

2.3 Psychiatric Hospitals

Appendix material, which appears in shaded boxes at the bottom of the page, is advisory only.

1 General Considerations

1.1 Applicability

This section covers a psychiatric hospital intended for the care and treatment of inpatients and outpatients who do not require acute medical/surgical care services. See Section 2.1-3.8 for psychiatric units within acute care hospitals.

1.2 Functional Program

See Section 1.2-2.

1.3 Shared Services

Where the psychiatric facility is part of another facility, services such as dietary, storage, pharmacy, and laundry should be shared insofar as practical. In some cases, all ancillary service requirements will be met by the principal facility. In other cases, programmatic concerns and requirements may dictate separate services.

1.4 Swing Beds

Change to the occupancy of a group of rooms within the facility shall be permitted to accommodate different patient groups based on age, sex, security level, or treatment programs.

* 1.5 Environment of Care

1.5.1 Therapeutic Environment

The facility shall provide a therapeutic environment appropriate for the planned treatment programs.

1.5.2 Security

The design shall provide the level of security appropriate for the planned treatment programs.

1.5.3 Details and Finishes and Equipment

Special design considerations for injury and suicide prevention shall be given to details, finishes, and equipment as specified in Sections 2.3-6.2 and 2.3-8.

1.6 Site

1.6.1 Parking

In the absence of a formal parking study, the facility shall provide at least one space for each employee normally present during one weekday shift plus one space for every five beds, or a total of 1.5 spaces per patient. This ratio may be reduced when justified by availability of convenient public transportation and public parking. Additional parking may be required for outpatients or other services.

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A1.5 Environment of Care

A safe environment is critical; however, no environment can be entirely safe and free of risk. The majority of persons who attempt suicide suffer from a treatable mental disorder or a substance abuse disorder or both. Patients of inpatient psychiatric treatment facilities are considered at high risk for suicide; the environment should avoid physical hazards while maintaining a therapeutic environment. The built environment, no matter how well it is designed and constructed, cannot be relied upon as an absolute preventive measure. Staff awareness of their environment, the latent risks of that environment, and the behavior risks and needs of the patients served in the environment are absolute necessities. Different organizations and different patient populations will require greater or lesser tolerance for risk.

a. The facility should provide a therapeutic environment appropriate for the planned treatment programs. The environment should be characterized by a feeling of openness with emphasis on natural light. In every aspect of building design and maintenance it is essential to make determinations based on the potential risk to the specific patient population served.

b. Consideration should be given to visual control (including electronic surveillance) of nursing unit corridors, dining areas, and social areas such as dayrooms and activity areas. Hidden alcoves or blind corners or areas should be avoided.

c. The openness of the nurse station will depend on the planned treatment program. Consideration should be given to patient privacy and also to staff safety.

2 Nursing Locations

2.1 General Psychiatric Nursing Unit

Each nursing unit shall include the following (see Sections 1.1-1.3.5 and 1.1-3 for exceptions to standards where existing conditions make absolute compliance impractical).

2.1.1 Typical Psychiatric Patient Rooms

Each patient room shall meet the following standards:

2.1.1.1 Capacity. Maximum room capacity shall be two patients.

2.1.1.2 Space requirements. Minor encroachments, including columns and hand-washing stations, that do not interfere with functions may be ignored when determining space requirements for patient rooms.

- (1) Patient room areas, exclusive of toilet rooms, closets, lockers, wardrobes, alcoves, or vestibules, shall be at least 100 square feet (9.29 square meters) for single-bed rooms and 80 square feet (7.43 square meters) per bed for multiple-bed rooms.
- (2) The areas noted herein are intended as minimums and do not prohibit use of larger rooms where required by the functional program.

2.1.1.3 Windows. Each patient room shall have a window in accordance with Section 2.1-8.2.2.5.

2.1.1.4 Desk. There shall be a desk or writing surface in each room for patient use.

2.1.1.5 Patient toilet rooms

- (1) Each patient shall have access to a toilet room without having to enter the general corridor area. (This direct access requirement may be disregarded if it conflicts with the supervision of patients as required by the functional program.)

- (2) One toilet room shall serve no more than four beds and no more than two patient rooms.
- (3) The toilet room shall contain a water closet and a hand-washing station.
- (4) The door to the toilet room shall swing outward or be double-acting.

2.1.1.6 Patient storage locations

- (1) Each patient shall have within his or her room a separate wardrobe, locker, or closet suitable for hanging full-length garments and for storing personal effects.
- (2) Adequate storage shall be available for a daily change of clothes for seven days.

2.1.2 Security Rooms

Security rooms may be included if required by the functional program.

2.1.2.1 Security rooms shall be single-bed rooms designed to minimize potential for escape, hiding, injury to self or others, or suicide. Access to toilets, showers, and wardrobes shall be restricted.

2.1.2.2 Security rooms may be centralized on one unit or decentralized among units.

*2.1.3 Outdoor Areas

2.2 Special Patient Care Areas

2.2.1 Seclusion Room

The seclusion treatment room is intended for short-term occupancy. Within the psychiatric nursing unit, this space provides for patients requiring security and protection.

2.2.1.1 Capacity

- (1) Each room shall be for only one patient.
- (2) There shall be at least one seclusion room for each 24 beds or fraction thereof on each psychiatric unit.

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A2.1.3 Outdoor areas are not required; however, if patient care programs require them to be provided, they should be arranged to prevent confused residents from wandering outside of designated resident areas.

- (3) If a facility has more than one psychiatric nursing unit, the number of seclusion rooms shall be a function of the total number of psychiatric beds in the facility.

2.2.1.2 Location

- (1) The room(s) shall be located for direct nursing staff supervision.
- (2) Seclusion rooms may be grouped together.

2.2.1.3 Space requirements

- (1) Seclusion treatment rooms shall have an area of at least 60 square feet (5.57 square meters) with a minimum wall length of 7 feet (2.13 meters) and a maximum wall length of 11 feet (3.35 meters).
- (2) Where restraint beds are required by the functional program, 80 square feet (7.43 square meters) shall be required.

2.2.1.4 Layout. Seclusion treatment rooms shall be accessed by an anteroom or vestibule that also provides access to a toilet room. The doors to the anteroom and the toilet room shall be a minimum of 3 feet 8 inches (1.12 meters) wide.

2.2.1.5 Details and finishes. Seclusion treatment rooms shall be constructed to prevent patient hiding, escape, injury, or suicide.

