are specifically trained on the cleaning services to be provided at the child care facility.

*c.* General housekeeping requirements and conditions.

(1) Custodial work is performed by personnel employed for this purpose and does not include the daily, weekly, or as-needed tasks conducted by facility staff as related to kitchen activities and meal/snack service (paragraph 8–3), toy management, diaper changes, spills that occur during learning/play activities, and other situations requiring immediate containment or cleanup (paragraphs 8–5 through 8–11).

(2) Heavy cleaning is generally conducted when the facility is not in operation, or according to the following conditions:

(a) Child activity rooms are cleaned only when children are not present.

(b) Cleaning of areas that are adjacent to child care rooms is authorized only when children will not be disturbed or potentially exposed to harmful vapors and cleaning compounds.

(c) Custodial cleaning is not performed during nap time; this includes sweeping, mopping, dusting, or the use of any cleaning and disinfecting chemicals.

(3) Custodial cleaning equipment, such as mops, buckets, buffers, and vacuum cleaners, is stored in a locked room designed for this purpose.

(a) Storing cleaning equipment and supplies in the laundry room is authorized only when sufficient space and conditions exist to prevent potential contamination of cleaned laundry.

(b) Storing custodial cleaning equipment in child care rooms or modules is not authorized. A broom and dust pan may be retained in child care room closets or staff toilet areas for cleaning small spills resulting from child activities.

(4) Chemicals used for cleaning, sanitizing, and disinfecting are reviewed and approved by Preventive Medicine to ensure they are safe and appropriate for the intended application.

(5) Chemicals are stored in the janitor's closet or a room with a dedicated exhaust capability. Detergents and bleaches used for laundry may be stored in the laundry room.

(6) Toilet rooms and fixtures in staff and child activity rooms are maintained in a sanitary and odor-free condition at all times.

(7) Safety Data Sheets (SDS) for all chemicals are retained at the center and readily accessible to facility staff and custodians. Facility staff and custodians receive appropriate hazard communication training according to AR 385–10 to comprehend the use and contents of the SDS.

*d. Daily housekeeping services include—*

(1) Cleaning uncarpeted floors using a dustless cleaning method. Particular attention is given to floor corners, along baseboards, and under the edges of fixtures and furniture. Spills occurring during meals, snacks, and child activities are cleaned by staff using a broom/dust pan and disposable paper towels, as appropriate.

(2) Vacuuming carpets and large area rugs. Equip vacuum cleaners with a HEPA filter or bag.

(3) Mopping floors, stairs, entryways, and landings.

(4) Emptying all waste receptacles and replacing liners with a clean plastic liner.

(5) Cleaning and disinfecting the following areas using approved cleaners and disinfectants. Paragraph 8–5k and appendix B provide guidance for using antimicrobial products.

(a) Bathroom floors, toilets, sinks, and fixtures.

(b) Hand wash sinks in activity rooms.

(c) Drinking fountains.

(d) Waste containers.

(e) High-touch surfaces (door knobs and light switches). Facility staff personnel are responsible for the toys, diaper pads, and small activity and sleeping mats/pads. Items such as computer keyboards and electronic game controllers may be delegated to custodial personnel. Other areas that may be delegated to custodial/housekeeping personnel include fitness room mats used during exercise, hand grips and benches for fitness equipment, handles/controllers for large gaming tables (for example, air hockey and foosball), and other similar hand grips, such as pool cues and ping-pong paddles.

*e. Weekly housekeeping services include—*

(1) Cleaning walls, wainscoting, partitions, cribs, hard surfaces of furniture (bookshelves, cabinets, cubicles, and the chairs and tables in customer waiting areas), and counters in child activity spaces and restrooms. Facility staff personnel are generally responsible for cleaning the tables and chairs used during meal service; activity tables; the kitchen; and food storage areas.

(2) Using a dustless method to dust ledges, door frames, window sills/frames, handrails, light fixtures, ventilation diffusers, HVAC units, monitoring cameras, and other surfaces where dust may collect, regardless of their height from the floor.

(3) Cleaning vertical mats (for example, in fitness rooms) when soiled, and at least weekly.

*f. Quarterly or semiannual services include—*

(1) Cleaning drapes and cordless window coverings (mini-blinds).

(2) Washing the inside and outside of all windows. Spot-cleaning should be conducted when visible hand prints/smears are present. The interior of clerestories and associated sills are also cleaned at a frequency to preclude accumulation of dust and other debris.

(3) Cleaning upholstered furniture and other miscellaneous furniture and surfaces in the child care rooms, offices, and waiting areas. Spot-cleaning is required when surfaces become soiled from spilled food or beverages (excluding water), dirt/mud, spilled art supplies, or body excretions (blood, vomit, urine, or feces).

(4) Stripping, waxing, and buffing of floors is performed whenever a buildup of wax occurs along baseboards and under doors, and to areas that may not be accessible to the custodial staff in the normal course of their duties.

*g. Carpet cleaning.*

(1) Carpets (and large area rugs) located in the common areas of a facility are generally shampooed or steam cleaned at least once each year.

(2) Facilities containing wall-to-wall carpeting or large area rugs located in areas that are used for infant crawling or “tummy time” without the use of a barrier material should be shampooed or steam cleaned monthly and when heavily soiled, as specified in subparagraph *f*(3), above.

(3) Carpet cleaning must be scheduled to allow at least 1 to 2 days of drying time, as appropriate.

### Section III – FAMILY CHILD CARE HOMES

#### 8–15. Home inspection

*a.* In accordance with AR 608–10, the installation is responsible for evaluating FCC providers and their homes and certifying that the requirements related to health, fire prevention, safety, and child development programming have been met. Evaluation of FCC homes is a reoccurring process; homes are visited regularly and inspected throughout the year by the FCC Director and other key installation representatives.

(1) Preventive Medicine conducts health inspections for all new FCC providers prior to final certification and at least once annually thereafter. Health inspections are comprised of the activities performed by a Public Health nurse and the activities performed by an Environmental Health professional.

(2) Preventive Medicine may delegate health inspections to the FCC management staff through signature authority when there are more than 15 FCC homes certified for the installation.

(a) Preventive Medicine conducts a minimum of five joint inspections to validate the inspection competency of designated FCC management personnel.

(b) Preventive Medicine documents these joint inspections on DA Form 4841-R (Child Development Services (CDS) Program/Facility Report (LRA)), which is signed by the FCC Director.

(3) The unannounced installation comprehensive health and sanitation inspection required by DODI 6060.02 includes a comprehensive inspection of at least 10 percent or a minimum of 3 FCC homes.

(4) Preventive Medicine representatives (for example, Public Health Nursing and Environmental Health Sciences) inspect all high-risk homes, which are defined as having any of the following characteristics:

(a) The provider is 18, 19, or 20 years of age.

(b) The provider cares for infants and/or toddlers only.

(c) The provider cares for children with special needs.

(5) FCC homes operated in Government quarters, including privatized housing areas, must meet structural, safety, and health standards. FCC providers operating in privatized housing areas may be licensed and regulated by the local health department and are subject to inspections by installation Preventive Medicine. Refer to paragraph 1–11c for guidance on inspecting FCC providers in privatized housing.

*b.* AR 608–10 provides general requirements for FCC homes and operators. To protect children’s health and ensure their safety, Preventive Medicine may further modify the specific criteria for sanitation presented in this chapter.

#### 8–16. Home food safety

The food sanitation and safety requirements specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP apply to FCC homes. This paragraph identifies authorized practices and controls to ensure safe food in FCC homes.

*a.* Provider training. The CYSS Coordinator and FCC Program Director are responsible for ensuring initial food safety training and annual refresher training are provided to FCC providers. At a minimum, FCC providers receive the basic food employee training specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provision 2–501.11(A), which includes discussion on the five food safety risk factors. Training should also include specific guidance regarding the topics identified in paragraphs *b* through *g*, below.

*b.* Food sources. FCC providers purchase food from reputable suppliers, such as the commissary (Defense Commissary Agency), AAFES Express store, or off-installation commercial grocer (supermarket).

(1) Serving home-canned food is prohibited.\*

(2) Serving products, such as seafood and shellfish, from roadside vendors is prohibited.\*

(3) Serving “home-grown” fresh fruits and vegetables is allowed.

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### c. Food storage.

- (1) Store refrigerated foods in a unit that maintains the food temperature at 41°F (5°C) or below.\*
- (2) Freezers should be maintained at a temperature of 0°F (–17.8°C) or below.
- (3) Place a bi-metallic thermometer in each refrigerator and freezer to monitor air temperatures. Use of glass thermometers is not authorized. Thermometers should be NSF-certified or as specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provisions 4–205.11, 4–205.12, and 4–205.13. The “NSF” certification marking is generally found on the face of bi-metallic and refrigerator thermometers.
  - (a) A refrigerator with a separate freezer compartment must have a thermometer in each compartment.
  - (b) Place thermometers in the warmest part of the unit—typically, the top shelf and closest to the door. The thermometer should be visible (unobstructed by food items) when the door is open.
- (4) Store semi-perishable and nonperishable foods (that do not require refrigeration) in a cool, dry location where there is no evidence of insect or rodent activity.
- (5) Separate food from toxic chemicals. Food may not be stored below or on the same shelf as chemicals such as cleaning compounds.\*

### d. Product marking.

- (1) Mark the purchase date on all food packages that do not have a manufacturer’s “use by” or “expiration” date indicated on the package; rotate these items on a “first in, first out” basis.

- (2) Ensure food items are not used beyond the manufacturer’s “use by,” “best by,” or “expiration” date.

### e. Hand washing.

- (1) FCC providers wash their hands with soap and warm water before handling food and between handling raw meats and ready-to-eat foods.\*

- (2) Use only single-use paper or cloth towels to dry hands after handwashing. Cloth towels may only be used by one person at a time following a single handwashing event and must then be laundered before reuse.

- (3) Children should wash their hands with soap and warm water before eating any meals, including snacks.

### f. Food preparation and service.\*

- (1) Preschool-age children (5 years old and younger) are considered a highly susceptible population. The following requirements apply when food is served to a highly susceptible population:

- (a) All foods must be cooked to the minimum prescribed internal cooking temperature, or higher, for the specified product.

- (b) Serving undercooked or raw protein foods is prohibited.

- (2) Ensure foods cooked using a slow cooker (such as a Crock-Pot®) reach the specific food’s prescribed internal cooking temperature, as per TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, within the first 2 hours of cooking.

- (3) Serve only pasteurized fruit and vegetable juices. Fresh-squeezed juices are authorized when prepared in the home on the same day they are served.

- (4) Serving leftovers or dishes containing leftover products as an ingredient to children enrolled in the FCC Program is prohibited. This prohibition does not apply to the FCC provider’s own children who may also be enrolled in the Program. Care must be taken to label leftover foods and separate them from non-leftover dishes during meal service.

- (5) Wash and sanitize tables and highchair trays before and after each meal or snack period.

### g. Mechanical dishwashing. The preferred method for washing pots, pans, food utensils, and dishes is mechanical dishwashing.

- (1) The preferred dish machine for use in FCC homes is an NSF-listed residential dishwasher. The “NSF” marking can be found on the data plate located near or on the inside of the door. Non-NSF-listed dishwashers are also authorized (see subparagraph (2), below).

- (a) Scrape or rinse food debris from dishware before placing it in the dishwasher.

- (b) Operate the dishwasher using a complete sanitizing (heat) cycle. Prohibited activities include shortening the wash cycle and opening the dish machine door (to add or remove items) before the cycle is complete.\*

(2) Non-NSF-listed dishwashers may be used but must be operated using the heavy cleaning cycle. Some non-listed residential dishwashers do not have a sanitizing cycle, or the efficacy of the sanitizing cycle has not been verified by a certifying organization such as NSF.

(a) Except as stated in subparagraph (b), below, when a non-NSF-certified residential dishwasher is used, a manual chemical sanitizing rinse is applied by the FCC provider after the dishwashing cycle is complete. Refer to paragraph *h*, below, for manual sanitizing procedures.

(b) If the non-NSF-certified machine is designed to provide a heat-sanitizing cycle, place a maximum-temperature-registering thermometer or temperature indicator test paper, as specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP in the dishwasher to verify a sanitizing temperature was attained during a complete wash-and-sanitize cycle. The minimum sanitizing temperature requirement for a dish machine is 160°F (71°C) when measured on the surface of the utensil. If this temperature is achieved, a supplemental chemical sanitizing rinse is not required.

*h. Manual dishwashing and sanitizing.* Most home kitchens have either a 1- or 2-compartment sink. FCC providers apply the procedures presented in table 8–1 when manually washing and sanitizing dishes and utensils.

(1) Use a clean dish cloth, or use scrub pads with plastic or synthetic mesh. Sponges may not be used for washing dishes.

(2) Dish cloths are laundered at the end of each day and are not used for other cleaning tasks during the day.

(3) Allow sanitized dishes to air dry before storing. Use of dish towels for wiping residual moisture from sanitized items is strongly discouraged as towels may become soiled between uses, resulting in the transfer of contaminants to sanitized dishes. A clean (freshly laundered) dish towel or paper towel should be used when there is a need to wipe residual moisture from the exterior of pots and pans.

**Table 8–1. Manual warewashing procedures**

Step	Single Compartment Sink	2-Compartment Sink
Wash	Follow the instructions for a 2-compartment sink.	<ul style="list-style-type: none"> <li>• Fill sink #1 with 110°F (43.3°C) water.</li> <li>• Add dishwashing compound.</li> <li>• Scrape excess food waste off dishes.</li> <li>• Submerge dishes in the soapy water, and wash using a clean cloth or scrubbing pad.</li> </ul>
Rinse	<ul style="list-style-type: none"> <li>• Place washed items into a large plastic tub.</li> <li>• Drain and rinse the soap and food residues from the wash sink.</li> <li>• Return the dishes to the sink, and rinse using the procedure outlined for a 2-compartment sink.</li> <li>• Rinse the plastic tub to remove residual soap residues.</li> </ul>	<ul style="list-style-type: none"> <li>• Fill sink #2 with 120°F (49°C) water, and immerse washed items to remove soap residues; or</li> <li>• Rinse items using a hot water sprayer or place them under a running faucet until soap residues are removed.</li> <li>• Place rinsed items in a drying rack until a sanitizing sink can be prepared.</li> </ul>
Sanitize	<ul style="list-style-type: none"> <li>• Return the rinsed dishes to the plastic tub.</li> <li>• Follow the sanitizing procedures specified for a 2-compartment sink.</li> </ul>	<ul style="list-style-type: none"> <li>• Drain the soapy water from sink #1 and rinse out any food scraps, grease, and detergent residues.</li> <li>• Fill sink #1 with warm water and prepare a 100-ppm bleach sanitizing solution (refer to table B–1).</li> <li>• Verify the concentration of the bleach solution.</li> <li>• Immerse the items in the sanitizing solution for 15 seconds when using a 100-ppm concentration. If the chlorine is 50–100 ppm, a 1-minute contact time is required.*</li> </ul>

Step	Single Compartment Sink	2-Compartment Sink
Air Dry	Place sanitized items in a clean dish rack to allow air drying.	Place sanitized items in a clean dish rack to allow air drying.

### 8–17. Home sanitation and hygienic controls

Young children readily acquire and transmit infectious organisms. Disease agents such as respiratory and gastrointestinal organisms may be shed by children even when they do not appear to be sick. The transmission of disease is more likely to occur in places where young children gather in close proximity. The spread of infection is also facilitated by incontinence; inadequate personal hygiene; placing hands, toys, or other objects in the mouth; drooling; and direct contact among children during play.

*a. Nonporous surfaces and hard toys.*

- (1) Clean and sanitize toys as specified in paragraphs 8–7*a* and *b*.
- (2) Clean and disinfect other common high-touch surfaces (for example, door knobs/handles, and computer controls) daily. Alcohol-based antimicrobial wipes and other EPA-registered disinfecting wipes are appropriate for high-touch surfaces (see appendix B).

*b. Soft toys.* Soft toys include pillows, stuffed toys, and other play items constructed of fabric or other porous material.

- (1) General sanitary controls.
  - (a) Only supply soft toys that are labeled by the manufacturer as “machine washable.”
  - (b) Allow only one child at a time to play with a soft toy until it is laundered.
  - (c) Clean soft toys using the procedures outlined in paragraphs 8–7*c* and *d*.
- (2) Soft toys provided by the child’s parent/guardian.
  - (a) Soft toys should return home with the child each day.
  - (b) If maintained at the FCC home, soft toys are taken home at least weekly, or more frequently when soiled. The parent/guardian is responsible for washing and drying the toy before it is returned to the FCC home.

*c. Mattresses, sleep mats, and activity pads.*

- (1) Allow only one child to occupy a bed, crib, or sleeping mat at the same time.
- (2) Use a waterproof cover to protect fabric mattresses.
- (3) Clean and sanitize plastic mattresses, plastic mattress covers, and activity pads as specified in paragraph 8–8.

*d. Bedding.* Launder bedding (blankets, pillows, sheets) whenever it becomes soiled with bodily excretions, before use by different children, and at least weekly.\*

- (1) Ensure FCC homes are equipped with an operable mechanical clothes washer and dryer and a connection to hot water.
- (2) Ensure a hot water wash and rinse are applied and all items are thoroughly dried using a mechanical dryer set on high heat.
- (3) Ensure bedding provided by the child’s parent/guardian is used exclusively by the designated child. Children’s bedding retained at the FCC home during the week is labeled for each child and not mixed with other bedding if stored for subsequent use before being laundered.

*e. General house sanitation.*

- (1) Clean and disinfect training toilets after each use. Bathrooms are cleaned and disinfected each day when child care services are provided. Cleaning and disinfection are conducted at a time when children are not in care.
- (2) Do not conduct diaper changes in the kitchen or on tables used for meals and snacks.
- (3) Apply the sanitation controls specified in paragraph 8–5 as they apply to the home care setting.

*f. Sick children.* Ensure provisions are in place to isolate a sick child from the other children until the parent/guardian is notified and the child is picked up. Such provisions include—

- (1) Providing a separate area where the child can be placed.
  - (a) A bedroom that is not normally used for child care is appropriate for children ages 3 years and older. According to AR 608–10, children under 3 years of age must remain within sight and sound at all times.

- (b) Whenever possible, a separate bathroom should be used to accommodate the sick child.
- (2) Removing linens from bedding used by the sick child (after the child has been removed from the home) and laundering those items immediately.\*
- (3) Cleaning and disinfecting any surfaces or items the sick child has touched, coughed on, or sneezed on, including bathroom fixtures, immediately after the child has departed from the home.\*
- g. Health and hygiene controls specified in paragraph 8–6 apply to the FCC home. At a minimum, the criteria presented in paragraph 8–6b are evaluated as a component of the Environmental Health sanitation inspection.

### **8–18. Pets and indoor plants**

FCC homes follow the same requirements and restrictions for pets and indoor plants as specified in paragraphs 8–11 and 8–12.

- a. FCC providers who own a personal pet that is a prohibited pet as specified in paragraph 8–11a must ensure the pet is not accessible to the children receiving care.
- b. Personal pets that are not included as part of the FCC provider’s services are required to have updated immunizations, year-round internal and external parasite control treatment, as appropriate. In addition, AR 40–905 requires these pets to have a yearly health certificate, regardless of whether the pets are kept separate from the children.

### **8–19. Outside play area safety and sanitation**

The installation safety office is responsible for conducting periodic reviews of outdoor child play areas to identify safety violations. Community playgrounds are not evaluated as part of the FCC home inspection; a separate *Recreational Area* survey is conducted. This paragraph identifies key items of concern that may present a safety or health hazard at outdoor play areas managed by the FCC home. During the Environmental Health sanitation inspection of the FCC home, Preventive Medicine conducts a cursory evaluation of play areas and reports any suspected safety violations to the safety office.

- a. Activity centers and play structures. Ensure equipment is free from damage such as cracks, splintering, bending, warping, rusted parts, and broken or missing components. Evaluate outdoor play areas as specified in paragraph 8–13.
- b. Sanitation. Sanitation hazards include poor waste management, insects, rodents, and other pests or animals.
  - (1) Picnic tables, chairs, and surrounding grounds that are under the direct control of the FCC provider are maintained clean and free of food debris.
  - (2) The outdoor area accessible to children is free of trash, broken glass, debris, and unnecessary equipment that may attract or harbor pests.
  - (3) Play areas are designed and maintained to prevent water from pooling; pooled water may present a drowning hazard and/or promote mosquito breeding.
    - (a) Play equipment is designed to allow draining and prevent water accumulation.
    - (b) High-traffic areas and mulched landing areas under play equipment are maintained to prevent erosion.
  - (4) Sand boxes and landing areas supporting play equipment, such as sand or mulch around climbing structures, swings, and slides, are free from animal feces. Sand boxes must be covered when not in use.
- c. Trip hazards. Ensure play areas are maintained to prevent trip hazards due to large cracks or holes in concrete steps or walkways, exposed tree roots, utility cords, large rocks, or fixtures protruding from the ground.
- d. Protective barriers and water hazards.
  - (1) Outdoor play areas that extend from the FCC provider’s home should be enclosed with a fence to prevent children from straying from the home during play and to prevent unleashed dogs or other large animals from entering the play area.
  - (2) Ensure homes furnished with an in-ground swimming pool are enclosed with a fence that is equipped with a locked or self-latching gate to prevent children from entering the pool unattended. FCC homes that have an above-ground pool that is not enclosed within a suitable barrier may not allow children to play outdoors unattended; the FCC provider must maintain “eyes on” the children at all times.\*
  - (3) Spas/hot tubs located at the FCC home must be covered with a protective shield at all times.

(4) FCC providers must maintain visual contact with children during outdoor play when there are other water hazards accessible to children that cannot be removed or otherwise controlled by the use of a protective barrier or fence. Examples include streams adjacent to playgrounds; garden ponds and fountains; and miscellaneous containers (or depressions) of sufficient size that may present a drowning hazard to children if water is present in the container/depression.

*e.* Water play. The requirements and restrictions outlined in paragraph 8–10 for water play apply to the FCC home.

*f.* Toxic substances. Ensure play areas are free from access to toxic chemicals/materials.\*

(1) Keep utility sheds locked at all times to prevent child access.

(2) Herbicides are prohibited for use in play areas IAW AR 608–10.

(3) Do not apply pesticides to lawn and vegetation during childcare activities. After application, children should not be allowed to re-enter the play area until the specified time indicated on the pesticide label has elapsed, or until a minimum waiting period of 48 hours, if not specified on the label, has elapsed.

*g.* Hazardous plants and animals.

(1) Maintain play areas free of hazardous insects. Look for signs of bee/wasp activity or nests. Lawns should be free of ticks, fleas, ant mounds, and other biting/stinging insects.

(2) Vegetation adjacent to the play area or located on the opposite side of the fence should be trimmed and should not encroach the play area.

(3) Maintain play areas free from thorny and poisonous plants.

## **Section IV – YOUTH FACILITIES, SCHOOL-AGE CARE, AND SCHOOLS**

### **8–20. Environmental health sanitation and controls**

In general, the environmental health controls and sanitation criteria presented for CDCs are applied to Youth Centers, SAC, and schools, as appropriate. Indoor spaces are evaluated for cleanliness, condition of repair, environmental (climate) controls, and food safety. Outdoor play areas are evaluated for conditions that present a hazard from physical facilities and equipment, plants/vegetation, animals, and insects (see paragraph 8–13).

*a.* Food service.

(1) Except as specified in subparagraph (2)(c), below, for teaching kitchens, general meal service is conducted IAW TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP using a commercial-grade kitchen and as specified in paragraph 8–3.

(2) With the exception of serving meals as part of cafeteria-style dining, teaching kitchens are used exclusively for educational purposes and do not support programmed meal service:

(a) Teaching kitchens are intended to mirror the home setting for children to learn, prepare, and sample foods as part of life skill building.

(b) Teaching kitchens are not food establishments as defined in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP.

(c) The teaching kitchen is separated from the commercial-grade kitchen by a pass-through window, counter, or door. Children are not authorized in the commercial-grade kitchen area. The counter used for teaching kitchens may be used to support the required cafeteria-style dining during programmed meal service.

(d) Principles of food safety are applied when managing foods that require time or temperature control for safety. These principles include applying temperature controls when storing and cooking foods, adhering to hand hygiene, cleaning and sanitizing food-contact surfaces, and protecting food from contamination.

(e) Use of residential-style kitchen equipment is authorized for teaching kitchens. Equipment must be NSF-certified (or equivalent for locations outside the continental United States (OCONUS)) for food safety, cleanability, and durability, or it must be selected from the OTSG-approved list of residential appliance manufacturers and models. Preventive Medicine must review and approve requests to purchase residential kitchen equipment that is not on the list.

(f) Teaching kitchens are equipped with a hand wash sink. For youth facilities, a hand wash sink is generally provided in the teaching kitchen and near the serving line.

(g) Food prepared during educational sessions may be consumed by the participants; it may not be sold or served to other individuals, nor may it be retained beyond the date on which it was prepared.

(h) Members of the teaching kitchen staff are required to complete initial and annual food safety training as specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provision 2-501.11; they are not required to obtain Food Protection Manager Certification.

(3) A “snack bar” may be operated within the youth facility for fundraising purposes and is not considered to be a food establishment as defined in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP. The snack bar is usually adjacent to the teaching kitchen and—

(a) May not be operated through the commercial kitchen or allow youths to use the commercial kitchen (and its equipment) to prepare or store food.

(b) Should be limited to selling foods that do not require temperature control for safety. Exceptions may be applied if the food is a commercially-prepared, ready-to-eat product and has been evaluated and approved by Preventive Medicine according to TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provision 8-301.11(C).

*b. Physical facilities.* Facility general maintenance and sanitation meet the criteria specified in paragraphs 8-4 and 8-5. Particular attention is given to the following conditions during routine inspections:

(1) Window screens are not missing or torn.

(2) Walls, floors, and ceilings are free from damage. There are no cracks or gaps under exterior doors, around windows, or between plumbing or electrical conduits and the wall.

(3) Indoor climate control maintains the temperature between 68°F (20°C) and 78°F (25.5°C).

(4) Hand wash sinks are operable with hot and cold water and appropriately supplied with dispensed powdered or liquid soap, paper towels or a heated hand dryer, and toilet paper. Bar soap is not provided.\*

(5) Plumbing fixtures are free from leaks, and there are no potential cross-connections between the drinking water system and the sewage system.\*

(6) Objectionable odors are not present in the facility. The facility is free from mold and conditions that contribute to mold growth, such as excessive and prolonged condensation on walls. Musty odors may indicate a mold problem.

(7) There is no evidence of insect or rodent infestation.

*c. Toys.*

(1) Handheld toys are cleaned and sanitized at least weekly, or more frequently when visibly soiled, and as specified in paragraphs 8-7*b* through 8-7*d*.

(2) High-touch components of electronic toys (and gaming systems) are cleaned and disinfected daily. Refer to subparagraph 8-14*d*(5)(e) for information about required daily cleaning and disinfection of other high-touch surfaces.

*d. Fitness rooms, gyms, and sports equipment.* Refer to paragraph 8-5*k* for guidance regarding appropriate antimicrobial agents, and refer to subparagraphs 8-14*d*(5)(e) and 8-14*e*(3) for additional guidance regarding fitness areas.

(1) Surfaces that come into contact with a person’s skin during exercise are cleaned and disinfected daily at the close of each business day. Surfaces include, but are not limited to, fitness mats, equipment seats, benches, hand grips on climbing walls, and the grip areas of weights bars, dumbbells, and machines.\*

(2) Fitness mats and padded equipment grips and seats/benches are maintained free from tears; torn pads are not taped.

(3) The skin-contact surfaces of issued sports equipment and PPE are cleaned and disinfected after each use. This equipment includes, but is not limited to, eyewear, face shields, batting helmets, and racquet hand grips.\*

(4) Issued sports clothing is laundered after each use and before its reissue to a different person. Issued athletic footwear is disinfected with an approved fungicide spray and allowed to air dry before being reissued to a different person.\*

*e. Waste management.*

(1) An appropriate number of waste receptacles are provided in all restrooms, kitchen and dining areas, and throughout the facility.

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(2) Waste receptacles are covered or self-closing, supplied with plastic liners, frequently emptied to prevent overflow, and cleaned as often as necessary to prevent objectionable odors and attracting pests.

(3) Bulk waste collection is conducted weekly or more frequently to prevent overflow of dumpsters.

(4) Outdoor waste collection areas are maintained free from spilled waste, damaged equipment, pallets, and other unused items that may create suitable harborage for pests.

*f.* Housekeeping. General housekeeping and custodial services are provided as specified in paragraph 8–14, as appropriate.

(1) Floors are clean and free from standing water, food residues, trash, and other debris.

(2) Restrooms, common areas, gymnasiums, and multipurpose rooms are cleaned daily.

(a) Floors are swept and then damp-mopped.

(b) Drinking fountains are cleaned and disinfected daily, to include removal of mineral buildup on the dispensing nozzle/fixture.

(3) Carpets are vacuumed daily, spot-cleaned as needed, and shampooed at least once each year.

(4) Horizontal surfaces, to include clerestories and other elevated features, are cleaned at a frequency that precludes the buildup of dust or debris.

(5) Walls are spot-cleaned as needed.

(6) Janitorial supplies and equipment are kept clean and are stored properly in designated closets when not in use.

## CHAPTER 9

### DETENTION FACILITIES

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#### 9–1. Background

*a.* The requirement for conducting monthly medical inspections at Army Correction System facilities is specified in AR 190–47.

(1) The Army Correction System comprises confinement facilities, regional corrections facilities, and the U.S. Disciplinary Barracks.

(2) Correctional custody facilities and military police detention cells (D-cells) are not part of the Army Correction System but apply the requirements specified in AR 190–47.

*b.* The term “medical inspection,” as applied in this chapter, refers to the environmental health assessment to identify conditions and activities which may adversely affect the health and wellness of detained/confined persons and guard staff.

(1) The scope of the inspection includes evaluation of space allocations to minimize the occurrence of upper respiratory illness; sanitary control of premises and linen; hygienic controls; and food safety.

(2) Safety violations observed during the inspection are reported to the installation safety office for further recommendation and action.

*c.* Correctional custody facilities are similar to troop barracks and are often located contiguous to regular troop areas. Periodic health inspections for correctional custody facilities are not directed in AR 190–47. However, these facilities are expected to meet the basic criteria for troop housing (barracks) as specified in chapter 5 of this bulletin.

*d.* Detained persons are generally held for a maximum of 24 hours and may be held for up to 72 hours when such detention is approved by the installation Provost Marshal or the installation commander’s designated representative.

*e.* D-cells are sometimes used to temporarily confine pre-trial and post-trial personnel. Facility requirements for housing confined persons in D-cells are specified in this chapter where applicable.

*f.* Inspection findings for D-cells are recorded in the facility duty log (DA Form 1594) and should be summarized in an MFR for Preventive Medicine recordkeeping.

*g.* Inspection findings for Army Correction System facilities are reported to the facility commander or designated representative at the time of inspection. This reporting may be accomplished verbally or in writing.

(1) Development of a local form is authorized to document inspection findings for onsite reporting.

(2) When an inspection form is not used, inspection findings should be summarized in a memorandum for Preventive Medicine recordkeeping.

#### 9–2. General facility requirements

The following criteria apply to all detention and confinement facilities.

*a.* Illumination provides a minimum of 20 foot-candles (215 lux) of artificial lighting per cell and in hygiene areas.

*b.* Temperature control within each cell is maintained according to installation standards, generally between 68°F (20°C) and 78°F (25.5°C).

*c.* Individuals have access to toilets and hand wash facilities 24 hours per day, to include accessing toilet facilities without staff assistance when the individual is confined to the cell/sleeping area.\*

*d.* Shower rooms and hand wash sinks are supplied with hot (120°F/49°C at point of use) and cold water.\*

*e.* Floors, walls, and ceilings in cells, toilet rooms, and shower rooms have smooth surfaces free of physical hazards and damage.

*f.* All water piping, fixtures, switches, conduits, and light and heating controls are inaccessible to detainees and confined persons.

*g.* The minimum inside measurement for individual cells or rooms is at least 8 ft long, by 6 ft wide, by 8 ft high.

*h.* Males and females are housed in separate cells/rooms.

*i.* Prisoner furnishings (bed, locker, desk) are prison-style construction using noncombustible materials (metal and/or hard plastic/rubber).

*j.* Bedding is provided for persons detained overnight or for at least 24 hours. Bedding is fabricated of fire-retardant materials.

### **9–3. Confinement facility requirements**

In addition to the facility requirements specified in paragraph 9–2, the following criteria apply to confinement facilities:

*a.* Ventilation provides a minimum of 10 cubic feet per minute (cfm) of outside air circulated per person for facilities constructed prior to 1995, and 15 cfm in newer facilities.\*

*b.* Space allocations are based on the prisoner classification.\*

(1) Maximum-custody and segregated prisoners. Except as specified in paragraphs *c* and *d*, below—

(a) These prisoners are housed in single cells with a minimum of 35 sq ft of “unencumbered space.” Unencumbered space is the usable (empty) space that is not encumbered by furnishings or fixtures such as the bed, plumbing fixtures, desk, and locker. Calculate the unencumbered space with all furnishings in their operational position.

(b) At least one dimension of the unencumbered space is no less than 7 ft.

(c) When confinement in the cell exceeds 10 hours per day, at least 80 sq ft of total floor space is provided per cell.

(2) Minimum- and medium-custody prisoners.

(a) Single- or multiple-occupancy cells/rooms may be used.

(b) A minimum of 35 sq ft of unencumbered space is provided when there is one person occupying the cell/room.

(c) A minimum of 25 sq ft of unencumbered space is allotted per person when 2 to 250 persons occupy the cell/room.

(d) When confinement exceeds 10 hours per day, at least 80 sq ft of total floor space is provided per cell/room occupant.

*c.* A reduced allocation of 20 sq ft of unencumbered space per prisoner may be applied when priority conditions exist, for example, to determine mobilization prisoner capacities.

(1) The unencumbered space is calculated with all fixtures and minimum furnishings (bed and locker) in their operational position.

(2) Reduced allocations are not permitted for prisoners in close confinement.\*

*d.* An emergency minimum allocation of 17 sq ft of unencumbered space per prisoner is authorized, except in segregation areas. The emergency allocation is applied during temporary peak confinement facility population periods, not to exceed 7 consecutive days. The Department of the Army, Provost Marshal General may approve emergency minimum space operations for any period beyond 30 consecutive days.\*

*e.* The minimum ratios for toilet and hand wash facilities comply with national or State building or health codes and the following:

(1) One toilet is provided for every 12 prisoners in male-occupied facilities. Urinals may be substituted for up to one-half of the number of toilets.

(2) One toilet is provided for every eight prisoners in female-occupied facilities.

(3) A minimum of two toilets are provided in all housing units occupied by three or more prisoners.

(4) Toilet facilities are designed with one hand wash sink for every 12 occupants.

*f.* First aid kits, medical protective clothing and equipment, and medical litters are placed where they are readily available to custodial personnel.

### **9–4. Detention facility requirements**

In addition to the facility requirements specified in paragraph 9–2, the following criteria apply to detention facilities:

*a.* The minimum space allocations for D-cells include—\*

(1) 35 sq ft of unencumbered space for single-occupancy cells.

(2) 40 sq ft per detainee in multiple-occupancy cells.

- (3) At least 80 sq ft of total floor space per cell occupant when confinement exceeds 10 hours per day.
- (4) 72 sq ft per person if pretrial prisoners are temporarily confined in a D-cell.
- b. Cell bunks are permanently affixed to the floor.
- c. Appropriate first aid and other emergency equipment are maintained in close proximity to cell areas.

### 9-5. Enemy combatant facilities

The detention facility square footage requirements specified in paragraph 9-4 are recommended for expeditionary enemy combatant facilities. Refer to AR 190-8 for regulatory guidance regarding EPW and other categories of enemy detainees according to Geneva Convention III, Article 25; and Geneva Convention IV, Article 85.

### 9-6. Food and water

A normal ration of safe food and water is provided to detained and confined personnel.

- a. Correction facility kitchens are designed, operated, and evaluated according to TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP.
- b. Foods purchased by the detention facility from an off-installation supplier (restaurant, food concession, or retail food store) are—
  - (1) Obtained from approved sources as specified in AR 40-657/NAVSUP 4355.4H/MCO P10110.31H.\*
  - (2) Handled IAW TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP during transport to the detention facility and until the food is served. For example, temperature controls are applied, or the 4-hour rule for time as a public health control is applied, and all foods are protected from contamination.
- c. Bulk food service (servicing more than one confined or detained person) that is coordinated between the confinement or detention facility staff and a dining facility or other on-post food establishment is treated as a remote site feeding operation.
  - (1) The bulk food must be managed using cleaned and sanitized insulated food containers and transported as specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP, provisions 9-502.13 and 9-502.18, respectively.
  - (2) Food may not be served if more than 4 hours have elapsed between the time the insulated food container was filled by the food establishment and the time the food is served to individuals.\*
- d. Food that is unconsumed during the prescribed meal period is not retained. Unconsumed food is removed from the cell and discarded at the end of the meal period.
- e. An adequate supply of drinking water is provided to detained and confined personnel throughout the day.\*

### 9-7. Inspection guidelines

- a. Consideration may be given to reduce the frequency of D-cell inspection at facilities that have a history of infrequent use. Reducing the inspection frequency requires coordination with and approval from the installation commander or designated representative and the Provost Marshal, if assigned.
  - (1) A bimonthly or quarterly inspection schedule may be considered when D-cells are mostly unoccupied for 2 or more consecutive months throughout the year.
  - (2) Approval to reduce the inspection frequency is documented using an MOU signed and dated by—
    - (a) The installation medical authority or Preventive Medicine, as appropriate;
    - (b) The Provost Marshal, if assigned; and
    - (c) The installation commander or designated representative.
  - (3) The following conditions are specified in the MOU:
    - (a) The Military Police or Provost Marshal will contact Preventive Medicine when a D-cell becomes occupied. Upon notification, an inspection will be conducted within an agreed-upon timeframe (for example, within 24-72 hours) if at least 30 days have elapsed since the last inspection.
    - (b) The conduct of an unscheduled inspection does not reset the time before the next inspection is conducted, as programmed in the bimonthly/quarterly plan.
    - (c) The bimonthly/quarterly inspection plan will revert to a monthly frequency if at least one person is detained/confined during the month. The bimonthly or quarterly inspection schedule will resume after all D-cells have been vacant for more than 30 days.

(d) The MOU is valid for a maximum period of 2 years. Monthly inspections will resume following expiration of the MOU until a new MOU is established.

*b.* An illumination survey using a light meter should be conducted at least once each year. Measurement of the lighting intensity is not required each month. Monthly inspections provide a cursory evaluation of lighting conditions to ensure light fixtures are operable and all bulbs are active. Measure the illumination if a cell appears to have insufficient lighting due to missing or inoperable bulbs or the use of lower-watt bulbs.

*c.* A ventilation survey should be conducted at least once each year.

*d.* Inspection of Army Correction System facilities includes evaluation of prisoner indoor and outdoor recreation areas and food service areas.

## 9–8. Inspection procedures

*a.* Prepare for inspection.

(1) Table 9–1 provides a recommended list of equipment and supplies for use during inspections.

**Table 9–1. Inspection equipment and supplies**

Equipment	Supplies
AR 190–47 and TB MED 531 (chapter 9)	Tape measure (25 to 50 feet)
Clipboard, notepad (or inspection form), pen	Plastic spray bottle
Flashlight (with batteries)	Hydrogen peroxide
Digital camera	Luminol
Light meter	Disposable gloves
Blacklight (handheld; with batteries)	Hand sanitizer (60% ethyl alcohol)
	Paper towels
	Plastic bag (small to 8-gallon)

(2) A member of the facility staff should accompany the inspector during the inspection.

(3) Put on disposable gloves prior to beginning the inspection.

(4) Comprehensive assessment of the cell interior is conducted only when the cell is empty or the detainee/prisoner is under direct control of the Military Police accompanying the inspector.

*b.* Inspection activities. Table 9–2 presents a guide for conducting the inspection.

(1) Verify males and females are housed in separate cells/rooms as specified in paragraph 9–2*h*.

(2) Verify availability, accessibility, and appropriate ratios for toilets and hand wash sinks as specified in paragraphs 9–2*c* and 9–3*e*. Sinks and toilets should be operable.

(3) Determine space allocations. Create a diagram for each cell and prisoner room during the initial assessment. Document the cell/room dimensions, configuration of fixtures and furnishings, and the designated occupancy for each. The diagram can be used as a tool during subsequent inspections to rapidly identify changes made to the facility. The actions described in subparagraphs (3)(a) through (d), below, are performed during the initial facility inspection and when major changes are made to the facility.

(a) Measure the interior dimensions of each cell, and verify the minimum criteria specified in paragraph 9–2*g* are met.

(b) For D-cells, calculate the total available square footage of floor space.

(c) For Army Correction System facilities, calculate the unencumbered space in single cells and the unencumbered space provided for each person in multioccupancy cells/rooms.

(d) Identify the type (detainee or prisoner) and number of confined persons who could be held in each cell according to the facility SOP, and determine if the space allocations meet the requirements specified in paragraphs 9–3*b–d* or 9–4*a*, as appropriate.

(e) Evaluate the type and number of persons who are confined in each cell/room at the time of inspection, and determine compliance with the prisoner space allocations specified in paragraphs 9–3*b–d*, or D-cell allocations specified in paragraph 9–4*a*, as appropriate.

(4) Assess illumination. At least once each year, conduct an illumination survey using a light meter to verify the minimum light intensity specified in paragraph 9–2*a* is provided. During monthly inspections—

(a) Look for damaged, missing, or inoperable light fixtures and bulbs.

(b) Use a light meter to reassess illumination output when all fixtures are operable and have functioning bulbs but the lighting intensity appears insufficient.

(5) Assess ventilation.

(a) For Army Correction System facilities, conduct a ventilation survey each year to verify an appropriate amount of outside air, as specified in paragraph 9–3*a*, is provided.

(b) Verify indoor temperature controls are within the parameters specified in paragraph 9–2*b*.

(6) Assess maintenance and sanitation of physical facilities, including prisoner recreation areas.

(a) Floors, walls, and ceilings are in good condition; free from damage, cracks, and mold/mildew.

(b) Plumbing fixtures are working, not leaking, and free from mineral buildup/scale.

(c) Showers and hand wash sinks are supplied with hot and cold water as specified in paragraph 9–2*d*.

(d) Facilities are kept clean and free of litter; floor drains are serviceable; waste receptacles are emptied daily.

(e) Toilet facilities and hand wash sinks are supplied with toilet paper, soap, and paper towels or a hot-air hand dryer. Common-use soap is dispensed in liquid or powder form; bar soap is limited for use by a single person.

(f) D-cells are thoroughly cleaned between detainee occupancies.

(g) Appropriate controls are applied for managing cleaning compounds to protect the guards and detained/confined persons.

i. Detainees/confined personnel should not have access to concentrated chemicals. At Army Correction System facilities, chemicals are stored locked and out of reach.

ii. Guards mix concentrated chemicals away from the confined person's reach if prisoners/detainees are detailed to clean cells, toilets, or common areas.

(h) There is no evidence of insect or rodent infestation. \*

(7) Assess the availability and condition of cell bedding. Bedding includes mattresses, pillows, blankets, and sheets.

(a) Bedding is provided as specified in paragraph 9–2*j*.

(b) Mattresses are free from tears and protruding springs.

(c) Mattresses are free from signs of infestation (for example, bed bugs), and any stains from urine, semen, blood, vomit, or other body fluids. Evaluate stains for the presence of blood or urine. \*

i. Use a blacklight to check for signs of human and rodent urine. Turn off interior lights and scan the blacklight over the mattress, bed frame, floor, and walls; human and rodent urine will fluoresce.

ii. Use a spray bottle to apply a light mist of hydrogen peroxide on surfaces (for example, mattress, bed frame, and floor) and stains when the presence of blood is suspected. Hydrogen peroxide reacts with blood to produce a bluish color change. This screening method is a presumptive test and may produce a false positive; the presence of other oxidizing chemicals or metals (for example, copper or iron) will also produce a bluish color. A negative test (for example, no blood is present) is indicated when there is no color change. If the test is positive, blood is probably, but not definitely, present. Luminol is more effective than hydrogen peroxide in detecting blood stains that are not readily visible and have not been adequately cleaned.

iii. The detention facility staff should take action to clean and disinfect areas potentially contaminated with blood or urine and to replace fabric mattresses if they are stained.

(8) Assess linen and laundry management.

(a) Bedding provided to detainees/prisoners is used by a single person and laundered before reissue.\*

(b) Soiled clothing and linens (for example, sheets and pillow cases) are laundered weekly. Evaluation of laundry operations should be conducted as part of the Army Correction System facility inspection and should evaluate appropriate controls to protect the fire-retardant properties of the bedding materials.