- (1) Fire rating of materials
- (a) Where the interior of the seclusion treatment room is padded with combustible materials, these materials shall be of a type acceptable to the local authority having jurisdiction.
- (b) The room area, including floor, walls, ceilings, and all openings, shall be protected with not less than one-hour-rated construction.
- (2) Seclusion treatment rooms shall not contain outside corners or edges.
- (3) Doors

- (a) The entrance door to the seclusion room shall swing out.
- (b) Doors shall be 3 feet 8 inches (1.12 meters) wide and shall permit staff observation of the patient through a vision panel, while also maintaining provisions for patient privacy.

- (4) Minimum ceiling height shall be 9 feet (2.74 meters).

- (5) Electrical switches and receptacles are prohibited within the seclusion room.

2.2.2 Airborne Infection Isolation Room(s)

2.2.2.1 Number. The need for and number of required airborne infection isolation rooms in the psychiatric hospital shall be determined by an ICRA.

2.2.2.2 Where required, the airborne infection isolation room(s) shall comply with the general requirements of Section 2.1-3.2.2.

2.3 Child Psychiatric Unit

Child psychiatric unit patient areas shall be separate and distinct from any adult psychiatric unit patient areas. The standards of Sections 2.3-2.1, 2.3-2.2.1 and 2.2.2, and 2.3-2.6 shall be applied to child units with the following exceptions:

2.3.1 Patient Rooms

2.3.1.1 Capacity. Maximum room capacity shall be four children.

2.3.1.2 Space requirements. Patient room areas (with beds or cribs) shall be at least 100 square feet (9.29 square meters) for single-bed rooms; 80 square feet (7.43 square meters) per bed and 60 square feet (5.57 square meters) per crib in multiple-bed rooms.

2.3.1.3 Storage. Storage space shall be provided for toys, equipment, extra cribs and beds, and cots or recliners for parents who may stay overnight.

2.3.2 Activity Areas

2.3.2.1 Space requirements

- (1) The combined area for social activities shall be 35 square feet (3.25 square meters) per patient.

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- (2) The total area for social activities and dining space shall be a minimum of 50 square feet (4.65 square meters) per patient.
- (3) If a separate dining space is provided, it shall be a minimum of 15 square feet (1.39 square meters) per patient.

*2.3.3 Outdoor Areas

2.4 Geriatric, Alzheimer's, and Other Dementia Unit

The standards of Sections 2.3-2.1, 2.3-2.2.1 and 2.2.2, and 2.3-2.6 shall be applied to geriatric units with the following exceptions:

2.4.1 Patient Rooms

2.4.1.1 Space requirements. Patient room areas shall be at least 120 square feet (11.15 square meters) in single-bed rooms and 200 square feet (18.58 square meters) in multiple-bed rooms.

2.4.1.2 Linen storage. Each patient bedroom shall have storage for extra blankets, pillows, and linen.

2.4.1.3 Doors. Doors to patient rooms shall be a minimum of 3 feet 8 inches wide (1.12 meters).

2.4.1.4 Nurse call system

- (1) A nurse call system shall be provided in accordance with the standards in Section 2.1-10.3.8.
- (2) Provisions shall be made for easy removal of or for covering call button outlets.
- (3) Call cords or strings in excess of 6 inches (15.24 centimeters) shall not be permitted.

2.4.2 Support Areas for Geriatric, Alzheimer's, and Other Dementia Units

2.4.2.1 Social spaces. The standards of Section 2.3-2.9.1 shall apply for social spaces, except that the combined area for social activities shall be 30 square

feet (2.79 square meters) per patient.

2.4.2.2 Bathing facilities. Patients shall have access to at least one bathtub in each nursing unit.

2.4.2.3 Wheelchair storage. Storage space for wheelchairs shall be provided in the nursing unit.

2.5 Forensic Psychiatric Unit

2.5.1 General

The standards of Sections 2.3-2.1, 2.3-2.2.1 and 2.2.2, and 2.3-2.6 shall apply to forensic units.

2.5.2 Forensic Unit Requirements

2.5.2.1 Forensic units shall have security vestibules or sally ports at the unit entrance.

2.5.2.2 Specialized program requirements may indicate the need for additional treatment areas, police and courtroom space, and security considerations.

2.5.2.3 Areas for children, juveniles, and adolescents shall be separated from adult areas.

2.6 Support Areas—General

2.6.1 Location

2.6.1.1 Provision for the support areas listed shall be located in or readily available to each nursing unit unless otherwise noted.

2.6.1.2 Each support area may be arranged and located to serve more than one nursing unit; however, unless otherwise noted, at least one such support area shall be provided on each nursing floor.

2.6.2 Where the words room or office are used, a separate, enclosed space for the one named function is intended; otherwise, the described area may be a specific space in another room or common area.

2.7 Support Areas for Psychiatric Nursing Units

2.7.1 Administrative Center or Nurse Station

2.7.2 Documentation Area

A separate charting area with provisions for acoustical and patient file privacy shall be provided.

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A2.3.3 Outdoor areas should be protected to allow children to have easy access to secure outdoor areas for play and therapy in facilities where length of stay is two weeks or greater.

2.7.3 Office(s) for Staff

2.7.4 Multipurpose Room(s)

Location of these spaces either within the psychiatric unit or immediately accessible to it shall be permitted unless otherwise dictated by the functional program.

2.7.4.1 Visitor room. A visitor room for patients to meet with friends or family with a minimum floor space of 100 square feet (9.29 square meters).

2.7.4.2 Quiet room. A quiet room shall be provided for a patient who needs to be alone for a short period of time but does not require a seclusion room.

- (1) A minimum of 80 square feet (7.43 square meters) shall be provided.
- (2) The visitor room may serve this purpose.

2.7.4.3 Consultation room(s)

- (1) Separate consultation room(s), with minimum floor space of 100 square feet (9.29 square meters) each, shall be provided at a room-to-bed ratio of one consultation room for each 12 psychiatric beds.
- (2) The room(s) shall be designed for acoustical and visual privacy and constructed to achieve a level of voice privacy of 50 STC (which in terms of vocal privacy means some loud or raised speech is heard only by straining, but is not intelligible).
- (3) The visitor room may serve as a consultation room.

2.7.4.4 Conference room. A conference and treatment planning room shall be provided for use by the psychiatric unit. This room may be combined with the charting room.