- i. Chapter 10 provides guidance for appropriate on-premises laundry procedures.
  - ii. If mattresses and bedding are laundered off-premises, identify the name and address of the facility providing support. Laundry contracts should include a provision for preserving the flame-retardant properties of the items.
- (c) Blankets, pillows, and cloth mattress pads are laundered every 3 weeks, whenever they become soiled, and before their use by a different person.\*
- (d) Plastic-covered mattresses are wiped clean and disinfected before use by a different person.\*
- (e) Clean linens stored at the facility are protected from sources of contamination.
- (9) Assess food service and availability of drinking water as specified in paragraph 9–6. Inspections of kitchen facilities (and food storage areas) at Army Correction System facilities are documented on DD Form 2973 (Food Operation Inspection Report) but are not entered in DOEHRS.
- (10) Assess controls for bloodborne pathogen hazards. Body fluids from detainees and prisoners may contain potentially infectious materials, such as HIV and Hepatitis B virus, which present a hazard to facility staff and other occupants. Army Correction System facilities provide onsite medical/dental care, which increase the potential for exposure to bloodborne pathogens. The potential for exposure also exists at detention facilities to a lesser extent. Body fluids and other potentially infectious materials include, but are not limited to, blood, semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva associated with dental procedures or injury, and unfixed tissues or organs (other than intact skin) from a human (living or dead). The following controls should be evaluated during the inspection:
  - (a) Availability of an SOP to provide guidance for cleaning any surfaces that are grossly contaminated with body fluids.
  - (b) Availability of regulated medical waste containers, to include contact information for disposal of this waste. Provisions for managing regulated medical waste are required at Army Correction System facilities, to include detention facilities.
  - (c) Availability of hand sanitizer and PPE such as disposable gloves, aprons, goggles, and surgical masks.
  - (d) Use of disposable gloves and other appropriate PPE during medical/dental treatments, body fluid sample collection, and cleaning of areas contaminated with body fluids. Healthcare providers must implement universal precaution standards.\*
  - (e) Proper hand washing with soap and water after contact with body fluids, to include after removing disposable gloves. Hand sanitizer may not be used as a substitute for proper hand washing.
  - (f) Enrollment of required facility staff in the installation Occupational Health Bloodborne Pathogen Program, and completion of bloodborne pathogen training. Consultation with installation Occupational Health is required to determine which personnel need to be enrolled.\*
- c. Recommendations and reporting.
  - (1) Document the inspection findings as specified in paragraphs 9–1f or g, as appropriate.
    - (a) Take pictures of any significant findings. Provide a caption describing the specific location and activities associated with each photo. Attach photos to the final report (for example, the inspection form or memorandum).
    - (b) Under no circumstance should pictures of a detained/confined person be taken. This applies even when a detained individual gives verbal permission.
    - (c) Immediately report observed or suspected instances of detainee/prisoner abuse to the Provost Marshal and the Chief of Environmental Health.
  - (2) Report fire and safety violations observed during the inspection to the installation safety office for further recommendation and action.
  - (3) Determine appropriate corrective actions for all findings, and specify a timeframe in which the action should be completed.
    - (a) Critical findings are expected to be corrected at the time of inspection.
    - (b) An unsatisfactory inspection rating is assessed if a critical finding remains uncorrected at the conclusion of the inspection.
    - (c) Evidence or suspicion of detainee/prisoner abuse renders the inspection rating as “unsatisfactory.”

(4) Provide copies of “unsatisfactory” reports to the installation medical authority, the Provost Marshal, and the installation commander.

**Table 9–2. Detention/confinement facility inspection guide**

<b>Inspection Item</b>	<b>Assessment Considerations</b>
Space allocation	<ul style="list-style-type: none"> <li>• Cell dimension</li> <li>• Number of cell occupants (specify detainee or prisoner)</li> <li>• Actual floor space per cell occupant</li> </ul>
Illumination	<ul style="list-style-type: none"> <li>• Light intensity (measured)</li> <li>• Light fixtures are present and operable</li> <li>• Missing/damaged bulb</li> <li>• Quality of light</li> </ul>
Ventilation	<ul style="list-style-type: none"> <li>• Outside air exchange rate</li> <li>• Ambient temperature in cells</li> </ul>
Physical facilities	<ul style="list-style-type: none"> <li>• Cell design (pipes, light/temperature controls, conduits)</li> <li>• Damaged floors, walls, ceilings, furniture, or fixtures</li> <li>• Cleanliness of floors, walls, toilet rooms, showers, and sinks</li> <li>• Cleaning frequency</li> <li>• Presence of insects/rodents</li> <li>• Waste management (in cells and toilet rooms)</li> </ul>
Hygiene facilities	<ul style="list-style-type: none"> <li>• Access to toilet and hand wash sink</li> <li>• Available hygiene supplies</li> <li>• Showers [correction facilities]</li> <li>• Hot and cold water (available; temperature)</li> </ul>
Bedding and laundry	<ul style="list-style-type: none"> <li>• Bedding provided (when required)</li> <li>• Fire-retardant materials</li> <li>• Mattress condition</li> <li>• Frequency of linen change and laundering clothes</li> <li>• Protection of stored linen</li> <li>• Laundry facilities or support services</li> </ul>
Food and drinking water	<ul style="list-style-type: none"> <li>• Available; how supplied?</li> <li>• Approved source (when applicable)</li> <li>• Safe food handling practices</li> <li>• Access to drinking water</li> <li>• Drinking water cross-connections</li> </ul>
Body fluid hazards	<ul style="list-style-type: none"> <li>• Bloodborne pathogen program status</li> <li>• SOP for cleaning gross contamination</li> <li>• Personal protective equipment</li> </ul>
Other	<ul style="list-style-type: none"> <li>• Abuse suspected/observed</li> <li>• Fire/safety</li> <li>• Male/female segregation</li> </ul>

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## CHAPTER 10

### LAUNDRY OPERATIONS

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#### Section I – GENERAL INFORMATION

##### 10–1. Laundry characteristics

*a.* Laundry operations occurring in garrison (fixed installations) or deployment settings either provide direct support to a facility such as a hospital or confinement facility, or they service the entire installation/camp. Generally, in garrison, only commercial-grade (industrial) equipment designed for large load management and durability is used in laundry operations. Commercial-grade equipment may be used in a deployment setting where laundry operations are contracted. In some cases, contracted laundry services employ residential-grade (household) washers and dryers, which are less durable than commercial equipment and may be less efficient at achieving the desired standards for washing and drying. Army Quartermaster units and field hospitals provide laundry services using tactical laundry systems.

*b.* Laundering is a process of removing soil from fabrics.

(1) The term “soil” as used in this chapter is a general term which includes dirt, stains, insects, insect eggs, microbial contamination from the user or external sources (for example, bacteria, viruses, bodily excretions), allergens (for example, dander from humans or animals), plant toxins (for example, poison ivy), and chemical residues (for example, fuel, oil).

(2) Soil on fabrics can cause odors or serve as a reservoir for odors.

*c.* There are four distinct goals for laundry operations:

(1) Prevention of disease.

(2) Prevention of contact dermatitis.

(3) Breaking the life cycle for insect infestation.

(4) Improving the welfare and comfort of Soldiers.

*d.* Most bacteria on linen, clothing, and textiles (hereafter referred to as “fabrics” or “laundry”) are contained in or shielded by soil. The laundering process significantly reduces the amount of bacteria on fabrics through physical removal of soil and by destroying the living cell.

*e.* Soiled fabrics are generally handled as ordinary laundry or as contaminated laundry. Items may be further separated for special processing based on the fabric’s heat lability (see *e*(3), below), or if the fabric is too delicate to undergo the heavy agitation and tumbling that occur during standard washing and drying.

(1) Ordinary laundry represents fabrics soiled through routine use and may include items fouled by bodily excretions or secretions (for example, feces, urine, blood, and vomit) from noninfectious persons. In a medical facility, items soiled with bodily excretions/secretions may be separated from other used laundry as an added control measure, but these items are not considered to be “contaminated” or “infectious” as characterized in *e*(2), below.

(2) Contaminated laundry is often referred to as “infectious” laundry and includes any item used with patients known or suspected to have an infection, including gastrointestinal infections such as Norovirus, diarrhea, tuberculosis, MRSA, Hepatitis A, and other notifiable (highly infectious) diseases (see paragraph 10–5).

(3) Heat-labile items are fabrics that are easily damaged when exposed to thermal disinfection temperatures. Fabrics possessing special properties such as fire retardancy, IR blocking, or insect repellency are typically included in the heat-labile category.

*f.* Although washing and drying using a standard laundry process significantly reduces the level of microbial agents on fabrics, it does not produce a sterile fabric. Sterile fabrics are used in medical treatment procedures such as surgical operations. Producing or evaluating sterile laundry is outside the scope of this chapter.

## 10-2. Laundry process

Steps in the laundry process may include some or all of the following actions: collecting or receiving, sorting, pre-wash, wash, rinse, extraction, drying, finishing, and reissue or return to customer.

*a. Standard laundry.* A typical laundry requires water, detergent (or alkali), and agitation to dislodge soil from fabrics. The soapy solution releases soil from the fabric, holds it in suspension in the wash water, and enables it to be removed when the wash water is drained and the fabric undergoes a rinse and extraction cycle. Heated water during the wash and rinse cycles further aids in the removal of soil from the fabric.

*b. Dry cleaning.* Dry cleaning is a laundering process that uses a chemical solvent instead of water to remove soil from fabric. The primary dry cleaning solvent used is perchloroethylene, also known as “perc,” or tetrachloroethylene. Detergents specially formulated for dry cleaning are used with the chemical solvent to remove soil from fabric.

(1) Perc is a highly stable, volatile (easily vaporized), and nonflammable solvent. It is a safer alternative to previously used volatile synthetic solvents, such as carbon tetrachloride and trichloroethylene, which are known to cause adverse health effects.

(2) Advances in dry cleaning technologies have found the use of liquid carbon dioxide combined with a detergent and placed under heavy pressure (several atmospheres) during the wash cycle is also a suitable alternative to using a chemical solvent. Specially designed machines intended for this application are required.

(3) Dry cleaning operations are prohibited from using petroleum solvents (kerosene or gasoline, for example) due to their highly flammable properties.\*

(4) Machines used for dry cleaning are combination washer-dryers; washing, extracting, and drying are conducted in the same machine. Chemical waste is minimized as the solvent is recycled through a filtration system and then reused. Heat applied to the fabric during the drying cycle volatilizes the remaining solvent from the fabric.

*c. Rinsing.* The rinse stage for water-based laundry and dry cleaning helps to remove the suspended soil from fabrics. Microbial contamination and insect infestations are also reduced, depending on the number of rinse cycles used and, if rinse water is recycled, the type of water treatment used.

*d. Drying.* Removing moisture from washed fabrics inhibits the growth of microorganisms that were not removed or destroyed during washing. Application of heat also destroys the cells of live microorganisms and insects (for example, bed bugs, lice), including insect eggs, that may remain on the fabric after washing. Fabrics that remain damp for 24 hours or longer promote the growth of mold and mildew.

## 10-3. Laundry supplies

*a. Detergent/soap.* Laundry detergent formulations are a mixture of builders, surfactants, and bleaches. Detergents may also contain organic enzymes which aid in breaking up soil.

(1) Detergents/soaps are alkaline, having a pH greater than 8.0. Alkali builders are chemicals that change the quality and properties of wash water, specifically hardness and pH, to allow detergents and bleaches to work more efficiently. Builders neutralize acids in the wash water by raising the overall pH to a value greater than neutral (7.0). Increasing the wash water pH helps to cut through dirt, grease, proteins, and other organic material by rupturing the chemical bonds of oil and fat molecules. The increased pH also results in the death of some pathogenic microorganisms.

(2) Surfactants are compounds that can loosen, emulsify, and suspend soil in solution. Surfactants lower the surface tension between two liquids or between a liquid and a solid, thereby increasing contact between the two. As a result, organic compounds such as oils and grease become soluble in water and are removed from the fabric. The separated soil is suspended in the wash water and eliminated during the drain and rinse cycles.

(3) Bleaches enhance laundry detergent performance by breaking down the molecular bonds in soil. There are two types of bleach products: chlorine-based and oxygen bleach. Bleach components of a detergent are generally “color-safe” and do not contain chlorine. Nonchlorine or chlorine-free bleaches are made of peroxides (that is, hydrogen peroxide, sodium percarbonate, sodium perborate) or other oxygen-releasing compounds such as oxalic acid and bromates. (See paragraph 10-3c for antimicrobial additives.)

*b. Sours.* Sours are acidic chemical compounds with a pH less than 7.0 (generally 3.0–4.0), which may be added during a wash or rinse cycle to return the water to a more neutral pH.

(1) Neutralizing the water pH increases the effectiveness of chlorine bleach, decreases degradation of fabric fibers, minimizes development of mineral stains on fabric, and reduces the potential for skin irritation.

(2) Mineral acid-based soaps, that is, those containing hydrochloric, sulfuric, or phosphoric acid, are prohibited for use due to their potential to form hazardous gases and byproducts that can be extremely harmful to both laundry workers and the environment.\*

*c. Antimicrobial additives.*

(1) Chlorine-based bleach is considered the most effective (and economical) laundry antimicrobial agent. Hypochlorite in chlorine bleach causes proteins to lose their structure; microbes are killed through the inactivation of proteins. The overall effectiveness of the chlorine bleach occurs when the water temperature is between 135°F (57.2°C) and 145°F (62.7°C) and the pH is between 4.0 and 5.0. When chlorine bleach is added to water, a variety of free chlorine components exist in equilibrium; the predominant form depends on the pH of the bleach-water solution. A pH between 4.0 and 5.0 produces the highest yield of hypochlorous acid, which has the most effective disinfecting properties. At a pH of 7.4, the concentration of hypochlorous acid and hypochlorite ions are about the same, and the disinfecting properties of the solution are significantly reduced. A water pH above 8.0 essentially renders the chlorine bleach ineffective as a disinfecting agent.

(2) Oxygen-based bleaches must be EPA-registered for proven effectiveness as a laundry disinfectant. At the time of this publication, only one product, AdvaCare,<sup>™</sup> has been found to be EPA-registered as a laundry disinfectant [Ecolab; Registration No. 1677-193]. This product is identified on the EPA's List H and is recommended for use in military field laundry systems and contracted operations when the use of chlorine bleach is not possible.

(3) The disinfection properties of peroxide bleaches are ineffective for laundry applications; therefore, using peroxide bleaches as a laundry antimicrobial additive is prohibited in hospitals, medical institutions, and other operations where infection preventive practices are required.\*

## Section II – LAUNDRY OPERATION PROCEDURES

### 10–4. Handling precautions and personal protection

*a. Handle soiled laundry items with a minimum of agitation and shaking to reduce the aerosolization of soil particles containing microorganisms, which may be inhaled by workers. At laundry turn-in points and other laundry collection points, signage or other suitable forms of information should be provided to direct patrons to—*

(1) Remove excessive soil, such as solid matter, feces, clotted blood, and vomit, from the fabric before submitting it to the laundry for processing.

(2) Roll or fold the most heavily soiled laundry into the center of the laundry bundle before placing it in collection bins/bags or submitting it for turn-in.

*b. Inform laundry workers of the potential hazards from sharp objects (for example, needles, broken glass, and razor blades). Operations at greater risk for generating laundry with sharp objects include medical operations, confinement facilities, and EPW camps. The risk of exposure to sharp objects in laundry occurs when workers are—*

(1) Handling or sorting bulk soiled laundry.

(2) Carrying laundry bags that were filled by patrons.

(3) Loading bags into the washing machine.

*c. Except as specified in paragraphs 10–5 and 10–6, ordinary laundry that is not generated in a medical facility and is soiled with blood or bodily excretions is not considered to be contaminated/infectious and does not require segregation from other soiled items before washing.*

*d. Hand washing is essential for minimizing worker exposure to infectious and other harmful agents and to reduce the potential for cross-contamination of clean items. Ensure laundry workers—*

(1) Wash their hands thoroughly with soap and water after handling soiled laundry and before handling clean laundry.

(2) Wash their hands each time disposable gloves are removed.

(3) Change disposable gloves, if worn, between tasks involving management of soiled and clean laundry.

*e.* Use an impermeable bandage to protect open cuts and any unhealed abrasions or burns on the hands and exposed portions of the arms.

*f.* Personal protective equipment.

(1) Use of full PPE is required when managing laundry designated/labeled as contaminated with infectious agents. Full PPE includes an N-95 face mask (filtering facepiece), gloves, gown, head covering, and eye protection.\*

(a) In a hospital setting, an N-95 filtering facepiece is worn in situations involving highly infectious patients and must also be worn by laundry personnel who manage the associated contaminated laundry. Use of N-100 masks is also appropriate but does not offer greater protection than the N-95 mask.

(b) Individuals identified as required to use an N-95 (or N-100) face mask must be enrolled in the Respiratory Protection Program IAW AR 11–34.

(c) Surgical-type face masks do not offer the same level of protection as the N-95 mask and may not be used as PPE when managing laundry from infectious persons. Surgical masks may be worn, but are not required, to reduce exposure to dust particulates.

(2) Wearing disposable gloves protects laundry workers from exposure to pathogens, allergens such as plant toxins (for example, poison ivy, poison oak), and chemical residues on clothing generated from maintenance or other industrial-type operations.

(a) The use of disposable gloves is required for laundry personnel operating in a medical facility, confinement facility, or managing laundry for EPW camps.\*

(b) If personnel are required to sort laundry prior to washing, additional PPE in the form of mask and gown should be worn.

(3) Change all PPE between handling soiled laundry and clean laundry.

(4) Remove all PPE (disposable and nondisposable) prior to taking a break and at the end of a work shift, before departing the laundry facility.

(a) Immediately discard single-use PPE when removed.

(b) Place nondisposable PPE such as gowns, head coverings, and eye protection in collection containers appropriately marked for soiled items. Soiled multiuse PPE requires laundering or cleaning and disinfection, as appropriate, at the end of a worker's shift and prior to use by another worker.

*g.* The medical authority or Command Surgeon should specify in a local written policy, as applicable, when laundry workers require immunizations against Hepatitis B and other diseases transmissible through contact with contaminated laundry or inhalation of aerosolized contaminants during laundry processing.

#### **10–5. Medical facilities and facilities used to quarantine potentially infectious persons\***

*a.* Contaminated clothing, linens, and other fabrics generated from persons diagnosed with rare viral hemorrhagic fevers (VHFs) such as Lassa, Ebola, or Marburg must be managed as Infectious Substances Category A and disposed at a permitted facility.

*b.* An individual is quarantined when designated as a “person under investigation.” A person under investigation is defined as a person who has both consistent signs and symptoms and risk factors as characterized by the installation medical authority and the Centers for Disease Control and Prevention.

(1) Clothing, linens, and other fabrics generated from persons in quarantine awaiting diagnosis are presumed to be contaminated until a negative diagnosis is made.

(2) Textiles from persons in quarantine are held until a diagnosis is made. If the diagnosis is negative, the textiles can be laundered as ordinary laundry. If personnel receive a positive diagnosis, the textiles then become “Infectious Substances Category A” waste.

*c.* Individuals returning from an operational area where there is increased risk of exposure to a severe acute viral disease, as specified in paragraph 10–5*a*, may, upon redeployment, be placed in an observational barracks to be monitored for symptoms. Persons in an observational barracks are not considered quarantined as characterized in paragraph 10–5*b* if they do not present with signs or symptoms and have not had direct contact with an infectious person or with body fluids from an infectious person.

(1) Laundry generated from nonsymptomatic persons in an observational barracks is treated as ordinary laundry.

(2) Laundry and bedding from individuals who develop signs or symptoms are placed in quarantine until a definitive diagnosis is attained. See subparagraph 10–5b(2) for appropriate disposition of the laundry and bedding.

*d.* Follow the Centers for Disease Control and Prevention guidelines for Ebola Virus Disease waste when managing textiles contaminated by severe acute viral disease agents. For more information, contact the APHC Waste Management Division at commercial 410-436-3651; DSN 584-3651; or toll free at 1-800-276-MIDI.

*e.* Use an EPA-registered hospital disinfectant with label claim for a nonenveloped virus (norovirus, rotavirus, adenovirus, poliovirus), for example, EPA List L products (see paragraph B–1b), to disinfect environmental surfaces (rooms, laundry bins/carts, and other nonporous surfaces).

#### **10–6. Norovirus in barracks\***

Manage laundry generated from barracks impacted by a suspected or confirmed Norovirus outbreak according to the following:

*a.* Unit policy. Unit commanders should—

- (1) Develop an SOP for handling contaminated laundry during an illness outbreak event such as Norovirus.
- (2) Inform barrack occupants of required procedures.
- (3) Ensure unit leaders supervise laundry activities until the unit reports no further illnesses.

*b.* Linen issue and turn-in facilities.

- (1) Apply the collection, turn-in, and processing procedures specified in paragraph 10–5b.
- (2) Disinfect collection bins and carts, table surfaces, and washing machine surfaces that are in contact with loose or bagged contaminated laundry after each use and at the end of the day (or each work shift if operations are continuous for 24 hours).

(3) For laundry services performed at a separate facility from the turn-in point, alert the contractor or courier receiving the contaminated/infectious laundry.

*c.* Barracks laundry room. Contaminated linens and personal clothing generated from barracks that do not offer central linen management may be washed in the barracks' common-use laundry room.

(a) Ensure cloth laundry bags used to transport contaminated items are washed with the contaminated laundry each time the bag is filled.

(b) Ensure laundry baskets and washing machine surfaces and control panels that were in contact with the infectious person's hands or contaminated laundry are disinfected immediately upon placing the laundry items in the wash.

*d.* Ensure an EPA-registered antimicrobial product for Norovirus (for example, EPA List G product) or a 1,000-ppm chlorine bleach solution is used to disinfect surfaces. Refer to appendix B for chlorine bleach mixing instructions.

#### **10–7. Norovirus at lodging facilities**

Laundry generated from a guest lodging facility having a known or suspected Norovirus outbreak is managed separately from regular laundry and as specified in paragraphs 10–6c and 10–8f.

*a.* Use a commercial laundry service that specializes in handling hospital infectious linens to launder items such as comforters and pillows that cannot be washed using existing facilities.

*b.* Ensure bags are marked as "CONTAMINATED" and the receiving commercial laundry is informed that the laundry was contaminated with Norovirus.

#### **10–8. Sanitary process controls**

All laundry operations, whether a field laundry or an institutional laundry at a hospital, prison, or other commercial operation, should be designed and organized to achieve sanitary control throughout the laundry process. Sanitation controls are designed to protect workers from aerosolized hazards, illness from contact with contaminated surfaces, and to prevent cross-contamination of clean items.

*a.* Carts and bins. Cross-contamination from carts and bins is controlled by—

- (1) Using separate carts or bins for handling soiled and clean laundry; or
- (2) Cleaning and disinfecting carts and bins after use with soiled items and before use with clean items.
  - (a) Establish an SOP for cart management and disinfection.

(b) Ensure a 500-ppm chlorine solution or other EPA-registered disinfectant is used (see appendix B).

*b. Collection.* Collection is the active process in which a laundry worker retrieves soiled clothing, towels, and linens from the point of use and transports them to the laundry facility. Collection typically occurs in hospitals and other healthcare settings, correctional facilities, and EPW camps.

(1) Handle laundry that is contaminated with blood and other body fluids using appropriate precautions as specified in paragraph 10–4. The risk of cross-contamination between soiled and clean laundry is nearly eliminated when appropriate precautions are followed during management of soiled fabrics.

(2) Ensure soiled laundry is bagged as close to the point of generation as possible.

(a) Mark the bags/bins at the collection points to indicate these containers' intended use (soiled items, contaminated items) and fabric type, as applicable, if there are a variety of fabrics with different processing requirements.

(b) Carts, bins, or hampers used to collect laundry items do not need to be covered while in use.

(c) Place laundry that is heavily soiled with blood and bodily excretions into leakproof, clear plastic bags, and double-bag it.

(d) Ensure bags are not overfilled and are tied securely prior to transport.

(3) Train the individuals who are responsible for placing items into laundry collection bags or containers regarding laundry handling protocols, to include ensuring there are no extraneous items in pockets, fastened to fabrics, or otherwise placed intentionally or unintentionally in the collection bag/cart that may present a sharps or physical hazard when handled or placed into washing machines.

(4) Provide a sufficient number of collection bins or carts in designated collection areas. Soiled laundry and filled laundry bags should not be placed directly on the floor at collection points or at the laundry processing facility.

*c. Transport.*

(1) Clean the carts used to transport soiled laundry after each use or at least daily when carts are under continuous use.

(2) Transport clean laundry in a manner that prevents contamination.

(3) Ensure commercial laundry contracts contain requirements for separation of clean and soiled laundry in transport vehicles to prevent cross-contamination.

*d. Receiving.* A receiving point is any designated room or area within the laundry facility where either soiled laundry from individuals, or bags and bins of soiled institutional laundry are delivered for processing. A receiving point may be a turn-in counter, a designated collection bin for individuals to drop off bagged laundry, or a large staging area with bins and carts for personnel to sort their items as they are turned in (for example, Central Issue Facility). Cross-contamination is likely to occur from soiled bins, carts, and the outside of bags containing soiled laundry. During the processing of loose laundry items, the hands, uniforms, face, and hair of the receiving personnel may become contaminated.

(1) Separate the receiving point from the return/reissue point in a manner that minimizes the potential for cross-contamination.

(2) Use different personnel to operate the receiving and reissue points, or implement administrative controls to prevent cross-contamination.

(a) Establish a written procedure (SOP) for administrative controls when the same individual is required to manage the receiving and reissue points. A recommended control is to schedule receiving and reissue operations on different days or at different times during the day.

(b) Laundry workers should wear a smock with sleeves when conducting receiving operations and should change into a clean smock when conducting reissue.

*e. Sorting.* Fabric manufacturers provide specific washing requirements for different types of fabric. Laundry workers may be required to sort fabrics when items are turned in as a mixed bundle/bag, to ensure the correct process (for example, dry cleaning versus standard laundry) and detergents are used, and the wash and rinse temperature and drying time and temperature are appropriate.

(1) When fabric sorting is required, ensure PPE is worn due to the increased potential for worker exposure to biological, chemical, or physical hazards.\*

(2) Ensure laundry workers do not sort laundry before washing when—

(a) Linens and garments are taken from hospital isolation rooms, are heavily soiled with blood or bodily excretions, or are likely contaminated with infectious agents. Fabrics must be collected pre-sorted (at point of use) as specified in paragraph 10–4a and subparagraph 10–5b(2).

(b) The same wash, rinse, and drying parameters will be applied to all of the laundry items contained in the bundle, and accountability of the type and number of items is not an issue.

(c) Personal laundry is received in a laundry bag and is subsequently washed, dried, and returned to the individual without removing articles from the bag for folding or accountability.

i. Individual mesh laundry bags should be provided to patrons for processing personal laundry. Laundry that patrons turn in using a mesh bag should be washed in the bag.

ii. When mesh bags are not available, patrons should submit their laundry in a plastic bag or fabric laundry bag. Laundry operators should open/untie the bag, place it into the washer, and gently empty the contents into the machine with minimum shaking or agitation.

f. Washing and drying. A significant number of microorganisms are removed from fabrics or destroyed during the washing process. Microorganisms are further destroyed or inactivated when a heated drying process is applied.

(1) Ensure the efficacy of the washing process discussed in paragraph 10–2 by maintaining proper load management and applying detergents suitable for the water temperature or dry cleaning process.

(2) Do not exceed the maximum load capacity specified by the manufacturer for the washer and dryer.

(3) Establish control procedures to minimize cross-contamination when removing cleaned items from washers that are not designed with separate doors for loading soiled laundry and extracting cleaned laundry.

(4) Apply an appropriate combination of wash water temperature, detergent, wash cycle time, and drying temperature to destroy or inactivate microorganisms in fabrics. A high wash temperature of at least 160°F (71°C) for a minimum wash time of 25 minutes (with detergent) significantly reduces the survival of microorganisms, insects, and insect eggs.

(a) Lower wash temperatures, combined with the use of a detergent formulated for cold water and the application of heated drying, as specified in subparagraph f(5), below, are also effective for reducing microbial contaminants.

(b) Laundering infested items in hot water (130°F/54.4°C) with detergent, followed by at least 20 minutes in a dryer set at 120°F (48.9°C) or above will kill all life stages (nymph to adult) of bed bugs and lice.

(c) Microorganisms in “dry clean only” fabrics are inactivated by drying with a medium high heat (160°F/71.1°C) for 10 to 15 minutes.

(d) When a hot water wash and heated drying are not available, applying steam or a hot iron to the fabric will also destroy insects and their eggs. **Note:** According to the Centers for Disease Control and Prevention, lice-infested items that cannot be laundered (for example, mattresses or furniture) may be quarantined for 2 weeks to kill the lice.

(5) The dryer temperatures required to destroy different bacteria and viruses vary.

(a) The flu virus and Norovirus are destroyed at temperatures above 170°F (76.7°C).

(b) For destruction of *Escherichia coli* (*E. coli*) and MRSA, the National Institutes of Health recommends using a hot water wash (140°F/60°C or above) with detergent for a minimum 10-minute cycle. When a hot water wash cannot be achieved, drying using the highest heat setting (typically 140°F/60°C or above) for a minimum contact time of 45 minutes and until the fabric is completely dry is also effective.

(c) Refer to paragraph 10–5b for washing and drying instructions for hospital laundry generated from persons diagnosed with rare VHF.

(6) Ensure all washed fabrics are thoroughly dried prior to storage or reissue.

(7) The application of chlorine bleach during a wash cycle assures an extra margin of safety for destruction of microbial contamination. A total available chlorine residual of 50–150 ppm is usually achieved by adding ¼ to ½ cup of bleach to the wash.

g. Pressing and folding. Prevent recontamination of clean laundry during pressing and folding operations by—

(1) Maintaining a physical separation between soiled and clean items.

(2) Using separate carts to manage soiled and cleaned items. When the same cart must be used, clean and disinfect the cart prior to using it with clean laundry.

(3) Covering carts that are used to move cleaned items or to hold laundry temporarily, prior to its immediate pressing or folding.

(4) Using separate tables for folding clean laundry. When the same table must be used for soiled laundry, clean and disinfect the table immediately after managing soiled items.

*h. Reissue/return.* Prevent recontamination of clean laundry during reissue/return to customers by—

(1) Storing clean laundry in a separate location or using separate shelving away from soiled items.

(2) Establishing a reissue point in a location that is separate from the receiving point.

(3) Scheduling separate days or times for receiving soiled items and reissuing/returning clean items when the laundry exchange must be performed using the same processing point. Establish a written procedure to protect against cross-contamination.

(4) Ensure storage locations are dry and free from soil and other substances that can contaminate clean laundry.

#### **10–9. Facility sanitation**

*a. Maintain laundry facilities in a clean and sanitary condition.*

(1) Clean floors daily using a dustless method.

(2) Clean/dust horizontal surfaces, walls, and fixtures at a frequency that prevents accumulation of dust/lint and development of mold and mildew.

(3) Provide trash receptacles, and empty them daily.

(4) Maintain premises free from standing water.

*b. Maintain premises free from rodents and insects.*

*c. Equip facilities with at least one hand wash sink that is readily accessible to personnel handling soiled laundry. Maintain a supply of hand soap (liquid or powdered form) and paper towels, and a trash can.*

*d. Ensure all plumbing fixtures and washing machines that are connected to the potable water system are equipped with backflow prevention devices and do not create a potential cross-connection with the sanitary sewer.*

(1) Apply an air gap that is at least 1 in., or is twice the diameter of the waste discharge line, between the waste water discharge line and the drain if the lines are not directly plumbed to the sanitary sewer.

(2) Ensure hoses used for general area cleaning are not connected to a potable water system when not in active use.

*e. Prevent personnel from eating in laundry processing areas; drinking water from a closed container (for example, a bottle with cap) is appropriate. Provide a designated break area that is away from both soiled and clean laundry.*

#### **10–10. Ventilation**

Laundry processes may generate excessive heat, release noxious vapors, and result in excess moisture throughout the facility. Additionally, dirt, mold, yeast, bacteria and other microbes, animal and human dander, and some insect eggs that are attached to soiled laundry can easily be released into the air, exposing laundry workers to allergens and possible infectious materials and resulting in contamination of other areas of the laundry operation.

*a. Conduct a ventilation survey as part of the preopening inspection for new or renovated laundry facilities operating in the garrison setting. Adequate local exhaust and area (dilution) ventilation will control occupational exposures to heat and chemicals and is essential to control indoor mold growth due to high moisture conditions.*

*b. The direction of air flow within the laundry facility should move from the clean side of the operation to the soiled side. The soiled side includes receiving, sorting, if performed, and loading laundry into washers. The clean side begins where laundry is either put into an extractor or into the dryer and includes pressing, folding, and the reissue or pick-up point. During routine inspections of garrison and field laundry operations, use a smoke tube to verify the direction of air flow.*

**10–11. Worker safety**

*a.* Preventive Medicine inspection of laundry operations includes general observation of conditions that may present a safety hazard.

(1) Hearing-protective equipment and area signage are required in operations that produce sound pressure levels greater than 84 dB(A). A noise level survey should be conducted during the initial inspection of an operation and when new equipment is introduced to the operation.

(2) Unclean facilities exhibited by an excess buildup of lint/dust on walls, fixtures, or dryer vents presents a fire hazard. Fire extinguishers should be serviceable and readily available.

(3) Exposed steam and hot water pipes should be insulated to protect workers from burn hazards.

(4) Operational areas where there is heavy foot traffic should be protected from trip hazards from electrical cords, water supply/discharge hoses, and any other condition that creates an uneven surface.

(5) Chemical handling and storage should be conducted IAW material safety data sheets.

*b.* Fire and safety violations observed during the inspection are reported to the installation safety office or designated fire/safety representative for further recommendation and action.

**Section III – INSPECTING LAUNDRY OPERATIONS****10–12. Inspection**

*a.* Evaluation of laundry operations requires an understanding of laundry processes and the flow of laundry through a facility as specified in paragraphs 10–2 and 10–8, respectively.

*b.* The inspection requires assessment of laundry processes for efficacy in removal of soil and destruction of microbes and insect infestations, sanitary control of facilities, worker hygienic controls, and worker safety.

(1) A Department of the Army form for documenting laundry operation inspections has not been developed. The laundry operation inspection guide provided in table 10–1 serves as a general reference for conducting inspections.

(2) Inspection reports are archived in DOEHS as specified in chapter 1, subparagraph 1–9j(3).

**Table 10–1. Laundry operation inspection guide**

Item Description	Reference Paragraph
Sanitary Facilities: <ul style="list-style-type: none"> <li>• Clean premises; no pests; no mold/mildew; no standing water</li> <li>• No cross-connections</li> <li>• Hand wash sink(s) accessible; properly supplied</li> </ul>	10–9
Hygienic Controls and Personal Protection: <ul style="list-style-type: none"> <li>• Unhealed cuts/skin abrasions protected</li> <li>• Proper handwashing and disposable glove use</li> <li>• Appropriate PPE worn; clean/disinfected between users; not worn outside of laundry operations</li> <li>• Designated break area; no eating in laundry processing area</li> </ul>	10–4.e.
	10–4.d.
	10–4.f.
	10–9.e.
Laundry Processing: <ul style="list-style-type: none"> <li>• Minimum agitation of soiled laundry by workers</li> <li>• Contaminated laundry presorted/segreated at point of use; properly labeled; leakproof bags used</li> <li>• Volatile synthetic/petroleum solvents not used in dry cleaning operations</li> <li>• Wash/drying machine load management; not overfilled</li> <li>• Appropriate detergent/solvent used for wash cycle temperature</li> <li>• Appropriate washer and dryer cycle time and temperature applied</li> <li>• Appropriate laundry antimicrobial (if used)</li> <li>• Fabrics are completely dry when removed from dryers</li> </ul>	10–4.a.; 10–8.e.(2)(c)
	10–8.b.
	10–2.b.(3)
	10–5.b.(4)–(6); 10–8.f.(1); 10–8.f.(3) & (4)
	10–3.c.
	10–5.b.(6); 10–8.f.(5)
Operational Sanitation Controls: <ul style="list-style-type: none"> <li>• Separate bins/carts used for soiled and clean items; SOP for management and disinfection</li> <li>• Soiled and clean areas of the operation are separated</li> <li>• Appropriate antimicrobial used for surface disinfection</li> </ul>	10–5.b.(2) & (6); 10–8.a., b., c.
	10–8.d. g., & h.
	10–5.b.(7); 10–6.d.; 10–8.a.(2)(b)
Ventilation: <ul style="list-style-type: none"> <li>• Provided; adequately controls vapor exposures, heat, and humidity</li> <li>• Direction of air flow moves from clean to soiled side of the operation</li> </ul>	10–10
Safety: <ul style="list-style-type: none"> <li>• Noise hazards; PPE; signage</li> <li>• Fire extinguishers on hand and accessible</li> <li>• Electrical hazards</li> <li>• Trip hazards</li> </ul>	10–11

## CHAPTER 11

### BODY ART OPERATIONS

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#### Section I – GENERAL INFORMATION

##### 11-1. Body art practices

*a.* Body art involves the permanent or nonpermanent application of art on the human body. Forms of body art include, but are not limited to, tattoos, body piercings, scarification (such as branding, laser etching, and scalpelling), body etching (impressing pictures onto the skin using an etching acid), and body painting. Most forms of body art involve invasive procedures in which the skin is broken and the application is penetrated into the dermis (living tissue layer of the skin).

*b.* Skin and bloodborne diseases can be transmitted through either direct or indirect contact with items such as towels, needles, razors, and piercing guns during body art applications. Skin diseases of medical significance include ringworm, impetigo, and staphylococcus infections. Invasive procedures further increase potential exposure to bloodborne diseases such as HIV, Hepatitis B, and Hepatitis C. Improper procedures during the administration of body (and ear) piercings can result in permanent injury to nerve tissue, muscle tissue, and organs; piercing the upper ear or cartilage can result in infections that are difficult to treat. Persons with heart disease or other medical conditions are also more susceptible to infections such as endocarditis (bacterial infection of the heart valve) if they undergo an invasive procedure without taking antibiotics in advance.

*c.* Except for ear piercing, as specified in AR 215-8, fee-for-service tattoo operations and other body art operations are not authorized on Army installations (see para 11-7). The restriction is applied primarily due to limited regulatory guidelines which vary among the states for the sanitary control of body art operations. Variations in state licensing criteria produce inconsistent worker training and qualifications, thereby increasing the potential for an adverse health impact to customers at some Army installations.

*d.* The criteria contained in this section are considered baseline guidance for the sanitary operation, control, and monitoring of ear piercing (or other body art) operations. Host nation, State, or local requirements may drive modification to this guidance.

##### 11-2. Body art restrictions\*

*a.* Piercing of the ear cartilage and other parts of the body is strictly prohibited.

*b.* Ear piercing using reusable applicators or needles is prohibited. This practice requires strict controls associated with instrument disinfection and handling precautions that are not discussed in this chapter. Consultative support for approving the use of reusable applicators should be obtained from the region's Public Health Command. Consultative support is also available through the U.S. Army Public Health Center, Veterinary Services and Public Health Sanitation Directorate, by calling toll free at 1-800-222-9698, COM 410-436-2475, DSN 584-2475; or by emailing [usarmy.apg.medcom-aphc.mbx.environmentalhealthsanitation@mail.mil](mailto:usarmy.apg.medcom-aphc.mbx.environmentalhealthsanitation@mail.mil).

*c.* Commanders are discouraged from allowing State-licensed Soldiers to perform body art operations within their unit (or barracks) and are encouraged to consult with Preventive Medicine for guidance. Commanders who approve the practice within their units should—

(1) Ensure sanitary controls and operational restrictions, as specified in this chapter, are delineated in a command policy; and

(2) Provide appropriate oversight of approved body art activities to ensure compliance.

*d.* Preventive Medicine may be directed by the installation commander or designated representative to inspect privately owned body art operations (off-post) for possible inclusion on the installation list of "Off Limits Establishments."

(1) If requested, the Preventive Medicine representative should contact the local health department and conduct a joint facility evaluation IAW the criteria in this chapter and any local codes or regulations that govern body art operations.

(2) Preventive Medicine personnel document their findings in a memorandum for the installation commander, identify deficient controls within the operation that could have an adverse impact to Soldier health, and recommend the establishment be placed “Off Limits” if controls are found to be inadequate.

## **Section II – EAR PIERCING OPERATIONS**

### **11–3. Physical facilities**

*a.* Equip the ear piercing facility with a hand wash sink that is properly plumbed to an approved sewage system.

(1) A hand wash sink exception may be approved by Preventive Medicine if—

(a) The piercing concession is located in close proximity to a handwashing facility that is readily available for piercing employee use; and

(b) The conditions specified in subparagraph 11–5*b*(2) are applied.

(2) Supply hand wash sinks with hot and cold water, soap, disposable paper towels, and a waste container.

*b.* Provide a minimum light intensity of 50 foot candles (540 lux) at ear piercing stations.

*c.* Provide a sanitary waste receptacle with lid.

### **11–4. Operator qualifications**

Ear piercing operators are required to meet the following licensing and training criteria:

*a.* Licensing. Personnel conducting ear piercing are trained or certified in ear piecing practices as specified in this section.\*

(1) In States or OCONUS locations where ear piercing is regulated, operators must meet State or host nation requirements for licensing, medical examinations, and training. Preventive Medicine should review State licensing and renewal requirements online, or consult with the State or local health department. The piercing operator’s license is reviewed during routine Preventive Medicine inspections.

(2) The contracting organization (AAFES) is responsible for determining licensure or operator qualifications before an individual begins providing ear piercing services. Qualifications are based on formal criteria established by the State, the certifying nation’s Ministry of Health, or other regulatory office. For OCONUS operations, the contracting organization’s contracting officer will obtain operator-training certificates that are translated into English. A copy of both the translated and original certificate must remain on file at the piercing concession for review by Preventive Medicine during inspections.

*b.* Bloodborne pathogen training. Operators complete Occupational Safety and Health Administration bloodborne pathogen training (or equivalent) according to 29 CFR 1910.1030 prior to providing ear piercing services.

(1) Training is completed within 90 days of employment and at least annually thereafter, within one year of the previous training.

(2) For OCONUS operations, equivalent host nation or vendor-provided bloodborne pathogen training is authorized and must be provided by a person qualified to execute the training. The installation medical authority or Preventive Medicine should review the contents of host nation or vendor training to determine acceptability.

(3) The ear piercing concessionaire provides a copy of the training certificate to the concession manager, and a copy of the training record is retained at the facility where the concessionaire is located.

*c.* Health and sanitation. Operators are familiar with the health and sanitation criteria provided in paragraphs 11–5 and 11–6.

**11–5. Operator health and hygiene****a. Employee health.**

(1) Health assessment. The installation medical authority determines the need for establishment of formal requirements and confirms it in a written policy regarding—

(a) Employee pre-employment medical evaluations to ensure freedom from communicable disease, including HIV status;

(b) Employee examinations before returning to work after illness; and

(c) Special examinations (for example, Tuberculosis testing).

(2) Immunization. Piercing employees complete the Hepatitis B vaccination series and boosters prior to and throughout their employment.

(3) Illness. Employees may not work when ill with communicable disease, diarrhea, vomiting, sore throat with fever, exposed skin sores, burns, or infections, or any other health condition in which disease agents may be transferred to a patron.\*

**b. Hygienic practices.**

(1) Clothing. Employees must keep their person and clothing clean when attending patrons.

(a) Wearing a smock or uniform is recommended.

(b) Change smocks, uniforms, or clothing daily.

(2) Handwashing. Employees wash their hands with soap and water after eating, smoking, using the restroom, or taking a break. Handwashing should also be conducted after each patron piercing. When it is not feasible to equip an ear piercing concession with a hand wash sink, use of a hand sanitizer in lieu of handwashing is authorized under the following conditions:\*

(a) An SOP containing proper hand sanitizing procedures is developed and maintained at the ear piercing concession, and personnel are trained on proper procedures.

(b) Ear piercing is performed using a single-use gun applicator as specified in paragraph 11–6h.

(c) The ear piercing operator properly sanitizes his/her hands immediately prior to beginning a piercing treatment. The hand sanitizer must contain a minimum of 60-percent ethyl alcohol by volume as the antimicrobial agent.

(d) Disposable gloves are worn during an ear piercing treatment.

(e) The ear piercing operator properly sanitizes his/her hands as specified in subparagraph (2)(c), above, immediately after removing the gloves at the conclusion of the piercing treatment.

**11–6. Sanitary controls and procedures**

**a.** Ensure employees and patrons do not eat or drink within the perimeter of the ear piercing concession or at ear piercing stations.

**b.** Use FDA-approved and EPA-registered products for skin applications and equipment/surface disinfection.

(1) Foreign brands may be used at OCONUS locations when approved by Preventive Medicine. Disinfectants must possess bactericidal, fungicidal, and virucidal activity.

(2) Chlorine bleach solutions prepared at a 1000-ppm FAC concentration may be used to wipe residual blood from equipment. A 500-ppm FAC solution may be used for general disinfection of surfaces. Bleach solutions are prepared fresh daily, and the concentration is verified with an appropriate chlorine test kit or paper.

(3) Appendix B provides additional guidance for antimicrobial agents.

**c.** Develop a written SOP for sanitary controls and practices, consistent with the requirements of this chapter, and provide a copy at the piercing concession for employee use.

**d.** Store equipment and supplies in a clean, dry drawer or covered container.

**e.** Prior to initiating the piercing process, examine the patron's earlobes for signs of infection.\*

(1) Piercing may not be performed if the patron shows any evidence of infection or inflammation.

(2) Feel the lobe for cysts; piercing through a cyst may cause infection and is prohibited. Cysts are suspected when the lobe has a hard lump that moves when pressed. Scar tissue does not move when pressed; piercing through scar tissue is authorized.

**f.** Perform hand hygiene as specified in subparagraph 11–5b(2).

g. Clean the patron's earlobe(s) using an FDA-approved disposable alcohol wipe (or other approved skin antiseptic).\*

(1) Wipe the area of the client's skin to be pierced (front and back of the earlobe) immediately before and after the piercing.

(2) Use a fresh antiseptic wipe before and after the piercing.

h. Use an individually wrapped, pre-sterilized, single-use (disposable) gun applicator with sterile studs to conduct the ear piercing.\*

(1) Do not use the applicator if the packaging is damaged.

(2) Discard the applicator after use on a single patron. Single-use applicators are not managed as regulated medical waste and may be disposed as ordinary waste.

i. Provide a written instruction to patrons for conducting after-piercing care, including recognizing signs of infection and instructions to seek medical attention if an infection occurs.