2.7.4.5 Space for group therapy. This may be combined with the quiet space noted in Section 2.3-2.9.1 when the unit accommodates not more than 12 patients and when at least 225 square feet (20.90 square meters) of enclosed private space is available for group therapy activities.

2.7.5 Hand-Washing Stations

See Section 2.1-3.1.5.5.

2.7.6 Medication Station

See Section 2.1-2.3.4.

2.7.7 Nourishment Area

Food service within the unit may be one or a combination of the following:

2.7.7.1 A nourishment station

2.7.7.2 A kitchenette designed for patient use with staff control of heating and cooking devices

2.7.7.3 A kitchen service within the unit that includes a hand-washing station, storage space, refrigerator, and facilities for meal preparation

2.7.8 Ice Machine

See Section 2.1-2.3.6.

2.7.9 Clean Workroom or Clean Supply Room

See Section 2.1-2.3.7.

2.7.10 Soiled Workroom

See Section 2.1-2.3.8.

2.7.11 Equipment and Supply Storage

Location of these areas either within the psychiatric units or immediately accessible to them shall be permitted unless otherwise dictated by the functional program.

2.7.11.1 Clean linen storage. See Section 2.1-3.1.5.12 (1).

2.7.11.2 Wheelchair storage space. Storage space for wheelchairs may be outside the psychiatric unit, provided that provisions are made for convenient access as needed for disabled patients.

2.7.11.3 Emergency equipment storage. Space shall be provided for emergency equipment that is under direct control of the nursing staff, such as a CPR cart.

- (1) This space shall be in close proximity to a nurse station.
- (2) The space may serve more than one unit.

2.7.11.4 Administrative supplies storage

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2.7.12 Housekeeping Room

Location of this room either in or immediately accessible to the nursing unit shall be permitted unless otherwise dictated by the functional program. See Section 2.1-3.1.5.13.

2.8 Support Areas for Staff

2.8.1 Staff Lounge Facilities

2.8.2 Staff Toilet Room(s)

2.8.3 Staff Storage Locations

Securable closets or cabinet compartments for the personal effects of nursing personnel shall be conveniently located to the duty station. At a minimum, these shall be large enough for purses and billfolds.

2.9 Support Areas for Patients

2.9.1 Social Spaces

2.9.1.1 At least two separate social spaces, one appropriate for noisy activities and one for quiet activities, shall be provided.

2.9.1.2 Space requirements

- (1) The combined area shall be at least 25 square feet (2.32 square meters) per patient with at least 120 square feet (11.15 square meters) for each of the two spaces.
- (2) This space may be shared by dining activities if an additional 15 square feet (1.39 square meters) per patient is added; otherwise, 20 square feet (1.86 square meters) per patient shall be provided for dining.

2.9.1.3 Dining facilities may be located off the nursing unit in a central area.

2.9.2 Patient Bathing Facilities

2.9.2.1 A bathtub or shower shall be provided for each six beds not otherwise served by bathing facilities within the patient rooms.

2.9.2.2 Bathing facilities shall be designed and located for patient convenience and privacy.

2.9.3 Patient Laundry Facilities

Patient laundry facilities with an automatic washer and dryer shall be provided.

2.9.4 Patient Storage Facilities

- | A staff-controlled, secured storage area shall be provided for patients' effects determined potentially harmful (e.g., razors, nail files, cigarette lighters, etc.).

3 Diagnostic and Treatment Locations

3.1 Examination and Treatment Room(s)

3.1.1 Location

These shall be permitted to serve several nursing units and may be on a different floor if conveniently located for routine use.

3.1.1.2 Space requirements. Examination rooms shall have a minimum floor area of 120 square feet (11.15 square meters), excluding space for vestibule, toilets, and closets.

3.1.1.3 Facility requirements. The room shall contain a hand-washing station; storage facilities; and a desk, counter, or shelf space for writing.

3.2 Imaging Suite

Radiology services are not required to be provided within a psychiatric hospital. If they are provided, the radiology suite shall comply with Section 2.1-5.5.

3.3 Nuclear Medicine

Nuclear medicine services are not required to be provided within a psychiatric hospital. If they are provided, the nuclear medicine area shall comply with Section 2.1-5.6.

3.4 Rehabilitation Therapy Department

3.4.1 General

Rehabilitation therapy in a psychiatric hospital is primarily for the diagnosis and treatment of mental functions but may also seek to address physical functions in varying degrees. It may contain one or several categories of services.

3.4.1.1 If a formal rehabilitative therapy service is included in a project, the facilities and equipment shall

be as necessary to accommodate the functional program.

3.4.1.2 Where two or more rehabilitative services are included, facilities and equipment may be shared as appropriate.

3.4.2 Physical Therapy

An individual's physical health can have a direct effect on his or her mental health. Therefore, physical therapy may be desirable in a psychiatric hospital, especially for long-term care patients and elderly patients. If physical therapy is included in the functional program, the following shall be provided.

3.4.2.1 Individual treatment area(s)

- (1) Privacy. Each area shall have privacy screens or curtains.
- (2) Each such space shall have not less than 60 square feet (5.57 square meters) of clear floor area.

3.4.2.2 Exercise area and facilities

3.4.2.3 Provision for additional therapies. If required by the functional program, provisions for thermotherapy, diathermy, ultrasonics, and hydrotherapy shall be made.

3.4.2.4 Hand-washing stations

- (1) Hand-washing stations for staff shall be available either within or at each treatment space.
- (2) One hand-washing station may serve several treatment stations.

3.4.2.5 Support areas for physical therapy

- (1) Soiled material storage. Separate storage for soiled linen, towels, and supplies shall be provided.
- (2) Equipment and supply storage
 - (a) Clean linen and towel storage
 - (b) Storage for equipment and supplies

3.4.2.6 Support areas for patients. Dressing areas, showers, and lockers for outpatients shall be provided.

3.4.3 Occupational Therapy

Occupational therapy may include such activities as woodworking, leather tooling, art, needlework, painting, sewing, metalwork, and ceramics. The following shall be provided:

3.4.3.1 Work areas and counters

- (1) These shall be suitable for wheelchair access.
- (2) Work areas shall be sized for one therapy group at a time.

3.4.3.2 Other facilities

- * (1) A separate room or alcove shall be provided for a kiln.
- * (2) Display areas shall be provided.