### **Section III – OTHER BODY ART OPERATIONS**

#### **11–7. Hazardous conditions**

The following practices should be strictly prohibited for command-approved body art practices in the barracks/unit:

a. Ink modification. This involves the preparation of hand-blended colors in which the tattoo artist mixes drinking, distilled, or sterile water with tattoo ink or mixes tattoo inks from different lot numbers or colors. Diluting the ink with water increases the risk of contaminating the ink. Mixing inks from different lot numbers removes traceability if there is a problem with a contaminated lot.

b. Application of henna (or mehndi) tattoo. Henna, a coloring that is made from a plant, is approved only for use as a hair dye, not for direct application to the skin. When used for body art, henna is applied to the skin surface and creates a temporary stain. Pure henna stains the skin in some color range between orange, red, burgundy, brown, or coffee. Achieving a darker color requires mixing ingredients that are often associated with adverse health effects.

(1) "Black henna" contains additives such as PPD or "coal tar" and solvents which may cause allergic reactions in some individuals. Signs that indicate an individual is suffering an allergic reaction to PPD may include irritated, reddened skin, later leading to blistering, scarring, and contact dermatitis. In the long term, people who have been sensitized to PPD have a risk of reacting to products containing lower concentrations of PPD, such as hair dye, for the rest of their lives.

(2) Henna allergy, known as naphthoquinone sensitivity, can cause tightness of the chest, itching, and wheezing.

(3) Hazardous chemicals and substances added to darken the henna may include solvents, camphor, and walnut powder. Solvents such as lighter fluid, gasoline, acetone, turpentine, or dry cleaning fluid can seep into the bloodstream. Reactions to camphor or camphor-containing white flower oil include nausea, dizziness, and intoxication in both the artist and client. Allergic reactions to walnut powder can range from development of a rash to anaphylactic shock.

c. Body etching. Body etching is similar to tattooing in that it is the art of producing and impressing etched designs of pictures on the body with etching acid. Laser-etched tattoos involve burning the image onto the skin. Body etching is often irreversible and poses the same health risks as tattoos.

d. Scarification. In the process of body scarification, a permanent body modification occurs when scars are formed after cutting or branding the skin. Scarifying involves scratching, etching, or other superficial cutting or incision where designs, pictures, or words are permanently formed into the skin.

**11–8. Body art operation controls**

Commanders who allow licensed unit members to practice body art (for example, tattooing or piercing) within their units should ensure the following controls are applied in addition to those specified in paragraphs 11–4 through 11–6:

*a.* Sanitary conditions of general work areas should be maintained at all times. Floors should be cleaned daily using a push broom or vacuum with HEPA filtration, and then wet mopped using a commercial floor-cleaning product.

*b.* Without the written consent of a licensed medical practitioner, body art must not be performed when there are visible sores, burns, rashes, boils, or pimples present on the area of the skin to be treated.

*c.* Body art operators must wipe the area of the client's skin to be treated, both before and after a body art treatment, using an approved skin antiseptic.

*d.* Tattoo artists must—

(1) Use only inks approved for tattooing from certified manufacturers. Cosmetics, including temporary tattoo products, that do not comply with restrictions on color additives are considered adulterated and are illegal in interstate commerce.

(2) Use only one ink-lot per color and receptacle for each client.

(3) Record the client's name, address, phone number, and the ink colors, manufacturer, and lot numbers used for each tattoo. These are required in the event of a customer's adverse reaction to inks or other chemicals.

*e.* Instrument and equipment disinfection.

(1) After each client, disinfect all skin-contact areas of tables, chair headrests and armrests, as applicable, using a 500-ppm FAC chlorine solution that is prepared fresh daily, or another EPA-registered disinfecting product.

(2) Use a 1000-ppm FAC chlorine bleach solution, alcohol, or other EPA-registered disinfectant to clean and disinfect multiuse instruments that are contaminated with blood.

(3) After each client, use an autoclave IAW the manufacturer's specifications to sanitize reusable needles (for example, tattoo guns).

*f.* Linens and disposables.

(1) Use fresh laundered towels or individual disposable towels for each client.

(2) Only use disposable razors for shaving areas prior to tattooing. Discard razors after use on a single client.

(3) Use of disposable sterile needles is recommended over multiuse needles.

(a) Discard disposable needles after use on a single client and whenever sterility of the needle is questionable due to damaged packaging.

(b) Provide a sharps container for collection of disposable needles, and manage it as regulated medical waste.

(c) Coordinate with the medical authority, Preventive Medicine, or Command Surgeon, as appropriate, for disposal of regulated medical waste.

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## CHAPTER 12

### ICE MACHINE SANITATION

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#### 12-1. Background

A surveillance (sampling) plan to monitor ice machine sanitation is generally not implemented by Preventive Medicine for ice machines located outside of a food establishment and used to support administrative buildings, lodging facilities, military units, and other locations.

*a.* The ice machine maintenance and sanitation criteria specified in TB MED 530/NAVMED P-5010-1/AFMAN 48-147 IP —

- (1) Apply to food establishments, including hospital dining facilities and child care center kitchens.
- (2) Do not apply to ice machines located outside of food operations, such as those located at hospital wards, unit barracks, or other facilities.
- (3) May be incorporated into an organization's SOP for maintaining ice machines.
  - (a) Provision 4-401.12 addresses locating ice machines in clean areas that do not present a risk for contamination.
  - (b) Provisions 4-503.11 and 4-602.11(E)(4) address ice machine cleaning and maintenance.
  - (c) Provision 4-503.12 discusses operator handling restrictions.

*b.* Building coordinators or representatives of the units/organizations that occupy the building are responsible for maintaining and monitoring the sanitary control of bulk ice-producing equipment located in their facilities.

*c.* The terms "ice machine" and "ice-producing equipment" as used in this chapter are intended to apply to equipment that is directly plumbed to a potable water system, and portable countertop systems that produce bulk ice in a holding bin or chamber until dispensed manually or mechanically. This chapter does not apply to food refrigerators that have an integrated ice-production capability.

*d.* Unsanitary ice machines and ice contamination typically result from poor hand hygiene of persons using the machine and poor utensil (scoop) management. Other conditions that result in an unsanitary or unsafe ice include—

- (1) Mineral buildup (scale) and mildew. Scale and mildew will develop over time in the ice machine bin and around the dispensing mechanism.
- (2) Plumbing cross-connection.
  - (a) A cross-connection with the sewer system is sometimes created when the condensation line from the ice machine is extended into a floor drain without an air break or backflow prevention device.
  - (b) The ice machine should be emptied, cleaned, and sanitized if the potable water supplying the machine is found to be contaminated with coliform bacteria or a "boil water notice" is issued by the installation DPW.
- (3) Dust, dirt, and moisture settling in the ice reservoir or on the dispensing nozzle.

*e.* The information presented in this chapter may be used as a guide for developing local controls and procedures for managing ice machines and implementing a sanitation surveillance plan for the installation.

#### 12-2. Administrative controls

Ice machine controls and maintenance procedures should be established in a written SOP for each building, unit, and organization where ice machines are operated.

*a.* Tenant units and organizations should designate an ice machine coordinator for each building or area where ice machines are located. The functions of the ice machine coordinator include—

- (1) Developing the ice machine SOP.
- (2) Ensuring all ice machine users have access to the SOP and are familiar with the safe/sanitary handling procedures and cleaning procedures outlined in the SOP.
- (3) Reporting ice machine plumbing and mechanical problems and following up on work orders.
- (4) Establishing a cleaning schedule for the ice machine.
- (5) Monitoring the use and cleanliness of the ice machine.

- b.* Preventive Medicine assists ice machine coordinators, upon request, when developing their SOP.
- c.* Contents of the SOP should address—
  - (1) Personnel who are authorized to retrieve ice from the ice machine.
  - (2) Rules for using the ice machine:
    - (a) Wash hands before scooping from the bin.
    - (b) Use only the scoop provided with the machine.
    - (c) Store the scoop in the designated storage tray or inside the ice bin with the handle sticking out above the ice.
    - (d) Immediately report any signs of contamination, such as debris or any objects (other than the scoop) left inside the ice bin, to the ice machine coordinator.
  - (3) Cleaning frequency.
    - (a) Ice machines should be cleaned and sanitized at a frequency recommended by the manufacturer.
    - (b) In all cases, ice machines should be cleaned and sanitized at a frequency that precludes the development of mineral scale or mildew inside the bin and on the dispensing mechanism.
    - (c) Ice machines that are used by many individuals and require the use of a utensil to scoop the ice from the bin should be cleaned at least every 30 days or a frequency that is based on microbial analysis as specified in paragraph 12–5c.
  - (4) Cleaning procedures.
    - (a) Ice machines should be cleaned following the procedures specified in the equipment’s operator’s manual provided by the manufacturer.
    - (b) When cleaning guidance is not available from the manufacturer, the procedures outlined in paragraphs 12–3 or 12–4 should be applied, as appropriate.
    - (b) Self-dispensing machines that are contained in a closed system typically require minimal operator cleaning and maintenance. Sanitizing the ice bin may not be needed since hands and debris cannot enter the system. The operator’s manual should address the dispensing chute, the holding bin, and, if applicable, flushing water supply lines. Development of biofilm in the supply lines is the greatest concern when plastic tubing is used rather than copper. Individuals who are responsible for maintaining (cleaning/sanitizing) the machine must be trained on the proper manufacturer’s procedures for the specified machine.

### **12–3. Cleaning ice machines with removable ice-contact surfaces**

- a.* Turn off or unplug the machine.
- b.* Turn off the water supply to the machine.
- c.* Empty and discard all remaining ice in the machine.
- d.* Drain all water from the machine.
- e.* Remove all ice-contact parts from the machine.
- f.* Wash all ice-contact parts in hot, soapy water.
  - (1) Use a soft brush to remove rust, mildew, and mineral scale from metal parts.
  - (2) Nylon and rubber parts, including gaskets and O-rings, should be washed using a cloth.
- g.* Rinse thoroughly in clean water.
- h.* Sanitize all cleaned parts by immersing in a 100-ppm chlorine solution for 15 seconds. Use a spray applicator or wiping cloth to apply the bleach solution to large parts that cannot be immersed.
  - (1) Refer to appendix B for chlorine bleach mixing formulas.
  - (2) Use chlorine test paper to verify the prepared bleach concentration. Concentrations at 200 ppm or above must be diluted further, or the sanitized parts must receive a second clear water rinse after the sanitizing procedure.
  - (3) Allow all sanitized parts to air dry.
- i.* Thoroughly wash your hands before handling sanitized parts.
- j.* Reassemble the machine. Wipe all exposed surfaces with the 100-ppm sanitizing bleach solution, and allow it to air dry.
- k.* Restart the machine. Discard the first batch of ice produced.

*l.* If bacterial sampling of the machine was conducted prior to cleaning, and the sample was positive for coliform—

- (1) Allow the bin or reservoir to fill with ice and then conduct additional bacterial sampling on the ice and water supply.
- (2) Place the ice machine off limits to users by posting a sign to that effect.
- (3) If the bacterial analysis is negative for coliform, the ice may be used for consumption.
- (4) If the bacterial analysis is positive for coliform, repeat the cleaning, sanitizing, and sampling specified above.

#### **12-4. Cleaning ice machines with nonremovable ice-contact surfaces**

*a.* Machines with nonremovable ice contact surfaces that are NSF/ANSI Standard 12-listed are designed for sanitizing solutions to circulate through the machines as part of a clean-in-place procedure.

- (1) The NSF/ANSI marking will be indicated on the machine's data plate.
- (2) Recommended cleaning procedures should be obtained from the manufacturer. In some cases, the manufacturer may state that chlorine solutions must not be used during the clean-in-place procedure.

*b.* Apply the following procedures when manufacturer's cleaning instructions are not provided:

- (1) Remove any residual ice from the ice reservoir and chutes.
- (2) Turn off the machine and allow remaining ice in the machine to melt.
- (3) Turn the electricity on, and drain sufficient water through the machine to flush any residual water and dirt from the machine.
- (4) Run the machine through two or three freezing cycles, and discard the ice.
- (5) Turn off the water supply.
- (6) Drain the water and any ice inside the system.
- (7) Circulate a warm water cleaning solution through the machine for at least 2 minutes, and then drain the system.
- (8) Circulate clean potable water for 2 minutes, and then drain the system.
- (9) Circulate a sanitizing solution.
  - (a) Use a quaternary ammonia compound approved for food equipment (for example, "safe for use with food") following the manufacturer's instructions; or
  - (b) Use a 100-ppm chlorine solution prepared in a 3-gallon volume. See table B-1 for appropriate bleach-mixing formulas.
  - (c) Run the sanitizing solution through the machine for at least 2 minutes, and then drain the system.
- (10) Wash, rinse, and sanitize any storage bins as specified in paragraphs 12-3*f* through *h*.
- (11) Return the drain valves to their normal position, and start the machine.
- (12) Discard the first ice produced.

(a) The ice machine is ready for use if the machine was cleaned as part of a routine cleaning procedure rather than the result of a positive bacterial analysis result.

(b) The ice machine may not be used at this time if the machine was cleaned as a result of ice sampling that yielded a positive coliform bacteria result. Follow the instructions in paragraph *c*, below.

*c.* Use the following procedure if bacterial sampling of the machine was conducted prior to cleaning, and the sample was positive for coliform:

- (1) After discarding the first ice produced, allow the bin or reservoir to fill with ice, and then conduct additional bacterial sampling on the ice and water supply.
- (2) Place the ice machine off limits to users by posting a sign to that effect.
- (3) If the bacterial analysis is negative for coliform, the ice may be used for consumption.
- (4) If the bacterial analysis is positive for coliform, repeat the cleaning, sanitizing, and sampling specified in subparagraphs *b*(1)–(12), above.

**12–5. Sanitation surveillance**

Results of ice machine sampling may be used to assist facility operators in establishing an appropriate cleaning frequency for their ice machines and may help Preventive Medicine identify situations in which unsanitary ice is being used and may present a health risk.

*a.* Heterotrophic plate count (HPC) is the preferred analytical method for assessing ice machine sanitation.

(1) HPC analysis for ice provides an indication of ice machine sanitation and is not intended to measure regulatory compliance of the water supplying the machine.

(2) Heterotrophic bacteria are not pathogenic, but pathogenic organisms such as Coliform could be present in the HPC results.

(3) Under sanitary conditions, HPC results should be below 200 colony-forming units (CFU) per milliliter (mL) of sample. An HPC value of 500 CFU/mL is the upper limit of acceptance used by the U.S. Army Food Analysis and Diagnostic Laboratory when testing bottled water.

(4) Elevated HPC values do not directly relate to health risk. When values are high, further investigation and testing are recommended for more specific target organisms such as Coliform and *E. coli*.

*b.* The best method for determining if there is a breakdown in hygienic controls is to conduct regular monitoring of HPC values. Trends that reflect a steady increase in value over time should be investigated.

(1) The HPC action level is determined locally, as deemed appropriate, for the facility where the ice machine is located. Setting an action level too low may present more of a challenge for compliance than is necessary. If past testing indicated a pattern of HPC values between 50 and 150 CFU/mL, the action level should not be set at 100 CFU/mL; an action level of 200 CFU/mL may be more appropriate.

(2) A maximum action level of 500 CFU/mL is recommended as the threshold for investigating conditions that may be contributing to the increased microbial load and to trigger remedial (cleaning and sanitizing) action.

*c.* Preventive Medicine should evaluate the ice machines on the installation before implementing a regimented surveillance plan.

(1) Collect an initial ice sample from each machine on the installation, and perform HPC analysis.

(2) Ice machines with HPC values above 200 CFU/ml should be cleaned and sanitized, as specified in paragraphs 12–3 or 12–4, before further testing is conducted.

(3) Retest cleaned machines to establish each facility's baseline value.

(a) The average of the HPC values can be used as a baseline for the installation if the values between samples do not vary significantly (for example, counts of less than 200).

(b) If there are wide variations in the HPC count among facilities on the installation, separate baseline values should be implemented for those facilities.

(4) After the baseline value(s) have been established, sample all machines monthly for 3 to 6 months.

(5) Assess the HPC results for each facility to see if the values steadily increase above the established baseline during the sampling time frame, and compare the results against the action level.

(a) HPC values that rise steadily each month by 100 counts or more may indicate poor hygienic controls by ice machine users.

(b) Cleaning cycles for each ice machine should be based on the amount of time elapsed during the sampling period for the HPC value to reach or exceed the action level discussed in subparagraph *b*(2), above. For example, if the action value was reached during the second month of sampling, the facility should clean and sanitize the machine every 2 months. If the action value was not reached during the 3- or 6-month sampling period, the facility can then implement a quarterly or semiannual cleaning plan, as appropriate.

*d.* Preventive Medicine should consider the following factors when determining the need and frequency for conducting ice machine quality assurance sampling:

(1) Implementation of ice machine controls as discussed in paragraphs 12–1 and 12–2. The application of ice machine controls by owning facilities reduces the need for public health surveillance.

(2) Location of the ice machine. Facilities with susceptible populations (for health or readiness), such as hospital wards and troop barracks, should be given greater priority.

(3) Results of initial sampling assessments as discussed in paragraph 12–5c.

(4) Available Preventive Medicine resources.

## APPENDIX A

### REFERENCES

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#### Section I

#### Required Publications

Except as noted, Codes of Federal Regulations (CFRs) are available online from the U.S. Government Printing Office (GPO) at <https://www.govinfo.gov/>. DOD issuances are available from the Executive Services Directorate (ESD) Web site: <http://www.esd.whs.mil/>. Army regulations (ARs); Department of the Army pamphlets (DA Pams), Army techniques and procedures (ATPs); and technical bulletins, medical (TB MED) are available from the U.S. Army Publishing Directorate (APD) Web site: <https://armypubs.army.mil>. U.S. Army Corps of Engineers (USACE) Standard Design Criteria and Engineering Manuals (EMs) are available from the USACE Headquarters Publications Web site: <https://www.publications.usace.army.mil>. Unified Facilities Criteria (UFC) are available from the Whole Building Design Guide (WBDG) Web site: <https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc>.

**AR 40–657/NAVSUP 4355.4H/MCO P10110.31H**

Veterinary/Medical Food Safety, Quality Assurance, and Laboratory Service (Cited in para 7–3a(2)(e).)

**AR 190–47**

The Army Corrections System (Cited in para 1–9i.)

**AR 385–10**

The Army Safety Program (Cited in para 8–14c(7).)

**AR 420–1**

Army Facilities Management (Cited in para 1–9f.)

**AR 608–10**

Child Development Services (Cited in para 1–9h.)

**ATP 4–42**

General Supply and Field Services Operations (Cited in para 1–9j.)

**ATP 5–19**

Risk Management (Cited in para C–5.)

**DA Pam 40–11**

Preventive Medicine (Cited in para 1–9l.)

**DODI 6060.02**

Child Development Programs (CDPs) (Cited in para 1–9h.)

**DODI 6060.4**

Department of Defense (DoD) Youth Programs (YPs) (Cited in para 1–9h.)

**EM 200–1–13**

Environmental Quality: Minimizing the Risk of Legionellosis Associated with Building Water Systems on Army Installations (Cited in para 5–7.)

## **TB MED 531**

### **IES HB-10-11**

*The Lighting Handbook, 10<sup>th</sup> Edition* (Cited in para 8–2b(3).) (Available at <https://www.ies.org/product-category/lighting-handbooks/>.)

### **Memorandum**

Assistant Chief of Staff for Installation Management, 12 March 2008, subject: Army Standard for Child Development Centers (Cited in table D–1.) (Available at Office of the Assistant Chief of Staff for Installation Management, 600 Pentagon, Washington DC 20310.)

### **Memorandum**

Assistant Chief of Staff for Installation Management, 19 October 2004, subject: Army Standards for Child Development Centers (Cited in table D–3.) (Available at Office of the Assistant Chief of Staff for Installation Management, 600 Pentagon, Washington DC 20310.)

## **TB MED 530/NAVMED P-5010-1/AFMAN 48-147\_IP**

Tri-Service Food Code (Cited in para 1–8d(3).)

## **TB MED 575**

Recreational Water Facilities (Cited in para 1–9c(2).)

## **TB MED 576**

Sanitary Control and Surveillance of Water Supplies at Fixed Installations (Cited in para 6–5b.)

## **UFC 3-420-01**

Plumbing Systems (Cited in para 5–7.)

## **UFC 4-740-06**

Youth Centers (Cited in para 8–2a.)

## **UFC 4-740-15**

Continuous Child Care Facilities (Cited in para 8–2a.)

## **USACE Standard Design Criteria**

Child Development Centers for Children Ages 6 Weeks–5 Years, Room by Room Descriptions (Cited in para 8–2a.)

## **USACE Standard Design Criteria**

School Age Centers for Children Ages 6–10 Years, Room by Room Descriptions (Cited in para 8–2a.)

## **USACE Standard Design Criteria**

Youth Centers for Middle School Youth (Ages 11–15) and Teens (Ages 16–18) (Cited in para 8–2a.)

## **21 CFR 178.1010**

Sanitizing solutions (Cited in para 8–5k(3)(c).)

## **29 CFR 1910.1030**

Bloodborne pathogens (Cited in para 11–4b.)

## **40 CFR 180.940**

Tolerance exemptions for active and inert ingredients for use in antimicrobial formulations (Food contact surface sanitizing solutions) (Cited in para 8–5k(3)(a).)

## Section II

### Related Publications

A related publication is a source of additional information. The user does not have to read it to understand this publication. Unless otherwise indicated, DOD issuances are available from the ESD Web site: <http://www.esd.whs.mil/>. ARs and field manuals (FM)s are available from the APD Web site: <https://armypubs.army.mil/>. The United States Code (USC) and CFRs are available from the GPO Web site: <https://www.govinfo.gov/>. National Fire Protection Association (NFPA) standards are available from the NFPA Web site: <http://www.nfpa.org/Codes-and-Standards>. Unified Facilities Criteria (UFC) are available from the Whole Building Design Guide (WBDG) Web site: <https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc>.

#### **AR 40–5**

Preventive Medicine

#### **AR 190–8**

Enemy Prisoners Of War, Retained Personnel, Civilian Internees, and Other Detainees

#### **AR 210–130**

Laundry and Dry Cleaning Operations

#### **AR 215–1**

Military Morale, Welfare, and Recreation Programs and Nonappropriated Fund Instrumentalities

#### **AR 215–8**

Army and Air Force Exchange Service Operations

#### **DODD 4715.1E**

Environment, Safety, and Occupational Health

#### **DODD 6200.04**

Force Health Protection (FHP)

#### **DODD 6400–04E**

DOD Veterinary Public and Animal Health Services

#### **TB MED 577**

Sanitary Control and Surveillance of Field Water Supplies

#### **10 USC 12304**

Selected Reserve and Certain Individual Ready Reserve Members; order to Active Duty other than during war or national emergency

#### **NFPA 501A**

Standard for Fire Safety Criteria for Manufactured Home Installations, Sites, and Communities

#### **UFC 3–410–01FA**

Unified Facilities Criteria (UFC), Design: Heating, Ventilating, and Air Conditioning

#### **UFC 3–420–01**

Unified Facilities Criteria (UFC), Design: Plumbing Systems

## TB MED 531

### UFC 4-010-01

#### Minimum Antiterrorism Standards for Buildings

American Academy of Pediatrics, American Public Health Association, National Resource Center for Health and Safety in Child Care and Early Education. 2011. *Caring for our Children: National Health and Safety Performance Standards; Guidelines for Early Care and Education Programs, Third Edition* (available at <http://nrckids.org/CFOC>).