3.4.3.3 Hand-washing stations

3.4.3.4 Equipment and supply storage

- (1) Storage shall be provided for supplies and equipment.
- (2) Secured storage shall be provided for potentially harmful supplies and equipment.

3.4.3.5 Electrical switching. Remote electrical switching shall be provided for potentially harmful equipment.

3.4.4 Vocational Therapy

Vocational therapy assists patients in the development and maintenance of productive work and interaction skills through the use of work tasks. These activities may occur in an industrial therapy workshop in another department or outdoors. If vocational therapy

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A3.4.3.2 (1) Exposure to some art materials, such as solvents and ceramic glazes, is associated with adverse health effects. Such risks should be controlled by adopting methods recommended in appropriate instructional manuals.

A3.4.3.2 (2) Display areas for patients' work, such as shelves or wall surfaces, should be provided.

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is included in the functional program, the following shall be provided:

3.4.4.1 Work areas

- (1) These shall be suitable for wheelchair access.
- (2) Group work areas shall be sized for one therapy group at a time.

3.4.4.2 Hand-washing stations. These shall be provided if required by the functional program.

3.4.4.3 Equipment and supply storage

- (1) Storage for supplies and equipment shall be provided.
- (2) Secured storage for potentially harmful supplies and equipment shall be provided.

3.4.4.4 Electrical switching. Remote electrical switching shall be provided for potentially harmful equipment.

3.4.5 Recreation Therapy

Recreation therapy assists patients in the development and maintenance of community living skills through the use of leisure-time activity tasks. These activities may occur in a recreation therapy department, in specialized facilities (e.g., gymnasium), multipurpose space in other areas (e.g., the nursing unit), or outdoors. If recreation therapy is included in the functional program, the following shall be provided:

3.4.5.1 Activity areas. Activity areas shall be suitable for wheelchair access.

3.4.5.2 Hand-washing stations. These shall be provided if required by the functional program.

3.4.5.3 Equipment and supply storage

- (1) Storage for supplies and equipment shall be provided.
- (2) Secured storage for potentially harmful supplies and equipment shall be provided.

3.4.5.4 Electrical switching. Remote electrical switching shall be provided for potentially harmful equipment.

3.4.6 Education Therapy

Education therapy may be a program requirement, especially for children and adolescents. If education therapy is part of the functional program, the following shall be provided.

3.4.6.1 Classroom with student desks with 30 square feet (2.79 square meters) per desk and at least 150 square feet (13.94 square meters) per classroom shall be provided.

3.4.6.2 Desk and lockable storage for the teacher shall be provided.

3.4.6.3 Storage for supplies, equipment, and books shall be provided.

3.4.7 Support Areas for Rehabilitative Therapy Departments

Each rehabilitative therapy department shall include the following, which may be shared or provided as separate units for each service.

3.4.7.1 Reception and control station(s)

- (1) If reception and control station(s) are required by the functional program, provision shall be made for visual control of waiting and activity areas.
- (2) Reception and control stations may be combined with office and clerical space.

3.4.7.2 Patient waiting area(s)

- (1) Location. Patient waiting area(s) shall be located out of traffic, with provision for wheelchairs.
- (2) Omission of the waiting area shall be permitted if it is not required by the functional program. (Patient waiting time for rehabilitation therapy should be minimized in a psychiatric hospital.)

3.4.7.3 Office and clerical space. Provision shall be made for filing and retrieval of patient records.

3.4.7.4 Multipurpose room. Access to a demonstration/conference room shall be provided.

3.4.7.5 Housekeeping room. A conveniently accessible

housekeeping room and service sink for housekeeping use shall be provided.

3.4.8 Support Areas for Staff

3.4.8.1 Convenient access to toilets and lockers shall be provided.

3.4.8.2 A secured area or cabinet shall be provided within the vicinity of each work area for securing staff personal effects.

3.4.9 Support Areas for Patients

Patient toilets with hand-washing stations that are accessible to wheelchair patients shall be provided.

3.5 Laboratory Suite

3.5.1 Laboratory Requirements

Required laboratory tests may be performed on-site or provided through a contractual arrangement with a laboratory service.

3.5.1.1 Provisions shall be made for the following procedures to be performed on-site: urinalysis, blood glucose, and electrolytes.

3.5.1.2 Provisions shall also be made for specimen collection and processing.

3.5.2 Facility Requirements

Minimum facilities on-site shall include a defined area with a laboratory lab counter, sink with water, refrigerated storage, storage for equipment and supplies, clerical area, and record storage.

4 Service Areas

4.1 Pharmacy

As described in the functional program, the size and type of facilities and equipment to be provided in the pharmacy shall depend on the type of patients and illnesses treated, type of drug distribution system used, number of patients to be served, and extent of shared or purchased services.

4.1.1 Pharmacy Room or Suite

4.1.1.1 Location. The pharmacy room or suite shall be located for convenient access, staff control, and security.

4.1.1.2 Facility requirements. It shall include provisions for procurement, storage, distribution, and recording of drugs and other pharmacy products.

4.1.2 Satellite Facilities

Satellite facilities, if provided, shall include those items required by the functional program.

4.2 Dietary Facilities

See Section 2.1-6.2.

4.3 Central Services

If only primary medical care is provided, central services may not be required or may be provided by countertop sterilizing/cleaning equipment. If decontamination and sterilization are required on-site, a full central services area shall be provided (see Section 2.1-6.3).

4.4 Linen Services

See Section 2.1-6.4.

4.5 Materials Management

4.5.1 General Stores

4.5.1.1 Location. Location of storage in separate, concentrated areas within the institution or in one or more individual buildings on-site shall be permitted. A portion of this storage may be provided off-site.

4.5.1.2 Space requirements. General storage room(s) with a total area of not less than 4 square feet (0.37 square meters) per inpatient bed shall be provided.

4.5.2 Waste Management

See Section 2.1-6.5.3. (See Section 2.1-9.3 for text on waste processing.)

4.6 Environmental Services

4.6.1 Facilities for Cleaning and Sanitizing Carts

See Section 2.1-6.6.1.

4.6.2 Housekeeping Room

See Section 2.1-6.6.2.

4.7 Engineering Services and Maintenance

See Section 2.1-6.7.

5 Administrative and Public Areas

See Section 2.1-7.

5.1 Medical Records

See Section 2.1-7.2.5.

5.2 Employee Facilities

See Section 2.1-7.2.7.

6 Construction Standards

6.1 Design and Construction, Including Fire-Resistant Standards

See Section 2.1-8.1.