ACSM. 2019. *ACSM's Health/Fitness Facility Standards and Guidelines, Fifth Edition* (available at <https://us.humankinetics.com/>).

ASTM International (formerly American Society for Testing Materials). 2017. ASTM F-1487-17, *Standard Consumer Safety Performance Specification for Playground Equipment for Public Use* (available at <https://www.astm.org/Standards/F1487.htm>).

Centers for Disease Control and Prevention. 2008, last update 2017. *Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008* (available at <https://www.cdc.gov/infectioncontrol/pdf/guidelines/disinfection-guidelines.pdf>).

Centers for Disease Control and Prevention. 2014. *Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus* (available at <https://www.cdc.gov/vhf/ebola/clinicians/cleaning/hospitals.html>).

CPSC. 2015. *Public Playground Safety Handbook* (available at <https://www.cpsc.gov/s3fs-public/325.pdf>).

Foster, S. and R. Caras. 1998. *Field Guide to Venomous Animals and Poisonous Plants*. Boston, MA: Houghton Mifflin Harcourt.

Gibb, B. 2016. *Food Safety Risk Attributed to Ionic Bond Between Quaternary Ammonium Sanitizers and Cloth Towels in Nevada* (available at <https://ifpti.org/fellowship-program/published-works/food-safety-risk-attributed-to-ionic-bond-between-quaternary-ammonium-sanitizers-and-cloth-towels-in-nevada/>).

International Committee of the Red Cross (ICRC). *Geneva Convention Relative to the Treatment of Prisoners of War of 12 August 1949 (Geneva Convention III)*. Chapter II, Article 25 (available at <http://www.un.org/en/>).

ICRC. *Geneva Convention Relative to the Protection of Civilian Persons in Time of War of 12 August 1949 (Geneva Convention IV)*. Chapter II, Article 85 (available at <http://www.un.org/en/>).

Office of the Assistant Secretary (Installations, Energy and Environment) Policy, 16 August 2018, subject: Domestic Animals on Army Installations, August 16, 2018 (available at Assistant Secretary of the Army (Installations, Energy and Environment), 110 Army Pentagon (SAIE-ESO), Room 3D453, Washington DC 20310-0110).

## Section III

### Prescribed Forms

Unless otherwise indicated, DA forms are available from the APD Web site: <https://armypubs.army.mil>.

#### DA Form 5402

Barber/Beauty Shop Inspection Report (Prescribed in para 1–9b.)

**DA Form 7847**

Beauty Operations Risk Assessment Worksheet (Prescribed in para 1–8*d*(1).)

**DA Form 7848**

Child, Youth, and School Facility Sanitation and Food Safety Inspection (Prescribed in para 1–9*h*(2).)

**DA Form 7849**

FCC Home Environmental Health Sanitation Inspection (Prescribed in para 1–9*h*(2).)

**DA Form 7850**

Gym/Fitness Facility Inspection Report (Prescribed in para 1–9*c*.)

**DA Form 7851**

Fitness Facility Risk Assessment Worksheet (Prescribed in para 1–8*d*(2).)

**Section IV**

**Referenced Forms**

**DA Form 1594**

Daily Staff Journal or Duty Officer’s Log

**DA Form 4841–R**

Child Development Services (CDS) Program/Facility Report (LRA)

**DD Form 2973**

Food Operation Inspection Report (Available at <https://www.esd.whs.mil/> )

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## APPENDIX B

### ANTIMICROBIAL AGENTS

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#### B–1. Antimicrobials

Antimicrobial agents, or “antimicrobials,” are substances or mixtures of substances used to destroy or suppress the growth of harmful microorganisms. Antimicrobial products use alcohols (ethyl, isopropyl, methyl, or N-propyl) or oxidizing agents (chlorine, peroxides, quaternary ammonium compounds, and phenolics) as the active ingredient to denature or destroy microorganisms. Various compounds serve as the active agent in quaternary ammonium products, including benzalkonium chloride, methylbenzethonium chloride, and arealkyldimethylbenzylammonium chloride.

*a.* A wide variety of available antimicrobial products are specially formulated for various applications and surface types. The effectiveness of the product to achieve the desired level of microbial destruction or inactivation is dependent on the chemical agent, the chemical concentration, and the contact time when applied to surfaces; therefore, selecting an appropriate product for the intended application is important. The contact time, also called the “dwell time,” refers to the amount of time the disinfectant must remain on a surface in order to effectively kill the target microbes.

*b.* The two categories of antimicrobial products are public health products and non-public health products.

(1) Public health products are intended to control the microorganisms that are infectious to humans in an inanimate environment. Lists of EPA-registered healthcare-use products that have been proven effective against the most common emerging pathogens are available at <https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants>.

(2) Non-public health products are used to control the growth of algae, odor-causing bacteria, bacteria that cause spoilage or deterioration of materials, and the microorganisms that are infectious only to animals.

*c.* Public health antimicrobial products can be placed into four distinct categories based on their intended use and their ability to destroy pathogenic microorganisms.

(1) *Sterilizers (sporicides)*. Steam, heat, low-temperature gas, or liquid chemical sterilants are used on medical and surgical instruments in hospitals.

(2) *Disinfectants*. The two types of disinfectants are hospital and general-use (also known as “all-purpose”). Hospital-type disinfectants are used on medical instruments, floors, walls, bed linens, and toilet seats. General-use disinfectants are used in households, swimming pools, and water purifiers. Disinfectants containing oxidizing agents as the active ingredient are known skin, eye, and inhalation irritants and must be used in well-ventilated areas. Individuals should wear disposable gloves to minimize skin contact with disinfectants.

(3) *Sanitizers*. Sanitizers are products with limited antimicrobial properties. Sanitizers are generally used to reduce the number of microbes on food-contact surfaces and for other applications such as laundry additives, carpet sanitizers, air sanitizers, and in-tank toilet sanitizers.

(4) *Antiseptics and germicides*. Applied to living tissue (skin application), antiseptics and germicides prevent infection by inhibiting the growth of microorganisms.

#### B–2. Approved products

*a.* The EPA’s Antimicrobial Testing Program ensures that EPA-registered hospital disinfectants and tuberculocides meet stringent efficacy standards. Only those antimicrobial products approved by the USDA or the FDA are safe for use with food or food-contact surfaces.

*b.* Products that do not bear an EPA, USDA, or FDA marking may not be used until reviewed and approved by the medical authority, Preventive Medicine, or Command Surgeon, as appropriate.

(1) Use of foreign products bearing a national standard marking that indicates the product has been proven effective as a disinfectant for the intended application is authorized but requires review by Preventive Medicine.

(2) Foreign products are approved if found to provide bactericidal, fungicidal, and virucidal activity. To ensure their effectiveness, germicides should be formulated with mycobactericidal properties since mycobacteria are the most difficult to destroy.

c. All products must be used IAW the manufacturer's instruction provided on the product label. Disinfectants require a minimum contact time (wet) to achieve proper disinfection.

(1) Disinfectants containing oxidizing agents as the active ingredient generally require a clear water rinse after disinfection to remove the chemical residual.

(2) Alcohol-based antimicrobial products typically do not require rinsing after application. The alcohol evaporates and does not leave a chemical residual.

### **B–3. Chlorine bleach characteristics**

Bleach is an effective, inexpensive, and universally available product. The term “bleach” refers to a chemical with the inherent properties of removing color, whitening, and disinfecting. Oxidation is the active chemical process that enables most bleach agents.

a. The active ingredient of chlorine bleach is sodium hypochlorite, an effective oxidizing agent and broad-spectrum disinfectant. When chlorine is added to water, hypochlorous acid and hypochlorite ions are produced. Hypochlorous acid is the compound that kills or inactivates microbes by causing proteins to lose their structure. Water pH is an extremely important factor in determining the effectiveness of the hypochlorous acid. A neutral pH (7.2–7.4) is ideal; as pH rises, the hypochlorous acid becomes less effective.

b. Sodium hypochlorite decomposes over time, and the rate of decomposition increases with exposure to elevated temperatures (above 70°F/21°C). A high chlorine concentration also affects the decomposition rate. For example, a 16-percent solution degrades within a few minutes, whereas a 3-percent solution can last for months. Decomposition occurs regardless of whether the product's container is open or remains sealed. Some manufacturers compensate for the increased rate of dissipation during the summer production period by increasing the base strength of the sodium hypochlorite as compared to that of the winter production. Because of these variables, users must not rely solely on the base concentration specified on the manufacturer's label and must not assume the desired disinfecting concentration will be achieved when using the prescribed dilution formula for preparing a disinfecting solution.

c. Chlorine disinfectants are safe when used properly at prescribed concentrations. Exposure to low concentrations can cause mild irritation to the upper respiratory tract, eyes, and skin. Symptom severity increases as exposure level increases. At high concentrations, major irritation to the entire respiratory tract occurs, including difficulty breathing, chest tightness, coughing, wheezing, and burning of the nose and throat. Pulmonary edema (fluid in the lungs) is expected with exposure to extreme concentrations. Personal protective measures are recommended when dilute chlorine solutions are prepared from concentrated stocks. Such measures include wearing gloves, goggles, or a face shield, and ensuring the area is well ventilated during mixing and application. When a disinfecting strength is in use, a secondary cleaning (rinse) is required to remove the chemical residual from the treated surface.

### **B–4. Chlorine bleach dilution**

Prior to its use as a surface antimicrobial agent, plain (unscented) liquid “household” bleach must be diluted to the appropriate concentration. Gel or “splashless” bleach products are not authorized for preparing disinfecting solutions.

a. Prior to 2011, U.S. bleach manufacturers formulated household bleach with a base strength between 5.25 and 6.15 percent. Many household bleach products manufactured in the U.S. are now produced with a base strength of 8.25 percent.

b. Products manufactured outside the U.S. will vary in strength, typically between 3 and 10 percent. Refer to the product label to identify the base strength of the active ingredient. Values presented as a percentage are easily converted to parts per million (ppm). One percent is equivalent to 10,000 ppm; therefore, the value of the percent concentration (without converting the number to a decimal) is multiplied by 10,000, as shown in the example.

$$\text{ppm} = (\% \text{ concentration}) \times (10,000)$$

If the product concentration is 5.25%, then the undiluted concentration of the product is calculated as follows:

$$5.25\% \times 10,000 = 52,500 \text{ ppm}$$

c. Table B–1 provides the recommended mixing formulas for two base-strength bleach products. Adhering to the prescribed mixing formula will yield the minimum desired disinfection concentration.

(1) To verify the appropriate disinfection concentration has been attained, either chlorine test paper or a test kit appropriate for measuring the desired range of bleach concentration (for example, 0–500 ppm) must be available and used each time a chlorine solution is prepared. Table B–2 provides an abbreviated list of chlorine test strip suppliers.

(2) Guidance for preparing chlorine bleach solutions using a product with a base strength other than 5.25 percent or 8.25 percent is available in APHC Technical Information Paper, Number 13-034-1114, *Preparing and Measuring High Chlorine Concentrations for Disinfection*. This document can be downloaded from the APHC public Web site’s “Resource Materials” page at <https://phc.amedd.army.mil/Pages/Library.aspx>. Use the Quick Filter feature and select “APHC Technical Information Paper (TIP).”

d. A wide variety of EPA-registered sodium hypochlorite products are premixed (diluted) for direct use. Many of these products are formulated at high concentrations, that is, above 500 ppm. For example, if the product label indicates the active ingredient is *Sodium hypochlorite 0.12%*, the chlorine concentration is 1,200 ppm (see conversion formula in paragraph b, above). The elevated concentration could present a hazard if used for certain applications, such as sanitizing food contact surfaces and small toys that are regularly mouthed by young children. Most ready-to-use disinfectants require a second cleaning (rinsing) of the surface following the appropriate contact time in order to remove the chemical residual.

**Table B–1. Chlorine solution mixing formulas**

Target Concentration (ppm) <sup>1</sup>	Household Bleach Base Strength <sup>2,3</sup>	
	5.25% <sup>4</sup>	8.25%
100	½ Tablespoon (7 ml) per 1 gallon (3.8 L) water	1 teaspoon (5 ml) per 1 gallon (3.8 L) water
200	1 Tablespoon (15 ml) per 1 gallon (3.8 L) water	2 teaspoon (10 ml) per 1 gallon (3.8 L) water
500	1 Tablespoon (15 ml) per 1 quart (0.95 L) water	2 teaspoon (10 ml) per 1 quart (0.95 L) water
	¼ cup (59 ml) per 1 gallon (3.8 L) water	1½ tablespoons (22 ml) per 1 gallon (3.8 L) water
1000	1/3 cup (79 ml) per 1 gallon (3.8 L) water	3 tablespoons (44 ml) per 1 gallon (3.8 L) water
5000	1.5 cups (355 ml) per 1 gallon (3.8 L) water	1 cup (237 ml) per 1 gallon (3.8 L) water

<sup>1</sup> 1 ppm is equal to 1 milligram per liter (mg/L).

<sup>2</sup> Use only unscented household bleach in liquid form.

<sup>3</sup> The base strength of products in containers that have been previously opened and stored for 30 days or more may degrade to less than the percentage indicated on the label (5.25% or 8.25% in this example).

<sup>4</sup> The formula for 5.25% bleach can be applied to bleach products rated up to 6.0%.

Table B–2. Chlorine test strip suppliers

Detection Range (ppm)	Products
0–200	Indigo Instruments <ul style="list-style-type: none"> <li>100 test strips per package for an average cost of 2.5 cents per test strip.</li> </ul> <a href="https://www.indigostruments.com/test_strips/disinfectants_sanitizers/chlorine_and_iodine/chlorine-test-papers-200ppm-33815.html">https://www.indigostruments.com/test_strips/disinfectants_sanitizers/chlorine_and_iodine/chlorine-test-papers-200ppm-33815.html</a>
10–200	Ecolab <ul style="list-style-type: none"> <li>100 test strips per package for an average cost of 5.5 cents per test strip.</li> </ul> <a href="https://foodsafety.ecolab.com/us/food-safety/test-strips--1/test-strips--1/chlorine-test-strips-%3A-total-10-200ppm-20302-01-11">https://foodsafety.ecolab.com/us/food-safety/test-strips--1/test-strips--1/chlorine-test-strips-%3A-total-10-200ppm-20302-01-11</a>
10–200	Hydrion Chlorine Test Strips <ul style="list-style-type: none"> <li>Single roll provides 180–200 tests for an average cost of 2.5 cents per test.</li> </ul> (Available through multiple sources) <a href="https://www.microessentiallab.com/productinfo/w21-chlor-102000-srd.aspx">https://www.microessentiallab.com/productinfo/w21-chlor-102000-srd.aspx</a>
0–600	Aquachek 652013 High Range Chlorine Test Strips <ul style="list-style-type: none"> <li>100 test strips per bottle for an average cost of 16 cents per test</li> </ul> (Available through multiple sources) <a href="https://www.amazon.com/Aquachek-652013-Range-Chlorine-Strips/dp/B004L28ZJ6">https://www.amazon.com/Aquachek-652013-Range-Chlorine-Strips/dp/B004L28ZJ6</a>
0–600	Hach Free Chlorine Test Strips <ul style="list-style-type: none"> <li>100 tests per pack for an average cost of 25 cents per test</li> </ul> <a href="https://www.hach.com/free-chlorine-test-strips-0-600-mg-l-100-tests/product?id=7640211621">https://www.hach.com/free-chlorine-test-strips-0-600-mg-l-100-tests/product?id=7640211621</a>
100–750	Serim Research Corporation, <a href="http://www.serim.com">www.serim.com</a> Free Chlorine Testing Strips <ul style="list-style-type: none"> <li>Increments: 100, 200, 350, 500, 750 ppm</li> </ul> <a href="http://www.testkitcentral.com/Chlorine-Test-Strips-High-Range-Prodview.html">http://www.testkitcentral.com/Chlorine-Test-Strips-High-Range-Prodview.html</a>
0–800	LaMotte Company Insta-Test High Range Chlorine Test Strips <ul style="list-style-type: none"> <li>Increments: 50, 100, 250, 500, 800 ppm</li> <li>50 test strips per bottle for an average cost of 40 cents per test</li> </ul> <a href="http://www.lamotte.com/en/water-wastewater/test-strips/3031.html">http://www.lamotte.com/en/water-wastewater/test-strips/3031.html</a>
0–750	Industrial Test Systems, <a href="http://www.sensafe.com">http://www.sensafe.com</a> WaterWorks™ Free Chlorine Ultra High test strips <ul style="list-style-type: none"> <li>Increments: 0, 25, 50, 100, 200, 300, 400, 500, 750 ppm</li> </ul> <a href="http://www.sensafe.com/?s=free+chlorine+ultra+high+test+strips">http://www.sensafe.com/?s=free+chlorine+ultra+high+test+strips</a>
0–2,000	Free Chlorine Ultra High II test strips <ul style="list-style-type: none"> <li>Increments: 0, 25, 50, 200, 500, 800, 1,100, 1,500, 2,000 ppm</li> </ul>
0–10,000	Deardorff Fitzsimmons Corporation, <a href="http://dfcorp.us/where_to_buy.php">http://dfcorp.us/where_to_buy.php</a> Activate™ High-level Sanitizer Test Strips <ul style="list-style-type: none"> <li>Increments: 0, 1,000, 2,500, 5,000, 7,500, 10,000 ppm</li> </ul> <a href="http://www.testkitcentral.com/High-level-Chlorine-Test-Strips-Prodview.html">http://www.testkitcentral.com/High-level-Chlorine-Test-Strips-Prodview.html</a>

**B–5. Understanding chlorine dilution ratios**

Literature provided by the Centers for Disease Control and Prevention and the World Health Organization generally prescribe two levels of bleach dilution, 0.05 percent and 0.5 percent, for the disinfection tasks associated with hospital infection prevention and control. These dilutions are based on the assumption that the starting base strength of the household bleach product used to prepare the disinfecting solution is at least 5.25-percent FAC. (Prior to 2011, the base strength of all U.S.-manufactured household bleach was 5.25 percent.)

*a.* Studies involving the use of 0.05- and 0.5-percent chlorine dilutions support the efficacy of these concentrations for infection preventive measures in hospitals. A 0.05-percent dilution is equivalent to approximately 500-ppm FAC; a 0.5-percent dilution is approximately 5,000-ppm FAC.

*b.* Chlorine dilutions are sometimes presented as a ratio of bleach to water. A ratio depicted as 1:10 represents a 0.5-percent dilution or 5,000-ppm FAC solution. A ratio depicted as 1:100 represents a 0.05-percent dilution or a 500-ppm FAC solution.

(1) The value “1” in the ratio represents one part of a specific volume of bleach.

(2) The values “10” or “100” represent the total number of bleach and water parts (measured in equal volumes). For example, for a 0.5-percent dilution, 1 part bleach (for example, 1 cup) is added to 9 equal parts of water (in this case, 9 cups) to yield a 1:10 ratio.

*c.* Applying the disinfection dilution ratios (1:10 or 1:100) when using a higher strength bleach product will result in a significantly higher disinfecting concentration than necessary. For example, if the base strength of the household bleach product is 8.25 percent, then a 1:100 dilution will yield 825 ppm, and a 1:10 dilution will yield 8,250 ppm.

*d.* Many online reference sources have not been updated with the proper mixing ratios or formulas to accommodate the higher base strength (8.25%) of household-type bleach manufactured in the U.S. Failure to both acknowledge this gap and adjust the mixing formulas accordingly increases the risk for an adverse health effect among users and other exposed individuals.

**B–6. Binding of the active ingredient on fabrics used to apply the sanitizer**

The active ingredient in some chemical sanitizers can become bound to the fabric (or neutralized) when the sanitizer is applied using a swabbing or wiping method. It is assumed that the required concentration of a sanitizing solution that was prepared properly will be transferred from the bucket by the cloth to the surface being sanitized. However, research has shown that this is not always the case. Ionic bonds are formed when quaternary ammonium is used with cotton or viscose cloth (Gibb, 2016). As much as 40 percent of quaternary ammonium chloride, the active ingredient in quaternary ammonium sanitizers, can become bound to cloth fibers, thus rendering the sanitizing process ineffective. Factors such as the type of fabric, the length of time the cloth is stored in the sanitizing solution, and the concentration and volume of the solution will affect “quat binding.” A similar effect may occur when chlorine bleach sanitizer is applied with a wiping cloth. Due to the potential for sanitizer binding with the wiping cloth, food workers should apply chemical test paper directly to the cloth containing the sanitizing solution to verify the concentration of the active ingredient released by the cloth.

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## APPENDIX C

### FACILITY RISK ASSESSMENT

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#### C–1. Operational hazards

The operations presented in this TB MED can expose employees and patrons to a wide variety of physical, chemical, and biological hazards that can produce mild to severe health effects. The possibility of disease transmission or injury is minimal when operators adhere to prescribed sanitation and safety controls. However, factors associated with a patron's health and susceptibility coupled with a decline in sanitation controls, hygienic practices, or approved procedures can have devastating effects on individual health and the readiness of military units.

#### C–2. Risk-based surveillance

*a.* Eleven types of facilities or services require periodic sanitation and hygiene inspection IAW DA Pam 40–11. Depending on the size of the installation and the extent of Preventive Medicine's designated health service support area, there may be a few dozen or several hundred facilities and operations that require inspection. Inspection priorities and frequencies are determined based on risk, that is, the risk of contributing to an adverse health effect among facility users if there is a lack of sanitary and hygienic controls.

*b.* Historically, the Environmental Health office determined its inspection frequencies based on either the perceived risk to public health or as directed by regulation. For example, food operations and barber/beauty operations did not have a prescribed inspection frequency. These operations' perceived risk for contributing to an illness outbreak event resulted in monthly inspections at all of these facilities, regardless of the operation's size or complexity. In more recent years, competing environmental health program tasks, coupled with reduced manpower or funding to execute tasks, have reduced the inspection frequency for some of these operations to every 2 months or every 3 months (quarterly). However, the decision process for adjusting inspection frequencies is often subjective and is inconsistent from one Environmental Health office to another.

#### C–3. Facility risk assessment

A facility or operation risk assessment is a standardized process for identifying hazards and patterns of nonconformance to established sanitation and hygiene controls that present an increased risk to public health. The resulting risk rating distinguishes high-risk operations that require greater public health surveillance and intervention strategies from the operations that require minimal surveillance due to their low-risk status. Risk ratings are used to determine suitable inspection intervals for independent operations rather than the collective group of similar facilities. Incorporating a facility risk assessment process into the conduct of required routine surveillance activities increases the effectiveness of Environmental Health mission services by directing scarce resources towards operations that present a higher risk to public health without diminishing the general surveillance of all operations.