6.2 General Standards for Details and Finishes

6.2.1 General

Details and finishes shall comply with Section 2.1-8.2 except as shown in this section. Special design consideration shall be given to injury and suicide prevention as discussed here:

6.2.2 Details

6.2.2.1 Doors

- (1) Door width. The minimum door width for patient use access in new work shall be at least 3 feet (91.44 centimeters).
- (2) Door swings. Door swings for private patient bathrooms or shower areas shall swing out to allow for staff emergency access.
- (3) Door closers
 - (a) Door closers are to be avoided unless required.
 - (b) Door closer devices, if required on the patient room door, shall be mounted on the public side of the door rather than the private patient side of the door.

- (c) Ideally, the door closer (if required) should be within view of a nurse or staff workstation.
- (4) Door hinges
 - (a) Door hinges shall be designed to minimize points for hanging (i.e., cut hinge type).
 - (b) Door hinges used shall be consistent with the level of care for the patient.
- (5) Door lever handles. These shall point downward when in the latched position.
- (6) Fasteners. All hardware shall have tamper-resistant fasteners.

***6.2.2.2 Windows.** All glazing (both interior and exterior), borrow lights, and glass mirrors shall be fabricated with laminated safety glass or protected by polycarbonate, laminate, or safety screens.

6.2.2.3 Furniture

- (1) Clothing rods or hooks, if present, shall be designed to minimize the opportunity for residents to cause injury.
- (2) Furniture shall be constructed to withstand physical abuse.
- (3) Drawer pulls shall be of the recessed type to eliminate the possibility of use as a tie-off point.

6.2.2.4 Bathroom hardware and accessories. Special design considerations for injury and suicide prevention shall be given to shower, bath, toilet, and sink hardware and accessories, including grab bars and toilet paper holders.

(1) Grab bars

- (a) ADA- or ANSI-compliant grab bars are required in 10 percent of the private/semi-private patient toilet rooms. The remaining rooms are not required to have grab bars.
- (b) Grab bars in patient toilet rooms for fully ambulatory patients shall be removable.

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A6.2.2.2 The use of drapery is discouraged.

- (c) Where grab bars are provided, the space between the bar and the wall shall be filled to prevent a cord being tied around it for hanging.
- (d) Bars, including those that are part of such fixtures as soap dishes, shall be sufficiently anchored to sustain a concentrated load of 250 pounds (113.4 kilograms).

(2) The following are not permitted:

- (a) Towel bars
- (b) Shower curtain rods
- (c) Lever handles

6.2.3 Finishes

6.2.3.1 Ceilings

- (1) In private patient bathrooms, the ceiling shall be of the tamper-resistive type or of sufficient height to prevent patient access. Ceiling systems of a non-secured (non-clipped down) lay-in ceiling tile design are not permitted.
- (2) In patient bedrooms where acoustical ceilings are permitted by the functional program, the ceiling shall be secured or of sufficient height to prevent patient access.
- (3) In private patient bathrooms, any plumbing, piping, ductwork, or other potentially hazardous elements shall be concealed above a ceiling.
- (4) In patient bedrooms and bathrooms, ceiling access panels shall be secured or of sufficient height to prevent patient access.
- (5) In patient bedrooms and bathrooms, ventilation grilles shall be secured and have small perforations to eliminate their use as a tie-off point or shall be of sufficient height to prevent patient access.

6.2.3.2 Sprinkler heads and other protrusions

- (1) In unsupervised patient areas, sprinkler heads shall be recessed or of a design to minimize patient access.

- (2) In private patient bathrooms, air distribution devices, lighting fixtures, sprinkler heads, and other appurtenances shall be of the tamper-resistant type.

7 Special Systems

7.1 General

7.1.1 Testing

7.1.1.1 Prior to acceptance of the facility, all special systems shall be tested and operated to demonstrate to the owner or his designated representative that the installation and performance of these systems conform to design intent.

7.1.1.2 Test results shall be documented for maintenance files.

7.1.2 Documentation

7.1.2.1 Upon completion of the special systems equipment installation contract, the owner shall be furnished with a complete set of manufacturers' operating, maintenance, and preventive maintenance instructions, parts lists, and complete procurement information including equipment numbers and descriptions.

7.1.2.2 Operating staff persons shall also be provided with written instructions for proper operation of systems and equipment. Required information shall include all safety or code ratings as needed.

7.1.3 Insulation

Insulation shall be provided surrounding special systems equipment to conserve energy, protect personnel, and reduce noise.

7.2 Elevators

7.2.1 General

All buildings with patient facilities (such as bedrooms, dining rooms, or recreation areas) or services (such as diagnostic or therapeutic areas) located on other than the main entrance floor shall have electric or hydraulic elevators.

7.2.2 Leveling Device

Elevators shall be equipped with a two-way automatic level-maintaining device with an accuracy of $\pm 1/4$ inch (± 6.35 millimeters).

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7.2.3 Elevator Controls

7.2.3.1 Each elevator, except those for material handling, shall be equipped with an independent keyed switch for staff use for bypassing all landing button calls and responding to car button calls only.

***7.2.3.2** Elevator call buttons shall be key controlled if required by the functional program, and controls shall not be activated by heat or smoke. Light beams, if used for operating door reopening devices without touch, shall be used in combination with door-edge safety devices and shall be interconnected with a system of smoke detectors.

7.2.4 Installation and Testing

7.2.4.1 Standards. Installation and testing of elevators shall comply with ANSI/ASME A17.1 for new construction and ANSI/ASME A17.3 for existing facilities. (See ASCE 7-93 for seismic design and control systems requirements for elevators.)

7.2.4.2 Documentation. Field inspections and tests shall be made and the owner shall be furnished with written certification stating that the installation meets the requirements set forth in this section as well as all applicable safety regulations and codes.

7.3 Waste Processing

See Section 2.1-9.3. (See Section 2.1-6.5.3 for text on waste management.)

8 Building Systems

8.1 Plumbing

8.1.1 General

Unless otherwise specified herein, all plumbing systems shall be designed and installed in accordance with the

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A7.2.3.2 This is so the light control feature will be overridden or disengaged should it encounter smoke at any landing.

A8.2.1.1 (1) Remodeling and work in existing facilities may present special problems. As practicality and funding permit, existing insulation, weather stripping, etc., should be brought up to standard for maximum economy and efficiency. Consideration should be given to additional work that may be needed to achieve this.

chapters in the International Plumbing Code that area applicable for this occupancy.

8.1.2 Plumbing and Other Piping Systems

8.1.2.1 General piping and valves. See Section 2.1-10.1.2.1.

8.1.2.2 Potable water supply systems. See Section 2.1-10.1.2.3.

8.1.2.3 Hot water systems. See Section 1.6-2.1.2.1.

8.1.2.4 Drainage systems. See Section 2.1-10.1.2.5.

8.1.2.5 Condensate drains. See Section 1.6-2.1.2.2.

8.1.2.6 Plumbing in food preparation and storage areas. See Section 2.1-10.1.2.5.

8.1.3 Plumbing Fixtures

8.1.3.1 See Sections 1.6-2.1.3 and 2.1-10.1.3.

8.1.3.2 Special design considerations for injury and suicide prevention shall be given to shower, bath, toilet, and sink plumbing fixtures. Shower heads shall be of flush-mounted design to minimize hanging appendages.

8.1.4 Medical Gas and Vacuum Systems

8.1.4.1 Installation, testing, and certification of non-flammable medical gas and air systems. See Section 2.1-10.1.4.1.

8.1.4.2 Clinical vacuum systems. See Section 2.1-10.1.4.2.

8.2 Heating, Ventilating, and Air-Conditioning (HVAC) Systems

8.2.1 General

8.2.1.1 Mechanical system design

*** (1)** Efficiency. The mechanical system shall be designed for overall efficiency and appropriate life-cycle cost. Details for cost-effective implementation of design features are interrelated and too numerous (as well as too basic) to list individually.

- (a) Recognized engineering procedures shall be followed for the most economical and effective results.

- (b) In no case shall patient care or safety be sacrificed for conservation.
 - (c) Insofar as practical, the facility shall include provisions for recovery of waste cooling and heating energy (ventilation, exhaust, water and steam discharge, cooling towers, incinerators, etc.).
 - * (d) Use of recognized energy-saving mechanisms such as variable-air-volume (VAV) systems, load shedding, programmed controls for unoccupied periods (nights and weekends, etc.), and natural ventilation shall be considered, site and climatic conditions permitting.
 - (e) Facility design considerations shall include site, building mass, orientation, configuration, fenestration, and other features relative to passive and active energy systems.
- (2) Air-handling systems
- (a) These shall be designed with an economizer cycle where appropriate to use outside air. (Use of mechanically circulated outside air does not reduce need for filtration.)
 - (b) VAV systems. The energy-saving potential of variable air volume systems is recognized, and these standards are intended to maximize appropriate use of such systems. Any system used for occupied areas shall include provisions to avoid air stagnation in interior spaces where thermostat demands are met by temperatures of surrounding areas.
 - (c) Noncentral air-handling systems (i.e., individual room units that are used for heating and cooling purposes, such as fan-coil units, heat pump units, etc.). These units may be used as recirculating units only. All outdoor requirements shall be met by a separate central air-handling system with the proper filtration, as noted in Table 2.1-3.
- (3) Vibration isolators. Mechanical equipment, ductwork, and piping shall be mounted on vibration isolators as required to prevent unacceptable structure-borne vibration.
- (4) System valves. Supply and return mains and risers for cooling, heating, and steam systems shall be equipped with valves to isolate the various sections of each system. Each piece of equipment shall have valves at the supply and return ends.
- (5) Renovation. If system modifications affect greater than 10 percent of the system capacity, designers shall utilize pre-renovation water/air flow rate measurements in the affected zones to verify that sufficient capacity is available and that renovations have not adversely affected flow rates in non-renovated areas.
- 8.2.1.2 Ventilation and space conditioning requirements.** All rooms and areas used for patient care shall have provisions for ventilation.
- (1) Ventilation rates. The ventilation systems shall be designed and balanced, as a minimum, according to the requirements shown in Table 2.1-2 and its applicable notes. The ventilation rates shown in Table 2.1-2 do not preclude the use of higher, more appropriate rates.
 - (2) Air change rates. Air supply and exhaust in rooms for which no minimum total air change rate is noted may vary down to zero in response to room load. For rooms listed in Table 2.1-2, where VAV systems are used, minimum total air change shall be within limits noted.
 - (3) Temperature and humidity levels. Space temperature and relative humidity shall be as indicated in Table 2.1-2.
- 8.2.1.3 Documentation**
- (1) Upon completion of the equipment installation contract, the owner shall be furnished with a complete

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A8.2.1.1 (1)(d) Systems with excessive installation and/or maintenance costs that negate long-range energy savings should be avoided.

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set of manufacturers' operating, maintenance, and preventive maintenance instructions, parts lists, and complete procurement information, including equipment numbers and descriptions. Required information shall include energy ratings as needed for future conservation calculations.

- (2) Operating staff persons shall also be provided with written instructions for proper operation of systems and equipment.

8.2.2 Requirements for Specific Locations

8.2.2.1 Patient-occupied areas. Special consideration shall be given to the type of heating and cooling units, ventilation outlets, and appurtenances installed in patient-occupied areas of the psychiatric hospital. The following shall apply:

- (1) All air grilles and diffusers shall be of a type that prohibits the insertion of foreign objects. All exposed fasteners shall be tamper-resistant.
- (2) All convector or HVAC enclosures exposed in the room shall be constructed with rounded corners and shall have enclosures fastened with tamper-resistant screws.
- (3) HVAC equipment shall be of a type that minimizes the need for maintenance within the room.

8.2.2.2 Cough-inducing procedure rooms. Rooms used for sputum induction, aerosolized pentamidine treatments, and other cough-inducing procedures shall meet the requirements of Table 2.1-2 for airborne infection isolation rooms. If booths are used, refer to Section 2.1-5.8.1.

8.2.2.3 Food preparation centers

- (1) Exhaust hoods handling grease-laden vapors in food preparation centers shall comply with NFPA 96.
- (2) All hoods over cooking ranges shall be equipped

with grease filters, fire-extinguishing systems, and heat-actuated fan controls.

- (3) Cleanout openings shall be provided every 20 feet (6.10 meters) and at changes in direction in the horizontal exhaust duct systems serving these hoods. Horizontal runs of ducts serving range hoods shall be kept to a minimum.

8.2.2.4 Fuel-fired equipment rooms. Rooms with fuel-fired equipment shall be provided with sufficient outdoor air to maintain equipment combustion rates and to limit workstation temperatures.