#### C–4. Operations targeted for risk assessment

Not all operations require a facility risk assessment. Table 1–1 of this pamphlet identifies facilities with prescribed inspection frequencies. Gymnasiums, fitness centers, and barber and beauty operations require surveillance throughout the year. Inspection frequencies are not prescribed for these facilities; thus, the potential for their contributing to an adverse health outcome varies widely if risk is not controlled properly. Factors that influence the health-risk potential include complexity and diversity of services provided, daily patron volume, and adherence to prescribed sanitation controls. When properly controlled, the risk for adverse health effects remains low. Conversely, a breakdown in sanitation and hygienic controls increases the likelihood of disease transmission. Conducting facility risk assessments for these operations is encouraged.

*a.* Beauty operations consist of many specialty services that may be found within a multiservice or independent operation (see table 2–1 of this pamphlet).

*b.* A variety of fitness operations that require surveillance may not be affiliated with a typical gym or fitness center. Commonly associated operations, such as indoor swimming pools and smoothie bars, are treated separately for inspection purposes but are considered during characterization of the fitness operation when a risk assessment is conducted.

#### **C–5. Risk management terms and definitions**

The following definitions, extracted from ATP 5–19, are applied in the risk assessment process.

*a.* Hazard. A hazard is a condition with the potential to cause an adverse event such as injury, illness, or death; damage to, or loss of, equipment or property; or degradation of the mission. When a public health risk assessment is conducted, emphasis is placed on health hazards and their associated impact to mission readiness; hazards to property or equipment are not factored into the assessment.

*b.* Risk. The term “risk” represents the chance occurrence of a hazard event. The *Risk Level* is a type of score that assesses the odds (probability) of something going wrong and the effect (severity) of the incident when it occurs.

*c.* Probability. Probability is the likelihood that a hazard event will occur. The five levels of probability are Frequent, Likely, Occasional, Seldom, and Unlikely. Operations conforming to standards of hygiene, sanitation, and safety are unlikely to cause an adverse health effect in persons who are not predisposed to injury or illness, as described in table C–1. An increase in an operation’s nonconformance trend (to prescribed sanitation standards) increases the likeliness of an adverse health effect. Facilities that provide multiple specialty services (identified under “Facility Characterization” on the risk assessment worksheets) present a greater number of chemical, physical, and biological hazards, thereby increasing the opportunity for an adverse health effect when such hazards are not controlled properly.

*d.* Frequent: A harmful occurrence is known to happen continuously, regularly, or inevitably because of exposure. *Exposure* is the frequency and length of time personnel are subject to one or more hazards. For example, given about 500 exposures without proper controls, a harmful event will occur.

*e.* Likely: A harmful occurrence is expected to happen several or numerous times; the event commonly happens because of exposure. For example, given about 1,000 exposures without proper controls, the harmful event will occur at some point.

*f.* Occasional: A harmful occurrence is expected to happen sporadically or intermittently because of exposure; the event is neither common nor uncommon. For example, the harmful event may or may not happen in the absence of proper controls.

*g.* Seldom: A harmful occurrence resulting from exposure is infrequent; the event is remotely possible and could occur at some time. Usually, several things must go wrong at once for the harmful event to occur.

*h.* Unlikely: A harmful occurrence resulting from exposure is possible but improbable. Planners assume it will not occur, but the occurrence is not impossible.

*i.* Severity: The expected consequence of a hazard event, severity may reflect the degree of injury, property damage, or other mission-impairing factors, such as unit readiness. Severity is expressed as one of four categories: catastrophic, critical, marginal, or negligible. Table C–1 characterizes each hazard severity category.

#### **C–6. Public health risk assessment process**

*a.* Process development. Risk assessment procedures outlined in this appendix were developed from the risk management guidance presented in ATP 5–19. Modifications were made to the hazard severity characterization (table C–1) to include the corresponding health effect factors that further influence the severity outcome associated with a hazard. Health effect factors may also increase the hazard probability. The information presented in this section is intended to help the user understand how the assessment parameters were developed.

Table C–1. Hazard severity characterization

Consequences of a Hazard Occurrence		Health Effect Factors <sup>†</sup>
Catastrophic	<ul style="list-style-type: none"><li>Death or permanent total disability.</li><li>Complete mission failure or the loss of ability to accomplish a mission.</li></ul>	<p><b>1. Population susceptibility:</b></p> <ul style="list-style-type: none"><li>High stress settings (such as high operational tempo (OPTEMPO), deployment). Influencing factors include sleep deprivation, emotional and physical stress, age, level of fitness, and use of medications for other health conditions.</li><li>Populations operating in close quarters or a contained environment (such as deployment, IET, displaced persons, or detainee camps) present an increased potential for the rapid spread of disease after exposure to biological contagions.</li><li>Immune-compromised individuals are at greatest risk of infection or injury and long-term health effects.</li><li>Immune-suppressed individuals (due to medications or a pre-existing medical condition) and individuals with existing dermatitis are at greater risk of infection.</li><li>Pregnant women (and the developing fetus) are at risk of chemical and biological exposures and heat stress.</li></ul> <p><b>2. Hazards:</b></p> <ul style="list-style-type: none"><li>Unauthorized practices involving invasive procedures.</li><li>Unauthorized chemicals (such as cleaners, disinfectants, skin applications, hair treatments) or inappropriate use of authorized chemicals may result in exposure to chemicals known to cause cancer or other debilitating health conditions that are incurable and will degenerate over time.</li><li>Poorly ventilated operations may induce an asthma response or a prohibited exposure resulting from inhalation of chemical vapors.</li><li>Secondary infection (dermal) from exposure to fungal and bacterial agents.</li><li>Anaphylaxis response from individuals with known chemical or latex allergies.</li></ul>
Critical	<ul style="list-style-type: none"><li>Significantly degraded mission capability or unit readiness.</li><li>Permanent partial disability or hospitalization [of at least 3 personnel]. Includes chronic (long-term) health effects without acute onset.</li><li>Severe injury or illness resulting in lost duty days or inability to perform assigned tasks.</li></ul>	
Moderate	<ul style="list-style-type: none"><li>Somewhat degraded mission capability or unit readiness.</li><li>Minor injury or illness resulting in lost duty days.</li></ul>	
Negligible	<ul style="list-style-type: none"><li>Little or no impact to unit readiness or mission capability.</li><li>Minimal injury/illness.</li><li>First aid or minor medical treatment.</li></ul>	

<sup>†</sup>Health effect factors characterize conditions that influence the consequences of a hazard event.

*b. Baseline Values.* The prescribed inspection forms for Barber/Beauty operations and Fitness/Sport operations contain a checklist of requirements. Essential structural, administrative, and sanitation-related requirements apply to all businesses (or facilities) within the *Operation Type*. Each *Operation Type* is assigned a *Baseline Value* that represents the total number of core requirements applicable to the operation, regardless of its size or complexity. Tables C–2 and C–3 present the core requirements and baseline values for the Barber/Beauty, Fitness/Sport, and Massage Concession operations, respectively.

**Table C–2. Baseline value for beauty operations**

Operation Type	Core Requirement Categories		Baseline Value
Barber/Beauty	<b>Employee Health &amp; Hygiene (4)</b> <ul style="list-style-type: none"> <li>Working when ill</li> <li>Clean garments/uniform</li> <li>Smoking, eating, drinking</li> <li>Handwashing practices</li> </ul> <b>Physical Facilities (6)</b> <ul style="list-style-type: none"> <li>Prohibited location</li> <li>Water and plumbing fixtures</li> <li>Lighting and ventilation</li> <li>Facility cleanliness</li> <li>Supply and linen storage</li> <li>Waste receptacles</li> </ul> <b>Posted Health Regulation (1)</b>	<b>Instruments, Towels, &amp; Sanitary Practices (9)</b> <ul style="list-style-type: none"> <li>Skin contact with headrests and haircloths</li> <li>Clean haircloths</li> <li>Towel management (laundry; storage)</li> <li>Prohibited patrons</li> <li>Approved barber/beauty supplies</li> <li>Disinfectants available and approved</li> <li>Disinfectants properly prepared and used</li> <li>Instruments cleaned and disinfected</li> <li>Instrument storage; protected from contamination</li> </ul>	20

**Table C–3. Baseline values for fitness operations and independent massage concessions**

Operation Type	Core Requirement Categories		Baseline Value
Fitness/Sport	<b>Equipment &amp; Issued Items (5)</b> <ul style="list-style-type: none"> <li>Safe design and construction</li> <li>Maintained (good repair)</li> <li>Disinfectants available</li> <li>Equipment disinfection</li> <li>Laundry practices for towels/linens/clothing</li> </ul> <b>Structural/Facilities (5)</b> <ul style="list-style-type: none"> <li>Condition of floors/walls/ceilings</li> <li>Mats/padding maintained</li> <li>Adequate illumination</li> <li>Drinking fountain available</li> <li>Clean drinking fountains</li> </ul>	<b>Locker/Toilet/Shower Rooms (10)</b> <ul style="list-style-type: none"> <li>Shower/locker/toilet room: segregated, numbers, capacity</li> <li>Hand wash provided and supplied</li> <li>Plumbing; hot water</li> <li>Trash receptacles</li> <li>Trash removal</li> <li>Adequate ventilation</li> <li>Nonskid flooring; durable floor coverings</li> <li>Clean facilities</li> <li>Daily facility disinfection</li> <li>Equipment rinsed after disinfection</li> </ul>	20
Massage Concession	<b>Equipment &amp; Linens (3)</b> <ul style="list-style-type: none"> <li>Safe design and construction</li> <li>Disinfectant; available/used</li> <li>Towels/linens laundered; storage</li> </ul> <b>Structural/Facilities (8)</b> <ul style="list-style-type: none"> <li>Floor, wall, ceiling condition</li> <li>Mattress/pad condition</li> <li>Hand wash sink; supplied</li> <li>Trash receptacles</li> <li>Ventilation and lighting</li> <li>Serviceable plumbing; hot water</li> <li>Clean/disinfected facilities</li> <li>Laundry; hot water; drying</li> </ul>	<b>Sanitary/Safe Practices (9)</b> <ul style="list-style-type: none"> <li>Valid massage license</li> <li>Employee health</li> <li>Handwashing practices</li> <li>Covered skin-contact surfaces</li> <li>Torn linens</li> <li>Instrument cleaning and disinfection</li> <li>Single-use items</li> <li>Approved therapy supplies/products</li> <li>Skin product cross-contamination prevention</li> </ul>	20

c. Noncompliance level. Facilities are expected to operate within an acceptable level of conformance to prescribed sanitation, hygiene, and safety standards. Ideally, nonconformances should not exceed 10 percent. As the number of violations increases, the level of conformance decreases, thereby increasing the risk for an adverse health outcome.

(1) Five noncompliance levels are specified for the facility risk assessment; these represent a degree of nonconformance expressed as a percentage: 10, 25, 50, 75, and greater than 75 percent. The point values that correspond to each noncompliance level are derived by multiplying the operation's *Baseline Value* by the respective noncompliance percentage values, as shown in table C-4.

(2) When a facility risk assessment is conducted, an operation's performance history is evaluated, and the aggregate level of noncompliance is calculated and combined with other factors to produce a *Facility Score*. The *Facility Score* is the point value plotted in the vertical axis of the risk assessment's probability table.

**Table C-4. Noncompliance levels and points**

Noncompliance Level	Points
<i>Baseline Value = 20</i>	
≤10%	≤2
25%	3–5
50%	6–10
75%	11–15
>75%	≥16

d. Calculating an operation's risk points. The greater the number of violations occurring within an operation, the more likely it is to cause an adverse health effect among its patrons. The calculated value representing an operation's *Risk Factor* is used to illustrate this baseline risk potential. The total number of violations reported during the risk assessment period is divided by the combined number of possible violations from all reports assessed (Base Total).

$$\text{Base Total} = \text{Baseline Value} \times \text{total number of inspection reports}$$

$$\text{Risk Factor (RF)} = \text{Total Number of Violations} \div \text{Base Total}$$

(1) The *Risk Factor* alone is not an accurate depiction of the risk potential. Violations that present a greater risk than others are identified as "critical" on the inspection report. Failure of a single critical requirement may directly result in an adverse health outcome. This is in contrast to noncritical requirements, which generally require a breakdown of multiple related requirements to produce an adverse health outcome. A facility having a high number of critical violations is more likely to cause an adverse health outcome when compared to a facility that has the same or higher number of total violations but significantly fewer critical violations. To account for this increased risk, a *Critical Factor* must be applied when the operation's *Risk Points* are calculated. The *Critical Factor* is derived by dividing the total number of critical violations reported during the assessment period by the total number of violations (both critical and noncritical), as shown below.

$$\text{Critical Factor (CF)} = \text{Total Number of Critical Violations} \div \text{Total Number of Violations}$$

(2) The *Critical Factor* represents the percentage of the total violations that were critical. When the operation's *Risk Factor* is multiplied by the *Critical Factor*, a weighted value is derived and added to the *Risk Factor* in order to obtain the operation's true *Noncompliance Value* (shown below). The *Noncompliance Value* is a more accurate assessment of an operation's degree and severity of nonconformance.

$$\text{Noncompliance Value} = (RF \times CF) + RF$$

(3) The noncompliance or *Risk Points* awarded for the operation are derived by multiplying the *Noncompliance Value* by the operation's *Baseline Value* (shown below).

$$\text{Risk Points} = \text{Noncompliance Value} \times \text{Baseline Value}$$

e. Other factors influencing the risk potential. The *Facility Score*, which is primarily a reflection of the operation's ability to conform to prescribed standards, also accounts for the increased risk associated with operations providing more complex services and those facilities supporting a larger customer base.

(1) *Population size*. Population size is based on an operation's average daily patronage. The number of adverse health outcomes is expected to increase as more people are exposed to the same hazard. Additional points are added to the operation's *Risk Points* when the average population served exceeds the value specified on the Risk Assessment Worksheet. The population values presenting an increased risk for an adverse health outcome were derived subjectively, as follows:

(a) Beauty Operations. A typical barber or beauty shop is designed to support up to four chairs at one time. The average time spent per patron is 20 minutes. In a 10-hour business day, the facility can serve 30 patrons per chair for a total of 120 patrons. Sustaining this rate of service throughout the entire workday can lead to a breakdown in sanitary practices. Although larger facilities may be staffed to support a higher number of customers each day, more opportunities exist for generating unsanitary conditions.

(b) Fitness Operations. Consistent disinfection of surfaces that are in contact with patrons' skin during workouts presents the greatest challenge for gyms and fitness centers, especially during daily peak usage periods. Facilities that serve more than 500 customers each day are likely to have more than 100 customers concentrated in select workout areas during each peak usage period. Adherence to equipment disinfection practices between customers is likely to decrease during these periods, thereby increasing potential customer exposure to harmful microorganisms from contaminated surfaces.

(2) *Operation complexity*. As an operation becomes more complex, the types of operational hazards increase and can produce more severe adverse health outcomes when personnel are exposed. The PROBABILITY and SEVERITY tables for each risk assessment worksheet are designed to account for differences in operational complexity. The *Operation Type* incorporates the operation's key characteristics and associated hazards.

(3) *Ancillary facilities*. The assessed facility may contain support elements, such as a food concession or swimming pool, which are evaluated independent of the primary operation. The presence of these ancillary facilities requires additional controls that are not evaluated as part of the facility risk assessment but may either affect or be affected by a breakdown in the operation's sanitation controls. To account for this reciprocal effect, additional points are added to the operation's *Risk Points*.

f. *Population susceptibility*. The goals of the Army's sanitation surveillance program are to safeguard public health and prevent degradation of unit mission readiness. These require an understanding of the hazards associated with an operation, the effects on exposed individuals, and the potential impact on military units. Individual susceptibility increases the likeliness that a hazard exposure will result in injury or illness. Susceptibility of a military unit is characterized by its mission, location, and OPTEMPO. The secondary effects of an adverse health outcome involving one or more individuals may impact a unit's ability to complete the mission successfully. The facility risk assessment process accounts for individual health effects and the potential impact to affected populations as a whole. The SEVERITY table presented in the Facility Risk Assessment Worksheet identifies six categories that characterize the *Primary Population Served*. Although an assessed operation may be accessible and used by the broader installation community, its location may cater more to a select subset of the population. The

following attributes were used to distinguish each population subgroup. These population groups are listed in order from most susceptible to least susceptible.

(1) *Hospital; contingency camp.* Hospital inpatients and outpatients may be immunocompromised or have an immunodeficiency, making them more likely to experience an adverse health effect from a poorly controlled operation. Susceptibility is also increased among displaced persons temporarily sheltered at camp sites following a natural disaster and among detainees held during combat operations. The austere environment, coupled with close or contained living accommodations, increases the potential spread of a disease event. Facilities or operations included in this group—

(a) Are located inside a medical facility complex or in close proximity to the hospital with primary intent to service hospital staff and patients;

(b) Directly support a displaced persons camp; or

(c) Support a detainee camp or other similar containment site during combat operations.

(2) *Deployment setting.* The high OPTEMPO associated with the deployment setting is known to increase individual susceptibility due to a reduced immune response resulting from fatigue, physical exertion, and stress. Facilities associated with this group are located at a forward operating base, camp, or similar combat or contingency operation site. The sites of detainee or prisoner confinement camps are not included in this group but are assessed under the *Hospital; Contingency Camp* category.

(3) *High-readiness TO&E unit.* Facilities defined in this group are located in close proximity to a Table of Organization and Equipment (TO&E) specialty unit such as a Special Forces unit, Division Readiness Brigade, or other similar unit having a short-notice deployment designation (that is, within 96 hours). These facilities are located at a home station (non-deployment environment), either within the continental United States (CONUS) or OCONUS. Personnel affiliated with these units are not considered highly susceptible; however, the overall impact of the hazard may significantly degrade unit readiness.

(4) *Initial Entry Training/Advanced Individual Training (IET/AIT); mobilization; readiness training sites.* Individual susceptibility is increased due to the high-stress environment and fatigue from increased physical activity and reduced sleep, which may result in degradation of unit readiness. Facilities or operations included in this group are located in or in close proximity to—

(a) The battalion/brigade area of an IET or AIT school.

(b) A mobilization site for Active and Reserve Component units preparing to deploy to a combat or contingency operation support area.

(c) A military training center, range, or school where the duration of tactical exercises, unit collective field training, or individual tactical training (such as Airborne or Ranger School) is longer than 2 weeks.

(5) *TO&E units (not deployed).* Facilities contained within this group are located at the home station (CONUS or OCONUS) and are situated in close proximity to TO&E units other than High-readiness TO&E units. Typically, the assessed facilities were intentionally positioned to provide easy access for the supported military units. Examples include a gym or barber shop located within the Brigade or Corps area.

(6) *General population.* This facility group is used to characterize all other populations not previously defined. The customer base includes a mix of military personnel, civilian employees, and military beneficiaries. Although IET/AIT students, hospital outpatients, or members of TO&E units may be among the served population, they comprise only a small fraction of the overall population that is actively using the facility.

### C-7. Risk determination

The facility risk assessment process begins with a hazard analysis. Hazard analyses for the broad range of services and facilities associated with Beauty and Fitness operations were conducted and are reflected in tables 2-2 and 3-1, respectively.

a. The spectrum of Beauty operations ranges from a simple barber shop to a complex day spa in which a wide variety of hair, nail, and skin treatments are performed. Similarly, the spectrum of fitness operations varies based on the availability of shower rooms, saunas, onsite laundry, and other amenities. In order to account for the large number of possible facility (operational) configurations, the hazard analysis data were used to create the *Operation Type* designation. Facilities grouped within the same *Operation Type* share similar characteristics or hazards that are expected to produce an equivalent severity outcome.

b. Each Facility Risk Assessment Worksheet is designed to help the user characterize the operation properly and identify the appropriate *Operation Type*. A *Facility Score* is calculated for the operation following a review of its inspection history.

c. The probability of the operation contributing to an adverse health occurrence is derived by plotting the *Operation Type* against the *Facility Score* in the worksheet's PROBABILITY table.

d. The severity estimate for an operation is derived by plotting the *Operation Type* against the *Primary Population Served* in the worksheet's SEVERITY table.

e. *Probability* and *Severity* values are plotted on the Risk Assessment Matrix (table C-5) to determine the overall *Risk Rating* for the assessed operation/facility. The four risk levels are Extremely High, High, Moderate, and Low.

**Table C-5. Risk assessment matrix**

RISK RATING		Probability				
		A Frequent	B Likely	C Occasional	D Seldom	E Unlikely
Severity	I– Catastrophic	EH	EH	H	H	M
	II – Critical	EH	H	H	M	L
	III – Marginal	H	M	M	L	L
	IV – Negligible	M	L	L	L	L
EH = extremely high H = high M = moderate L = low						

(1) *Extremely-high-risk* operations present major hazards that are uncontrolled and expected to cause severe adverse outcomes related to individual health or mission accomplishment. A *frequent* or *likely* probability of catastrophic loss (I-A or I-B) or *frequent* probability of critical loss (II-A) exists.

(2) *High-risk* operations will produce serious consequences to individual health or mission readiness. Significant mission degradation occurs due to individuals who are unable to complete all or part of the mission, or fail to meet mission standards. *Occasional* or *seldom* probability of catastrophic loss (I-C or I-D) exists. A *likely* or *occasional* probability exists of a critical loss (II-B or II-C) occurring. *Frequent* probability of marginal losses (III-A) exists.

(3) *Moderate-risk* operations may temporarily impair individuals and degrade mission capabilities. An *unlikely* probability of catastrophic loss (I-E) exists. The probability of a critical loss is *seldom* (II-D). Marginal losses occur with a *likely* or *occasional* probability (III-B or III-C). A *frequent* probability of negligible (IV-A) losses exists.

(4) *Low-risk* operations are not expected to cause injury, illness, or damage; or the effects of exposure to operational hazards may be minor with no long-term impact. There is little or no expected impact to mission readiness. The probability of critical loss is *unlikely* (II-E), while that of marginal loss is *seldom* (III-D) or *unlikely* (III-E). The probability of a negligible loss is *likely* or less (IV-B through IV-E).

### C-8. Inspection planning

The three types of operations requiring periodic sanitation inspections during the year are beauty, fitness, and food facilities. Frequencies for conducting routine inspections are based on a facility's *Risk Rating* and are scheduled in advance for the entire year; however, their execution is unannounced. Implementation of an inspection schedule based on risk should provide relief to resource-constrained Environmental Health offices without diminishing the

efficacy of their public health surveillance activities. Time saved by reducing the inspection frequency for *Low*- and *Moderate*-risk operations is more effectively applied towards execution of intervention strategies to help improve performance of *High*- and *Extremely High*-risk operations.

*a.* Risk assessments. Facility risk assessments should be conducted during the fourth quarter of the fiscal year in order to plan inspection activities for the upcoming fiscal year.

(1) Update facility risk assessments annually for facilities rated *Extremely High* or *High* risk.

(2) Update facility risk assessments every 2 years for operations rated *Moderate* and *Low* risk.

(3) A new risk assessment is initiated after 1 year when a facility previously rated *Moderate* or *Low* risk has demonstrated a pattern of noncompliance or significantly degraded adherence to the sanitation standard during the current fiscal year.