8.2.3 Thermal Insulation and Acoustical Provisions

See Section 1.6-2.2.1.

8.2.4 HVAC Air Distribution

8.2.4.1 Return air systems. For patient care areas, return air shall be via ducted systems.

8.2.4.2 HVAC ductwork

- (1) General
 - (a) Air-handling duct systems shall be designed with accessibility for duct cleaning and shall meet the requirements of NFPA 90A.
 - (b) When smoke partitions are required, heating, ventilation, and air conditioning zones shall be coordinated with compartmentation insofar as practical to minimize need to penetrate fire and smoke partitions.

* (2) Duct humidifiers

- (a) If duct humidifiers are located upstream of the final filters, they shall be at least 15 feet (4.57 meters) upstream of the final filters.
- (b) Ductwork with duct-mounted humidifiers shall have a means of water removal.
- (c) An adjustable high-limit humidistat shall be located downstream of the humidifier to reduce the potential for condensation inside the duct.

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A8.2.4.2 (2) See *Industrial Ventilation: A Manual of Recommended Practice*, published by the American Conference of Governmental Industrial Hygienists (www.acgih.org), for additional information.

- (d) All duct takeoffs shall be sufficiently downstream of the humidifier to ensure complete moisture absorption. Steam humidifiers shall be used.
 - (e) Reservoir-type water spray or evaporative pan humidifiers shall not be used.
- (3) Fire and smoke dampers
- (a) Fire and smoke dampers shall be constructed, located, and installed in accordance with the requirements of NFPA 101, 90A, and the specific damper's listing requirements.
 - (b) Fans, dampers, and detectors shall be interconnected so that damper activation will not damage ducts.
 - (c) Maintenance access shall be provided at all dampers.
 - (d) All damper locations shall be shown on design drawings.
 - (e) Dampers shall be activated by fire or smoke sensors, not by fan cutoff alone. Installation of switching systems for restarting fans shall be permitted for fire department use in venting smoke after a fire has been controlled. However, provisions should be made to avoid possible damage to the system due to closed dampers.
- (4) Construction requirements. Ducts that penetrate construction intended for x-ray or other ray protection shall not impair the effectiveness of the protection.

8.2.4.3 Exhaust systems

- (1) To enhance the efficiency of recovery devices required for energy conservation, combined exhaust systems shall be permitted.
- (2) Local exhaust systems shall be used wherever possible in place of dilution ventilation to reduce exposure to hazardous gases, vapors, fumes, or mists.

- (3) Fans serving exhaust systems shall be located at the discharge end and shall be readily serviceable.

8.2.4.4 Air outlets and inlets

- (1) Fresh air intakes
 - (a) Fresh air intakes shall be located at least 25 feet (7.62 meters) from exhaust outlets of ventilating systems, combustion vents (including those serving rooftop air-handling equipment), medical-surgical vacuum systems, plumbing vents, or areas that may collect vehicular exhaust or other noxious fumes. (Prevailing winds and/or proximity to other structures may require greater clearances.)
 - (b) Plumbing vents that terminate at a level above the top of the air intake may be located as close as 10 feet (3.05 meters).
 - (c) The bottom of outdoor air intakes serving central systems shall be as high as practical, but at least 6 feet (1.83 meters) above ground level, or, if installed above the roof, 3 feet (91.44 centimeters) above roof level.
- (2) Relief air. Relief air is exempt from the 25-foot separation requirement. Relief air is defined as air that otherwise could be returned (recirculated) to an air handling unit from the occupied space, but is being discharged to the outdoors to maintain building pressure, such as during outside air economizer operation.
- (3) Exhaust outlets from areas that may be contaminated shall be above roof level, arranged to minimize recirculation of exhaust air into the building, and directed away from personnel service areas.
- (4) Gravity exhaust. Where conditions permit, gravity exhaust shall be permitted for nonpatient areas such as boiler rooms, central storage, etc.

8.2.5 HVAC Filters

8.2.5.1 Filter efficiencies

- (1) All central ventilation or air conditioning systems shall be equipped with filters with efficiencies equal to, or greater than, those specified in Table 2.1-3.

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- (2) Noncentral air-handling systems shall be equipped with permanent (cleanable) or replaceable filters with a minimum efficiency of MERV 3 (68 percent weight arrestance).
- (3) Filter efficiencies, tested in accordance with ASHRAE 52.1, shall be average.

8.2.5.2 Filter frames. Filter frames shall be durable and proportioned to provide an airtight fit with the enclosing ductwork. All joints between filter segments and enclosing ductwork shall have gaskets or seals to provide a positive seal against air leakage.

8.2.5.3 Filter housing blank-off panels. Filter housing blank-off panels shall be permanently attached to the frame, constructed of rigid materials, and have sealing surfaces equal to or greater than the filter media installed in the filter frame.

8.2.5.4 Filter manometers. A manometer shall be installed across each filter bed having a required efficiency of 75 percent or more. Provisions shall be made to allow access for field testing.

8.2.6 Steam and Hot Water Systems

Boilers shall have the capacity, based upon the net ratings published by the Hydronics Institute or another acceptable national standard, to supply the normal heating, hot water, and steam requirements of all systems and equipment.

8.3 Electrical Systems

8.3.1 General

8.3.1.1 Applicable standards

- (1) All electrical material and equipment, including conductors, controls, and signaling devices, shall be installed in compliance with applicable sections of NFPA 70 and NFPA 99.
- (2) All electrical material and equipment shall be listed as complying with available standards of listing agencies or other similar established standards where such standards are required.

8.3.1.2 Testing and documentation. The electrical installations, including alarm, nurse call, staff emer-

gency signed system, and communication systems, shall be tested to demonstrate that equipment installation and operation is appropriate and functional. A written record of performance tests on special electrical systems and equipment shall show compliance with applicable codes and standards.

8.3.2 Electrical Distribution and Transmission

8.3.2.1 Switchboards

- (1) Location
 - (a) Main switchboards shall be located in an area separate from plumbing and mechanical equipment and shall be accessible to authorized persons only.
 - (b) Switchboards shall be convenient for use, readily accessible for maintenance, and away from traffic lanes.
 - (c) Switchboards shall be located in dry, ventilated spaces free of corrosive or explosive fumes, gases, or any flammable material.
- (2) Overload protective devices. These shall operate properly in ambient room temperatures.

8.3.2.2 Panelboards

- (1) Panelboards serving normal lighting and appliance circuits shall be located on the same floor as the circuits they serve.
- (2) Panelboards serving critical branch emergency circuits shall be located on each floor that has major users.
- (3) Location of panelboards serving life safety emergency circuits on the floors above and/or below the loads to be served shall be permitted.

8.3.2.3 Ground-fault circuit interrupters

- (1) Ground-fault circuit interrupters (GFCIs) shall comply with NFPA 70.
- (2) When ground-fault circuit interrupters are used in critical areas, provisions shall be made to ensure

that other essential equipment is not affected by activation of one interrupter.

8.3.3 Power-Generating and -Storing Equipment

8.3.3.1 Emergency Electrical Service

- (1) As a minimum, psychiatric hospitals or sections thereof shall have emergency electrical systems as required in NFPA 99, NFPA 101, and NFPA 110.
- (2) Where the psychiatric facility is a distinct part of an acute care hospital, it may use the emergency generator system for required emergency lighting and power if such sharing does not reduce hospital services. Life support systems and their respective areas shall be subject to applicable standards of Section 2.1-10.3.
- (3) An emergency electrical source shall provide lighting and/or power during an interruption of the normal electrical supply.

8.3.4 Lighting

8.3.4.1 General

- (1) Lighting shall be engineered to the specific application.
- (2) Recommended lighting levels for health care facilities developed by the Illuminating Engineering Society of North America (IES) shall be considered. Refer to the IES publication RP-29, *Lighting for Hospitals and Health Care Facilities*.
- (3) Consideration shall be given to the special needs of the elderly. Excessive contrast in lighting levels that makes effective sight adaptation difficult shall be minimized. Refer to IES publication RP-28, *Lighting and the Visual Environment for Senior Living*.

8.3.4.2 Light fixtures. Light fixtures shall be secured or of sufficient height to prevent patient access.

8.3.4.3 Lighting for specific locations in the psychiatric hospital

- (1) Patient rooms. Patient rooms shall have general lighting and night lighting. At least one night

fixture in each patient room shall be controlled at the room entrance.

- (2) Nursing unit corridors. Corridors in nursing units shall have general illumination with provisions for reducing light levels at night.
- (3) Exterior lighting. Approaches to buildings and parking lots and all occupied spaces shall have lighting fixtures that can be illuminated as necessary.

8.3.5 Electrical Equipment

8.3.5.1 General electrical equipment. Special design considerations for injury and suicide prevention shall be given to the electrical equipment in the psychiatric hospital, including light fixtures, electrical outlets, electrical appliances, nurse call systems and staff emergency assistance systems.

8.3.5.2 Special electrical equipment. Special equipment is identified in the sections on nursing units, support areas, rehabilitation therapy, laboratory, pharmacy, and imaging, if applicable. These sections shall be consulted to ensure compatibility between programmatically defined equipment needs and appropriate power and other electrical connection needs.

8.3.6 Receptacles (Convenience Outlets)

8.3.6.1 Receptacles in corridors

- (1) Duplex-grounded receptacles for general use shall be installed approximately 50 feet (15.24 meters) apart in all corridors and within 25 feet (7.62 meters) of corridor ends.
- (2) These outlets shall be tamper-resistant or equipped with ground-fault circuit interrupters (GFCIs).

8.3.6.2 Receptacles in patient rooms. Each patient room shall have duplex-grounded receptacles.

- (1) Electrical receptacles in patient rooms shall be tamper-resistant or equipped with ground-fault circuit interrupters (GFCIs).
- (2) There shall be one at each side of the head of each bed and one on every other wall.
- (3) Receptacles may be omitted from exterior walls

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where construction or room configuration makes installation impractical.

8.3.6.3. Emergency system receptacles. Electrical receptacle cover plates or electrical receptacles supplied from the emergency system shall be distinctively colored or marked for identification. If color is used for identification purposes, the same color shall be used throughout the facility.

8.3.7 Call Systems

***8.3.7.1 General.** Use of alternate technologies for emergency or nurse call systems shall be permitted.

- (1) Staff response call systems shall be low voltage, current limited.
- (2) Control to limit unauthorized use shall be permitted.

8.3.7.2 Nursing unit. A nurse call system is not required in psychiatric nursing units, but if it is included the following shall apply:

- (1) Provisions shall be made for easy removal or covering of call buttons.
- (2) All hardware shall have tamper-resistant fasteners.
- (3) Signal location
 - (a) Calls shall activate a visible signal in the corridor at the patient's door and at an annunciator panel at the nurse station or other appropriate location.
 - (b) In multi-corridor nursing units, additional visible signals shall be installed at corridor intersections.

8.3.7.3 Emergency call system

- (1) If provided, the staff emergency call shall be designed so that a signal activated by staff at a

patient's calling station will initiate a visible and audible signal distinct from the regular nurse call system.

- (2) The signal shall activate an annunciator panel at the nurse station or other appropriate location, a distinct visible signal in the corridor at the door to the room from which the signal was initiated, and at other areas defined by the functional program.

8.4 Telecommunications and Information Systems

8.4.1 Locations for terminating telecommunications and information system devices shall be provided.

8.4.2 An area shall be provided for central equipment locations. Special air conditioning and voltage regulation shall be provided when recommended by the manufacturer.

8.4.3 Data processing and/or automated laboratory or diagnostic equipment, if provided, may require safeguards from power line disturbances.

8.5 Electronic Safety and Security

8.5.1 Electronic Surveillance Systems

8.5.1.1 Electronic surveillance systems are not required in psychiatric nursing units, but if provided for the safety of the residents, any devices in resident areas shall be mounted in a tamper-resistant enclosure that is unobtrusive.

8.5.1.2 Electronic surveillance system monitoring devices shall be located so they are not readily observable by the general public or other patients.

8.5.1.3 If installed, electronic surveillance systems shall be supplied with power from the emergency electrical system in the event of a disruption of normal electrical power.

8.5.2 Fire Detection and Suppression System

8.5.2.1 Fire alarm and detection systems shall be provided in compliance with NFPA 101 and NFPA 72.

8.5.2.2 Fire extinguisher cabinets and fire alarm pull stations shall be located in staff areas or otherwise secured in patient-accessible locations.

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A8.3.7.1 If radio frequency systems are used, consideration should be given to electromagnetic compatibility between internal and external sources.