*b.* Inspection frequency. Table C–6 provides the risk ratings and their corresponding minimum inspection frequency. Facilities located in a deployment setting or identified as primarily supporting a High-readiness Brigade or similar rapid-deploy unit should be inspected monthly or more frequently when their risk rating is *Extremely High* or *High*.

**Table C–6. Inspection frequency**

Risk Rating	Inspection Frequency
Extremely high	Monthly
High	Quarterly
Moderate	Semi-annually
Low	Annually

*c.* The minimum inspection frequencies presented in table C–6 do not preclude the inspector from conducting more frequent inspections following periods of notable degradation in sanitary performance at a facility. When more frequent inspections occur, it is not necessary to update the facility risk assessment before the next scheduled periodic update, as stated in paragraph *a*, above. Once the inspecting office is satisfied with the improved performance of the facility, its routine inspections resume as originally scheduled. For example—

A facility rated as *Moderate* risk is scheduled for two routine inspections for the year: March and September. In March, the facility received an inspection rating of “Unsatisfactory” (noncompliant). The follow-up inspection conducted 2 days later found no corrective action had been applied, so the facility retained its “Unsatisfactory” rating. The second follow-up conducted 48 hours later found all critical violations had been corrected. As a result of the first failed follow-up, the inspector scheduled another routine inspection for April. When the operation received a rating of “Satisfactory” during the April sanitation inspection, the inspector resumed the original inspection schedule and conducted the next inspection in September.

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## APPENDIX D

## CHILD CARE FACILITY DESIGN CRITERIA

Table D–1. Child development center design standards related to health and sanitation controls

Item	Mandatory Criteria <sup>1,2</sup>
Isolation Area	Must have a small space, behind the reception desk, designed to serve as a rest area for sick children. Area to be sized to accommodate a cot or crib and lockable area for storage of first aid supplies. Space is immediately adjacent to the reception area. Receptionist must be in direct line of sight of this area. Immediate access to a bathroom facility must be provided for the ill child. Locate a single-occupant, child-height, Americans with Disabilities Act (ADA)-compliant toilet (15 inches (in.) to the toilet rim) and sink (20 in. above the floor finish) immediately adjacent to the isolation area. Self-priming floor drain required to prevent sewer gases from occupying space.
Public Toilets	Handicapped-accessible public toilet(s) for parents and visitors shall be located within view of the reception area. For medium and large facilities, a minimum of two (2) separate public toilets are required. For small facilities, one (1) unisex toilet is required.
Staff Toilets	Must provide staff toilets separate from the public toilets. One water closet for every 15 employees scheduled to be in the facility at any one time. Locate staff toilets near the children's activity rooms.
Infant/Pre-Toddler/Toddler Activity Room	<p>Must provide infant/pre-toddler/toddler activity rooms to accommodate up to 14 children at 35 square feet (sq ft) of useable space per child. Activity space dual-functions for eating and sleeping.</p> <p>A built-in diaper-changing station with sink and a 6-in. lip to prevent infant from rolling off the table, along with an unbreakable mirror installed along the back wall are required. Gooseneck faucet and wrist blade handles required at sink. Provide an exhaust fan at each diaper-changing station with exhaust rate of 100–150 feet per minute.</p> <p>Must provide a solid surface food preparation/art counter with integral backsplash, upper and lower cabinets, and two (2) separate stainless steel sinks. Provide space and electrical outlet for under-the-counter refrigerator.</p> <p>Two (2) pediatric toilets (10 in. to the rim) with floor drain. Toilets are to be separated with a toilet partition. Toilets shall not be provided with automatic flush valve. Provide an exhaust vent located within the wall directly behind the toilet area; vent to exhaust 100–150 feet per minute.</p> <p>Two (2) wall-hung, child-size sinks (17 in. above the finished floor) for hand washing must be provided. Wall-hung unbreakable safety mirror to be placed above each sink. Sinks to be placed opposite the toilets.</p> <p>One (1) separate drinking fountain with guarded-stream drinking head to be provided in each activity room (17 in. above the finished floor).</p> <p>Fourteen (14) cubbies to be provided for storage of children's belongings.</p>
Preschool/Pre-kindergarten/Kindergarten Activity Rooms	The preschool/pre-kindergarten/kindergarten room has space provided to accommodate up to 24 children. This activity room provides 35 sq ft of useable program space per child. Activity space dual-functions for eating and sleeping.

Item	Mandatory Criteria <sup>1,2</sup>
	<p>Must provide a solid surface food preparation/art counter with integral backsplash, upper and lower cabinet, and two (2) separate stainless steel sinks. Provide space and electrical outlet for under-the-counter refrigerator.</p> <p>Two (2) pediatric toilets (13 in. to the rim) with floor drain to be provided. Toilets shall not be provided with automatic flush valve. Child toilet area for this age group must meet ADA requirement. Provide an exhaust vent located within the wall directly behind the toilet area.</p> <p>Two (2) wall-hung, child-size sinks (20 in. above the finished floor) for hand washing must be provided opposite the toilet stalls. Wall-hung, unbreakable safety mirror to be placed above each sink. Access area to be plumbed in for hot/cold water in half wall opposite children's sinks for potential future need of diaper-changing table (for example, special needs children). Cover with access panel.</p> <p>One (1) separate drinking fountain with guarded-stream drinking head to be provided in each activity room (20 in. above the finished floor).</p> <p>Twenty four (24) cubbies to be provided for storage of children's belongings.</p>
Active Play Room	<p>An indoor play area for children to utilize during inclement weather or temperature extremes. Space is sized for up to 24 children at a minimum of 45 sq ft per child. Provide for a seamless, flexible, shock-absorbing flooring that can withstand trikes, skates, ball play, and other activities. Cased opening with area for pediatric toilet (13 in. to the rim) with toilet partition and sink (18 in. above the finished floor) off the active play room. Direct access to storage for supplies and equipment needed in this space. Exit door swings in the direction of travel.</p>
Outreach/Transition Care Room	<p>Accommodates children on a short-term, occasional basis such as for Family Readiness Groups, deployment support, reunion care, respite care, and in-processing of Soldiers. Room size and mandatory features are identical to those for the Preschool/Pre-Kindergarten/Kindergarten activity room. Diaper-changing station to be installed in this room. Toilets are sized 10 in. and 13 in. to the rim; sinks are sized 17 in. and 20 in. above the finished floor to accommodate the varying ages of children (infants through kindergarten).</p>
Commercial Grade Kitchen	<p>Must provide a commercial-grade kitchen. Locate the kitchen on an exterior wall adjacent to the service area with a direct service entrance. Kitchen door to swing out into the corridor for easy exit with food. Door to be provided with locking mechanism. Exterior door from the kitchen leading to the service entrance shall be equipped with an air curtain.</p> <p>Kitchen must include a dry storage area with shelving.</p> <p>Provide communication and data connectivity and intercom phone connection to support communication with the front desk and the placing of food orders online.</p>
Janitorial Closet	<p>A janitorial closet is required and equipped with a low mop sink, storage for janitor's equipment and cleaning supplies, and a rack to promote hanging/air drying of mops. Door must have a locking mechanism and be designed to swing out into the corridor 180 degrees to prevent impeding emergency egress.</p>
Laundry Room	<p>Must provide separate space for heavy-duty commercial laundry equipment – washer(s) and dryer(s). Allocation is as follows:</p> <ul style="list-style-type: none"> <li>• Small CDC – 2 washers and 2 dryers</li> <li>• Medium and Large CDC – 3 washers and 3 dryers</li> </ul> <p>Dryer vent shall be individually and directly vented to the outside. Laundry room to be secured with locking mechanism. Locate laundry room on an exterior wall to</p>

Item	Mandatory Criteria <sup>1,2</sup>
	<p>allow for horizontal venting of the dryers. Provide for a laundry tub and self-priming floor drain to prevent sewer gases from filtering into the facility.</p> <p>Provide counter for folding clothes with upper and lower cabinets for storage of laundry materials.</p>
Exterior Windows	<p>Exterior windows shall meet the UFC 4-010-01 requirements for Antiterrorism/Force Protection. Windows to open from the top only. Individual windows shall be single-hung with only the top portion operable. All windows to be screened. Windows to be low enough to enable children to look outside (18–20 in. above the finished floor). Window stools to be flush with the walls and/or radiused so there are no sharp edges.</p>
Playground/Outdoor Play Areas	<p>Outdoor play areas (playgrounds) serve as extensions of classroom spaces and must be provided to support programming. Playground is divided into individual areas to accommodate the different age groups occupying the facility; separate play areas are required for each age group of children.</p> <p>Area is capable of supporting 50% of the children at any given period of time at a minimum of 100 sq ft per each child using the outdoor play space.</p> <p>Playgrounds must meet guidelines contained in the CPSC <i>Handbook for Public Playground Safety</i>, the American Society for Testing Materials (ASTM) F-1487-17, and meet ADA guidelines for playgrounds (<a href="http://www.access-board.gov">www.access-board.gov</a>). Elements include circulation paths, open play areas/natural turf, play structures, age-appropriate equipment, attenuation materials for use zones, and fencing. Shade in the outdoor play areas is a requirement for certification.</p> <p>A playground safety surface shall be provided throughout all use zones and under all play equipment.</p> <p>Hose bibs, 18 in. above finished grade, are required in each age group's play space and must be of the frost/freeze protective type with removable cut-off handles with integral vacuum breakers.</p> <p>Poisonous plants, plants with thorns, and fruit-bearing plants are not permitted in the outdoor play areas. (See Foster and Caras, 1998.)</p>
Heating, Ventilation, and Air Conditioning (HVAC)	<p>HVAC units will provide heating and air conditioning for the entire facility excluding the Mechanical and Electrical Rooms, which require heating only. Each child activity room will have a separate HVAC zone with a wall-mounted, tamperproof space thermostat with night and weekend set-back to accommodate variations in temperatures.</p>
Mechanical / Electrical Room	<p>Mechanical room to open directly to the exterior of the building with no access to the interior space or direct access to the playground. Mechanical yard must be located away from the playground area for safety, noise, and environmental considerations.</p>
Landscaping	<p>Irrigation of turf and significant landscaping may be required in geographical areas which are arid. Shrubs, bushes, trees, flowers, and other features used around the facility and outdoor activity area shall be evaluated for potential hazard or toxicity. No toxic chemicals or herbicides shall be used to clear the site of unwanted irrigation.</p>
<p><sup>1</sup> Adapted from the ACSIM Memorandum, subject: Army Standards for Child Development Centers, March 2008 (for children 6 weeks–5 years of age).</p> <p><sup>2</sup> Review of all mandatory criteria specified in the ACSIM Memorandum cited above is required when a facility design review is conducted. Criteria omitted from this table apply to administrative, safety, and security requirements.</p>	

**Table D–2. Child development center minimum room finish schedule requirements<sup>1</sup>**

SPACE	FLOOR <sup>2</sup>	WALL <sup>2</sup>	CEILING <sup>3</sup>
<b>Administrative</b>			
Entry	VCT	EPGB	ACT, PTD
Waiting area	VCT	EPGB	ACT
Reception/central counter	VCT	EPGB	ACT, PTD
Private offices	VCT	PTD	ACT
Open office	VCT	PTD	ACT
Isolation room	SV	EPGB	ACT
Isolation toilet	CT	CT	ACT
<b>Staff Support</b>			
Staff lounge	VCT	EPGB	ACT
Training room	VCT	EPGB	ACT
Public toilets	CT	CT	ACT
Adult toilets	CT	CT/EPGB [ <i>CT to 48 in. above the finished floor; EPGB above 48 in.</i> ]	ACT
<b>Support Areas</b>			
Laundry	VCT	CT	VACT
Janitor	QT	CT	VACT
Corridors	VCT	EPGB	ACT
Mechanical and Electrical	SC	PTD	PTD
Communications	SC	PTD	PTD
Kitchen	QT	CT/EPGB [ <i>CT to 48 in. above the finished floor; EPGB above 48 in.</i> ]	VACT
<b>Child Activity Room</b>			
Child activity room	SV	EPGB	ACT
Child toilet areas	CT	CT/EPGB [ <i>CT to 48 in. above the finished floor; EPGB above 48 in.</i> ]	ACT
<b>LEGEND</b>			
SV – Seamless Vinyl Flooring CT – Ceramic Tile QT – Quarry Tile VCT – Vinyl Composite Tile SC – Sealed Concrete			
PTD – Painted Gypsum Wallboard EPGB – Epoxy-Painted Gypboard VACT – Vinyl-Faced Acoustical Ceiling Tile (moisture resistant) ACT – Acoustical Ceiling Tile			
<sup>1</sup> Adapted from the ACSIM Memorandum, subject: Army Standards for Child Development Centers, March 2008 (for children 6 weeks – 5 years of age).			
<sup>2</sup> Base: The base will be appropriate to the flooring. Base to be sealed with USDA-approved caulk (Edible).			
<sup>3</sup> Ceiling: 2 ft X 2 ft ACT, VACT			

**Table D–3. School-age care design standards related to health and sanitation controls**

<b>Item</b>	<b>Mandatory Criteria<sup>1,2</sup></b>
Central Counter/Reception Desk	Must have central counter for clerk to view/observe the flow of children, parents, and visitors. A small area designated behind the reception desk to serve as a rest area for sick children. The configuration and functional relationship between the main entry and the central counter/reception desk must be maintained.
Staff/Visitor Restrooms	Must have handicapped accessible restrooms in the entry/lobby of the facility for use by parents, visitors, and staff. These restrooms must be separate from those used by children.
Open Activity Area(s) (Atrium)	[In addition to the Computer Lab, Homework Center, and Activity Rooms] must have an open activity area adjacent to the Teaching Kitchen in the 135-, 180-, and 225-child-capacity facilities. Each open area provides a 40 ft X 16 ft area or 45 sq ft of space for 15 children. Clerestory windows provide natural lighting into the area. Skylights are not an acceptable means of meeting the natural lighting requirements.
Commercial Grade Kitchen	A commercial-grade kitchen must be provided in the 135-, 180-, and 225-capacity facilities. Kitchen must include a dry storage area. A pass-through window between the kitchen and Teaching Kitchen will be provided.
Teaching Kitchen	Must have a teaching kitchen in all SACs. Teaching kitchen must be adjacent to the commercial-grade kitchen. Teaching kitchen area is incorporated into an activity room in the 75-capacity (SAC) wing addition within a CDC.
Male/Female Toilet Areas for Children	Separate male and female toilet areas for children in the program are required. One toilet and one sink per 18 school-age children are required.
Janitorial Closet	A janitorial closet is required, adjacent to the children's toilet areas.
Laundry Room	Must provide space for one residential-grade washer and dryer. Dryer to be vented to the outside.
HVAC	HVAC units will provide heating and air-conditioning for the entire facility, excluding the Mechanical and Electrical Rooms, which require heating only. A system with zoning flexibility must be provided.
Landscaping	Irrigation of turf and significant landscaping may be required in geographical areas which are arid. Shrubs, bushes, trees, flowers, and other features used around the facility and outdoor activity area shall be evaluated for potential hazard or toxicity. No toxic chemicals or herbicides shall be used to clear the site of unwanted irrigation.
<sup>1</sup> Adapted from the ACSIM Memorandum, subject: Army Standards for Child Development Centers, October 2004 (for school-age children). <sup>2</sup> Review of all mandatory criteria specified in the ACSIM Memorandum is required when conducting a facility design review. Criteria omitted from this table apply to administrative, safety, and security requirements.	

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## GLOSSARY

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### Section I Acronyms

**AAFES**

Army and Air Force Exchange Service

**ACSIM**

Assistant Chief of Staff for Installation Management

**ADA**

Americans with Disabilities Act

**AIT**

Advanced Individual Training

**ANSI**

American National Standards Institute

**APD**

Army Publishing Directorate

**APHC**

U.S. Army Public Health Center

**AR**

Army regulation

**ASHRAE**

American Society of Heating, Refrigeration, and Air Conditioning Engineers

**ATP**

Army techniques and procedures

**BH**

Beauty operation hazard

**°C**

degrees Celsius

**CDC**

child development center

**cfm**

cubic feet per minute

**TB MED 531**

**CFR**

Code of Federal Regulations

**CFU**

coliform forming units

**CONUS**

continental United States

**COR**

Contracting Officer's Representative

**CPSC**

U.S. Consumer Product Safety Commission

**CSA**

Canadian Standards Association

**CYSS**

Child, Youth, and School Services

**DA**

Department of the Army

**DA Pam**

Department of the Army pamphlet

**dB(A)**

decibels, A-weighted

**D-cell**

detention cell

**DD**

Department of Defense

**DHA**

dihydroxyacetone

**DOD/DoD**

Department of Defense

**DODI**

Department of Defense Instruction

**DOEHRS-IH**

Defense Occupational and Environmental Health Readiness System—Industrial Hygiene

**DPW**

Directorate of Public Works

**EPA**

United States Environmental Protection Agency

**EPW**

enemy prisoner of war

**ETL**

Intertek Testing Services (formerly ETL Testing Laboratory)

**EU**

European Union

**°F**

degrees Fahrenheit

**FAC**

free available chlorine

**FCC**

family child care

**FDA**

U.S. Food and Drug Administration

**GP**

general purpose

**HEPA**

high-efficiency particulate air

**HIV**

Human Immunodeficiency Virus

**HPC**

heterotrophic plate count

**HPV**

Human Papillomavirus

**HVAC**

heating, ventilation, and air conditioning

**IAW**

in accordance with

**IET**

Initial Entry Training

**in.**

inch

**TB MED 531**

**IR**  
infrared

**L**  
liter

**MFR**  
memorandum for record

**MGPTS**  
modular general purpose tent system

**mL**  
milliliter

**MOA**  
memorandum of agreement

**MOU**  
memorandum of understanding

**MRSA**  
methicillin-resistant *Staphylococcus aureus*

**MWR**  
Morale, Welfare, and Recreation

**NFPA**  
National Fire Protection Association

**NSF**  
National Sanitation Foundation International

**OCONUS**  
outside the continental United States

**OPTEMPO**  
operational tempo

**pH**  
potential hydrogen

**PIC**  
person in charge

**PPD**  
p-phenylenediamine

**PPE**  
personal protective equipment

**ppm**

parts per million

**RF**

risk factor

**ROTC**

Reserve Officer Training Corps

**RV**

recreational vehicle

**SAC**

school-age care

**SDS**

Safety Data Sheets

**SOP**

standard operating procedure

**sq ft**

square feet

**TB MED**

technical bulletin, medical

**TO&E**

Table of Organization and Equipment

**UFC**

Unified Facilities Criteria

**UL**

Underwriters Laboratory

**UPC**

Uniform Plumbing Code

**UPH**

unaccompanied personnel housing

**USACE**

U.S. Army Corps of Engineers

**USC**

United States Code

**USDA**

United States Department of Agriculture

## **TB MED 531**

**UV**  
ultraviolet

**VHF**  
viral hemorrhagic fever

## **Section II**

### **Terms**

#### **Active managerial controls**

A proactive system of controls implemented by managers and supervisors to prevent violations from reoccurring.

#### **Biofilm**

Multicellular communities held together by a self-produced extracellular matrix. Biofilm bacteria are densely packed communities of microbial cells that grow on living or inert surfaces and surround themselves with secreted polymers.

#### **Campground**

A designated recreational area for placement of tents or temporary habitation in a shelter (cabin, for example) that is permanently located on the site. A campground may also operate a recreational vehicle park.

#### **Campsite**

The area where a tent is placed.

#### **Clean**

Free of visible soil, debris, and oily or chemical residues, and the absence of objectionable odors.

#### **Comfort station**

A toilet facility or service building containing toilets and showers, and, in some cases, laundry facilities.

#### **Cosmetics**

The Food, Drugs, and Cosmetics Act of 1938 (FD&C Act) defines cosmetics by their intended use, as “articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body...for cleansing, beautifying, promoting attractiveness, or altering the appearance” (FD&C Act, sec. 201(i)). Among the products included in this definition are skin moisturizers, perfumes, lipsticks, fingernail polishes, eye and facial makeup, cleansing shampoos, permanent waves, hair colors, and deodorants, as well as any substance intended for use as a component of a cosmetic product. It does not include soap.

#### **Disinfect**

To destroy or inactivate microorganisms (excluding spores) from inanimate hard (nonporous) objects. Disinfection is not the same as sterilization, which is the removal or destruction of all forms of life, including bacterial spores.

#### **Food service area**

Area in which food is prepared (kitchen, for example) and then served to a customer. Components of a food service area include the food storage areas, service areas, and the dining area.

#### **Fomite**

Any nonliving object or substance, to include bedding and clothing, that is capable of absorbing/carrying and transmitting the infecting organism of a disease to a new host that comes in contact with the object. Various bacteria and viruses have been found to survive on common surfaces for days.

**Manufactured home park**

A parcel of ground designed and utilized to accommodate two or more manufactured homes.

**Manufactured home space**

A designated area within a manufactured home park designed and utilized to accommodate the placement of one manufactured home.

**Manufactured housing**

Previously referred to as “mobile homes,” manufactured housing is a type of prefabricated housing at least 320 sq ft in size and containing a permanently-attached wheeled chassis.

**Medical authority**

The commander of the medical treatment facility (at fixed installations in garrison) or the Command Surgeon (in deployment settings) whose authority is above the Preventive Medicine activity or representative responsible for providing environmental health services support as specified in AR 40–5.

**Non-water carriage waste disposal facility**

A rest station facility, such as portable or composting toilets, designed to collect and temporarily hold human waste; used in remote locations, construction sites, and for short-term public events.

**Privatized facilities**

As referenced in this publication, “privatized facilities” include the physical facilities and associated services operated on Army installations through a lease agreement for providing services to Army or DOD beneficiaries. Privatized facilities are generally associated with the Privatized Army Lodging Program and the Residential Community Initiative for family housing.

**Privy (sanitary pit privy)**

A pit toilet (latrine) dug into the earth with an outbuilding (that is, “outhouse”) placed over it for convenience and privacy.

**Protozoa**

Microscopic single-celled organisms ranging in size from 10 to 52 micrometers.

**Recreational vehicle**

Also called “RV.” A motorized or towable vehicle that combines transportation and temporary living quarters for travel, recreation, and camping. For the purpose of this publication, RVs do not include manufactured homes, off-road vehicles, snowmobiles, or conversion vehicles.

**Recreational vehicle park**

Also called “RV park.” A recreational area designed and constructed to support recreational vehicles.

**Sanitize**

To reduce (not eliminate) the number of harmful microorganisms on a surface to levels that are considered safe according to public health regulations.

**Service building**

A separate building, not for dwelling use, containing restroom, bathing, laundry, and other sanitation or administrative services, as required. Also referred to as a “comfort station.”

## **TB MED 531**

### **Wilderness area**

Undeveloped and unimproved tracts and resources on and within the installation that are part of the recreational area but beyond the boundaries and limits of the developed portion of the recreational area that is served by utilities.

**TB MED 531**

**1 March 2019**

By Order of the Secretary of the Army:

**MARK A. MILLEY**  
*General, United States Army*  
*Chief of Staff*

Official:

  
**KATHLEEN S. MILLER**  
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*to the Secretary of the Army*

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